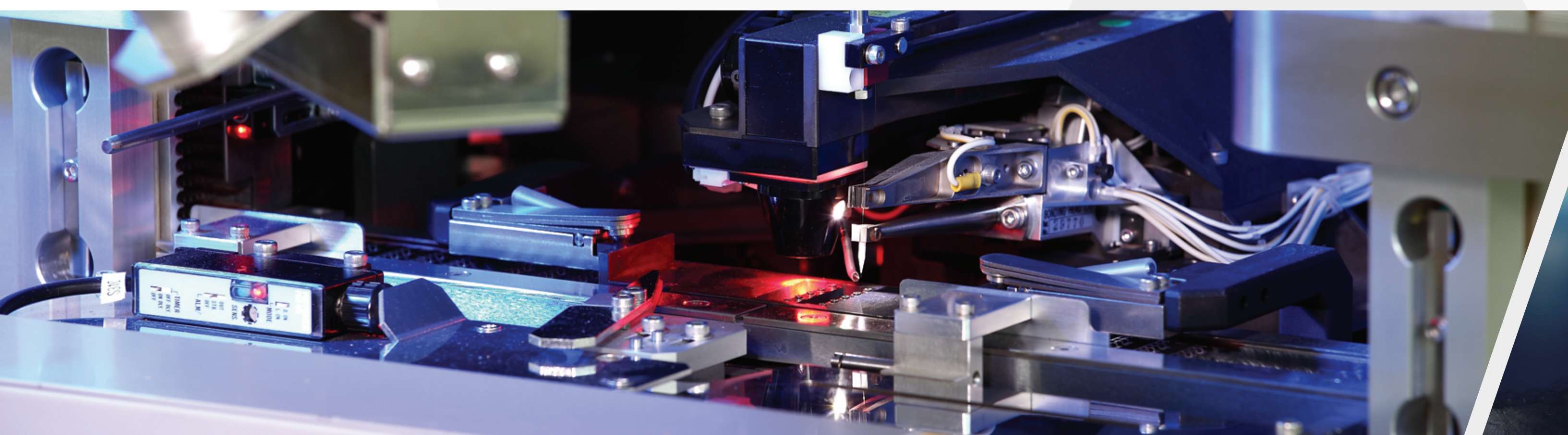
Letex
Technology Corp

QUALITY.INNOVATION.SERVICE

www.letex.com.tw
LETEX TECHNOLOGY CORP.

Letex
Technology Corp.

CONTENTS



1 Photo DMOS Relay 光電繼電器

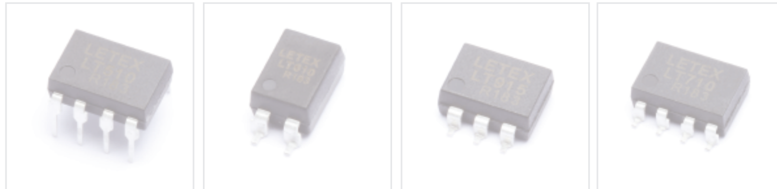
Features

- **SOP package in miniature design**
  - 4 pin 4.4×4.30×2.0 [.173×.169×.083]
  - 8 pin 4.4×9.40×2.0 [.173×.370×.083]
- **DIP / SMD package in miniature design**
  - 4 pin 6.4×4.70×3.4 [.252×.185×.134]
  - 6 pin 6.4×8.80×3.4 [.252×.347×.134]
  - 8 pin 6.4×9.78×3.4 [.252×.385×.134]
- **Low driver power requirements (TTL/CMOS Compatible)**
- **No moving parts**
- **High reliability**
- **Arc-Free with no snubbing circuits**
- **I/O Breakdown Voltage**
  - SOP package 1500Vrms Input/Output isolation
  - DIP/SMD package 3750 / 5000Vrms Input/Output isolation
- **Tape & Reel version available**
- **UL Approved (No. E222222)**
- **CUL Approved (No. E222222)**

Applications

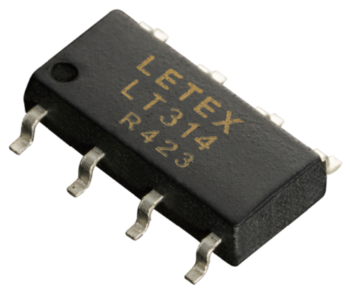
- ***Telecommunications (PC, Electronic notepad)***
- ***Measuring and Testing equipments***
- ***Industrial controls***
- ***Security equipment***
- ***High speed inspection machines***
- ***Data communication equipments***
- ***OCU(Office channel unit) line switching***
- ***Need to eliminate inrush and counter electromotive force***
- ***Factory automotive equipments***

SOP 4-Pin



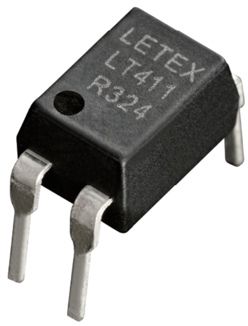
P/No.	Load	Load Voltage VL [V]	Load Current IL [mA]	On-State Resistance Ron [Ω]	I/O Isolation Voltage Viso [V]	contact type	Page
LT216	AC/DC	20	1700	0.5	1500	1a	p.15
LT216D	DC	20	5000	0.2	1500	1a	p.16
LT218	AC/DC	40	2500	0.06	1500	1a	p.12
LT218D	DC	40	3500	0.05	1500	1a	p.16
LT221RS*	AC/DC	40	200	1.5	1500	1a	p.17
LT224	AC/DC	40	3000	0.033	1500	1a	p.18
LT215	AC/DC	60	400	1	1500	1a	p.11
LT219	AC/DC	60	800	0.3	1500	1a	p.12
LT219-1	AC/DC	60	1300	0.13	1500	1a	p.14
LT219-2	AC/DC	60	600	0.2	1500	1a	p.12
LT219-3	AC/DC	60	800	0.13	1500	1a	p.12
LT223RS	AC/DC	60	120	4.5	1500	1a	p.17
LT233	AC/DC	60	200	2	1500	1a	p.12
LT237-1	AC/DC	60	2500	0.06	1500	1a	p.14
LT237HT	AC/DC	60	350	0.13	1500	1a	p.14
LT238*	AC/DC	60	500	0.8	1500	1a	p.15
LT239	AC/DC	60	500	0.8	1500	1a	p.15
LT243	AC/DC	60	120	5	1500	1a	p.12
LT214-M46*	AC/DC	80	80	35	1500	1a	p.11
LT222RS*	AC/DC	80	80	20	1500	1a	p.17
LT225	AC/DC	100	1250	0.16	1500	1a	p.14
LT236	AC/DC	100	400	2	1500	1a	p.13
LT213	AC/DC	200	180	5	1500	1a	p.11
LT241	AC/DC	250	150	9	1500	1a	p.11
LT211	AC/DC	350	120	17	1500	1a	p.10
LT211SC	AC/DC	350	120	17	1500	1a	p.27
LT235	AC/DC	350	250	12	1500	1a	p.13
LT210	AC/DC	400	100	20	1500	1a	p.10
LT232	AC/DC	400	250	8	1500	1a	p.13
LT240	AC/DC	400	120	17	1500	1a	p.10
LT245	AC/DC	400	120	20	1500	1a	p.10
LT227	AC/DC	600	80	35	1500	1a	p.10
LU210	AC/DC	400	120	20	1500	1b	p.19
LU234	AC/DC	60	500	0.5	1500	1b	p.19

Notes. *1. LT214-M46, LT221RS, LT222RS, LT223RS Low C x R



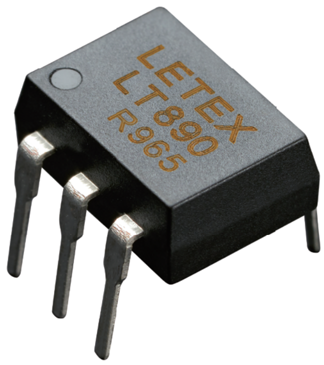
P/No.	Load	Load Voltage VL [V]	Load Current IL [mA]	On-State Resistance Ron [Ω]	I/O Isolation Voltage Viso [V]	contact type	Page
LT316	AC/DC	20	1700	0.5	1500	2a	p.15
LT318	AC/DC	40	2000	0.06	1500	2a	p.12
LT321RS*	AC/DC	40	200	1.5	1500	2a	p.17
LT324	AC/DC	40	2000	0.033	1500	2a	p.18
LT315	AC/DC	60	400	1	1500	2a	p.11
LT319	AC/DC	60	800	0.3	1500	2a	p.12
LT319-1	AC/DC	60	1100	0.13	1500	2a	p.14
LT333	AC/DC	60	200	2	1500	2a	p.12
LT337-1	AC/DC	60	2500	0.06	1500	2a	p.14
LT338*	AC/DC	60	500	0.8	1500	2a	p.15
LT339	AC/DC	60	500	0.8	1500	2a	p.15
LT314-M46*	AC/DC	80	80	35	1500	2a	p.11
LT322RS*	AC/DC	80	80	20	1500	2a	p.17
LT325	AC/DC	100	1100	0.13	1500	2a	p.14
LT336	AC/DC	100	400	2	1500	2a	p.13
LT313	AC/DC	200	180	5	1500	2a	p.11
LT341	AC/DC	250	150	9	1500	2a	p.11
LT311	AC/DC	350	120	17	1500	2a	p.10
LT311DR1	AC/DC	350	100	17	1500	2a	p.10
LT311R1	AC/DC	350	120	17	1500	2a	p.10
LT310	AC/DC	400	100	20	1500	2a	p.10
LT327	AC/DC	600	80	35	1500	2a	p.10
LU310	AC/DC	400	120	20	1500	2b	p.19
LU334	AC/DC	60	400	0.3	1500	2b	p.19
LTU320	AC/DC	400	120	20	1500	**1a1b**	p.20
LTU315	AC/DC	60	400	1	1500	**1a1b**	p.20

Notes. *1. LT314 Low C x R *2. LT338 Low C x R
*3. LT311-R1 = The input terminal contains a current 330Ω limiting resistor

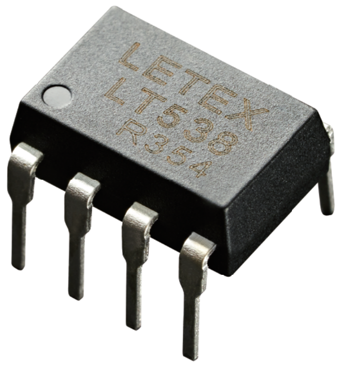


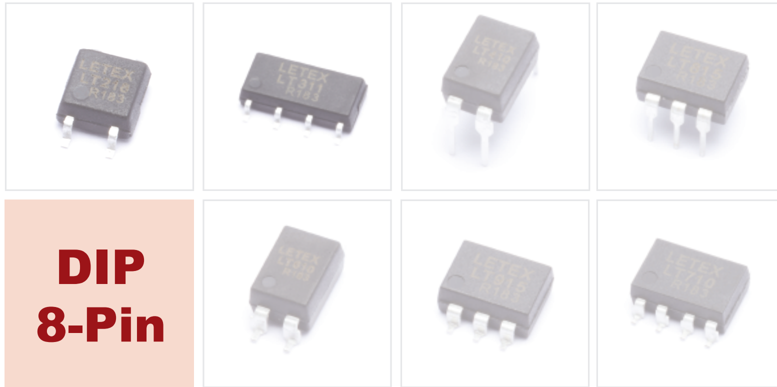
DIP 4-Pin

P/No.	Load	Load Voltage VL [V]	Load Current IL [mA]	On-State Resistance Ron [Ω]	I/O Isolation Voltage Viso [V]	contact type	Page
LT416	AC/DC	20	2000	0.1	3750	1a	p.15
LT418	AC/DC	40	2500	0.06	3750	1a	p.12
LT415	AC/DC	60	500	1	3750	1a	p.11
LT419	AC/DC	60	1100	0.3	3750	1a	p.12
LT433	AC/DC	60	200	2	3750	1a	p.12
LT437	AC/DC	60	3000	0.06	3750	1a	p.14
LT438	AC/DC	60	500	0.8	3750	1a	p.15
LT425	AC/DC	100	1250	0.16	3750	1a	p.14
LT436	AC/DC	100	400	0.4	3750	1a	p.13
LT413	AC/DC	200	200	5	3750	1a	p.11
LT411	AC/DC	350	130	17	3750	1a	p.10
LT410	AC/DC	400	130	20	3750	1a	p.10
LT427	AC/DC	600	80	35	3750	1a	p.10
LU410	AC/DC	400	120	20	3750	**1b**	p.19
LU434	AC/DC	60	500	0.3	3750	**1b**	p.19



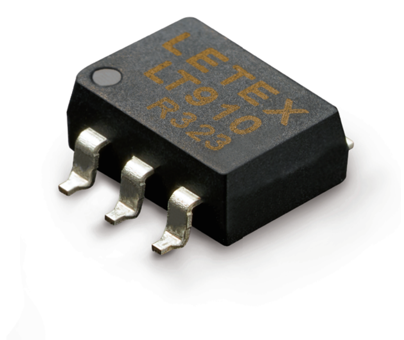
P/No.	Load	Load Voltage VL [V]	Load Current IL [mA]	On-State Resistance Ron [Ω]	I/O Isolation Voltage Viso [V]	contact type	Page
LT816	AC/DC	20	2000	0.1	3750	1a	p.15
LT818	AC/DC	40	3000	0.06	3750	1a	p.12
LT824	AC/DC	40	3500	0.043	3750	1a	p.18
LT828	AC/DC	40	4500	0.033	3750	1a	p.18
LT815	AC/DC	60	500	1	3750	1a	p.11
LT815-1	AC/DC	60	2500	0.1	3750	1a	p.14
LT819	AC/DC	60	1100	0.13	3750	1a	p.14
LT833	AC/DC	60	200	2	3750	1a	p.12
LT837-1	AC/DC	60	3000	0.07	3750	1a	p.14
LT837HT	AC/DC	60	500	0.17	3750	1a	p.14
LT838	AC/DC	60	500	0.8	3750	1a	p.15
LT825	AC/DC	100	2000	0.16	3750	1a	p.15
LT826	AC/DC	100	4500	0.033	3750	1a	p.18
LT836	AC/DC	100	500	2	3750	1a	p.13
LT813	AC/DC	200	200	5	3750	1a	p.11
LT841	AC/DC	250	180	9	3750	1a	p.11
LT811	AC/DC	350	130	17	3750	1a	p.10
LT810	AC/DC	400	130	20	3750	1a	p.10
LT827	AC/DC	600	100	35	3750	1a	p.10
LT830	AC/DC	700	600	1	3750	1a	p.18
LT890	AC/DC	1500	45	130	3750	1a	p.18
LT891	AC/DC	1500	25	260	3750	1a	p.18
LU810	AC/DC	400	120	20	3750	**1b**	p.19
LU834	AC/DC	60	500	0.3	3750	**1b**	p.19



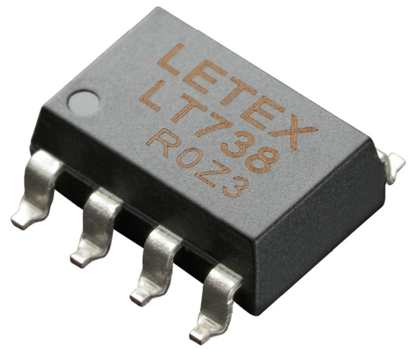


P/No.	Load	Load Voltage VL [V]	Load Current IL [mA]	On-State Resistance Ron [Ω]	I/O Isolation Voltage Viso [V]	contact type	Page
LT516	AC/DC	20	1700	0.5	3750	2a	p.15
LT518	AC/DC	40	2500	0.06	3750	2a	p.12
LT515	AC/DC	60	500	1	3750	2a	p.11
LT519	AC/DC	60	1100	0.3	3750	2a	p.12
LT533	AC/DC	60	200	2	3750	2a	p.12
LT538	AC/DC	60	500	0.8	3750	2a	p.15
LT525	AC/DC	100	1250	0.16	3750	2a	p.14
LT536	AC/DC	100	500	2	3750	2a	p.13
LT513	AC/DC	200	200	5	3750	2a	p.11
LT541	AC/DC	250	180	9	3750	2a	p.11
LT511	AC/DC	350	130	17	3750	2a	p.10
LT510	AC/DC	400	130	20	3750	2a	p.10
LT545	AC/DC	400	130	20	3750	2a	p.10
LT527	AC/DC	600	80	35	3750	2a	p.10
LU510	AC/DC	400	120	20	3750	2b	p.19
LU534	AC/DC	60	500	1	3750	2b	p.19
LTU520	AC/DC	400	120	20	3750	**1a1b**	p.20
LTU515	AC/DC	60	500	1	3750	**1a1b**	p.20

P/No.	Load	Load Voltage VL [V]	Load Current IL [mA]	On-State Resistance Ron [Ω]	I/O Isolation Voltage Viso [V]	contact type	Page
LT616	AC/DC	20	2000	0.1	3750	1a	p.15
LT618	AC/DC	40	2500	0.06	3750	1a	p.12
LT615	AC/DC	60	500	1	3750	1a	p.11
LT619	AC/DC	60	1100	0.3	3750	1a	p.12
LT633	AC/DC	60	200	2	3750	1a	p.12
LT637	AC/DC	60	3000	0.06	3750	1a	p.14
LT638	AC/DC	60	500	0.8	3750	1a	p.15
LT636	AC/DC	100	400	2	3750	1a	p.14
LT625	AC/DC	100	1250	0.16	3750	1a	p.13
LT613	AC/DC	200	200	5	3750	1a	p.11
LT611	AC/DC	350	130	17	3750	1a	p.10
LT610	AC/DC	400	120	20	3750	1a	p.10
LT627	AC/DC	600	80	35	3750	1a	p.10
LU610	AC/DC	400	120	20	3750	**1b**	p.19
LU634	AC/DC	60	500	1	3750	**1b**	p.19



P/No.	Load	Load Voltage VL [V]	Load Current IL [mA]	On-State Resistance Ron [Ω]	I/O Isolation Voltage Viso [V]	contact type	Page
LT916	AC/DC	20	2000	0.1	3750	1a	p.15
LT918	AC/DC	40	3000	0.06	3750	1a	p.12
LT924	AC/DC	40	3500	0.043	3750	1a	p.18
LT928	AC/DC	40	4500	0.033	3750	1a	p.18
LT915	AC/DC	60	500	1	3750	1a	p.11
LT919	AC/DC	60	1100	0.3	3750	1a	p.14
LT915-1	AC/DC	60	2500	0.1	3750	1a	p.14
LT933	AC/DC	60	200	2	3750	1a	p.12
LT937-1	AC/DC	60	3000	0.07	3750	1a	p.14
LT937HT	AC/DC	60	500	0.16	3750	1a	p.14
LT925	AC/DC	100	2000	0.15	3750	1a	p.15
LT926	AC/DC	100	4500	0.033	3750	1a	p.15
LT936	AC/DC	100	500	2	3750	1a	p.18
LT913	AC/DC	200	200	5	3750	1a	p.13
LT938	AC/DC	250	500	0.8	3750	1a	p.11
LT911	AC/DC	350	170	17	3750	1a	p.11
LT910	AC/DC	400	130	20	3750	1a	p.10
LT927	AC/DC	600	100	35	3750	1a	p.10
LT930	AC/DC	700	600	1	3750	1a	p.10
LT941	AC/DC	250	180	9	3750	1a	p.18
LT990	AC/DC	1500	45	130	3750	1a	p.18
LT991	AC/DC	1500	25	260	3750	1a	p.18
LU910	AC/DC	400	120	20	3750	**1b**	p.19
LU934	AC/DC	60	500	1	3750	**1b**	p.19



P/No.	Load	Load Voltage VL [V]	Load Current IL [mA]	On-State Resistance Ron [Ω]	I/O Isolation Voltage Viso [V]	contact type	Page
LT716	AC/DC	20	1700	0.3	3750	2a	p.15
LT718	AC/DC	40	2500	0.06	3750	2a	p.12
LT715	AC/DC	60	400	1	3750	2a	p.11
LT719	AC/DC	60	1100	0.3	3750	2a	p.12
LT733	AC/DC	60	200	2	3750	2a	p.12
LT738	AC/DC	60	500	0.8	3750	2a	p.15
LT725	AC/DC	100	1250	0.16	3750	2a	p.14
LT736	AC/DC	100	400	2	3750	1a	p.13
LT713	AC/DC	200	200	5	3750	2a	p.11
LT741	AC/DC	250	180	9	3750	2a	p.11
LT711	AC/DC	350	130	17	3750	2a	p.10
LT710	AC/DC	400	130	20	3750	2a	p.10
LT745	AC/DC	400	130	20	3750	2a	p.10
LT727	AC/DC	600	80	35	3750	2a	p.10
LU710	AC/DC	400	120	20	3750	**2b**	p.19
LU734	AC/DC	60	500	1	3750	**2b**	p.19
LTU720	AC/DC	400	120	20	3750	**1a1b**	p.20
LTU715	AC/DC	60	500	1	3750	**1a1b**	p.20

Photo DMOS Relay Specifications

Absolute Maximum Ratings (Ambient Temperature: 25℃)

Item		Symbol	LT227, LT327 LT427, LT627 LT527, LT727 LT827, LT927	LT210, LT310 LT410, LT610 LT510, LT710 LT810, LT910	LT211, LT311 LT411, LT611 LT511, LT711 LT811, LT911	Note
Input	Continuous LED Current	IF	50 mA			
	Peak LED Current	IFP	1000 mA			f=100Hz, duty=1%
	LED Reverse Voltage	VR	5 V			
	Input Power Dissipation	PIn	75 mW			
Output	Load Voltage	VL	600 V	400 V	350 V	(AC peak or DC)
	Load Current	IL	80 mA	100 mA	120 mA	
	Peak Load Current	IPeak	1.0 A	0.6 A	0.6 A	100ms(1 pulse)
	Output Power Dissipation	Pout	450 mW	300 mW	300 mW	
Total Power Dissipation		PT	500 mW	350 mW	350 mW	
I/O Breakdown Voltage		$V_{I/O}$	1500 ~ 5000 Vrms			RH=60%, 1min
Operating Temperature		Topr	-40°C to +85°C			
Storage Temperature		Tstg	-40°C to +100°C			
Pin Soldering Temperature		Tsol	260°C			10 sec max.

Electrical Specifications (Ambient Temperature: 25℃)

Item		Symbol		LTx27	LTx10	LTx11	Conditions
Input	LED Forward Voltage	VF	TYP.	1.2 V			IF=10mA
			MAX.	1.4 V			
	Operation LED Current	IFon	TYP.	0.5 mA			
			MAX.	3.0 mA			
	Recovery LED Current	IFoff	TYP.	0.35 mA	0.35 mA	0.35 mA	
			MAX.	0.5 mA	0.5 mA	0.5 mA	
	Recovery LED Voltage	VFoff	MIN.	0.7 V			
Output	On-Resistance	Ron	TYP.	35Ω	20Ω	17Ω	IF=5mA,IL=100mA, Within 1 sec. on time
			MAX.	50Ω	30Ω	24Ω	
	Off-State Leakage Current	ILeak	MAX.	1 uA			VL=Rating
	Output Capacitance	Cout	TYP.	115 pF	45 pF	41 pF	VL=0, f=1MHz
Transmission	Turn-On Time	Ton	TYP.	0.3 ms	0.23 ms	0.23 ms	IF=5mA, IL=100mA,
			MAX.	1.0 ms	0.5 ms	0.5 ms	
	Turn-Off Time	Toff	TYP.	0.02 ms	0.03 ms	0.05 ms	
			MAX.	0.2 ms	0.2 ms	0.2 ms	
Coupled	I/O Isolation Resistance	$R_{I/O}$	MIN.	10^9 Ω			DC500V
	I/O Capacitance	$C_{I/O}$	TYP.	0.8 pF			f=1MHz
			MAX.	1.5 pF			

Photo DMOS Relay Specifications

Absolute Maximum Ratings (Ambient Temperature: 25℃)

Item		Symbol	LT213, LT313 LT413, LT613 LT513, LT713 LT813, LT913	LT214, LT314 LT414, LT614 LT514, LT714 LT814, LT914	LT215, LT315 LT415, LT615 LT515, LT715 LT815, LT915	Note
Input	Continuous LED Current	IF	50 mA			
	Peak LED Current	IFP	1000 mA			f=100Hz, duty=1%
	LED Reverse Voltage	VR	5 V			
	Input Power Dissipation	PIn	75 mW			
Output	Load Voltage	VL	200 V	80 V	60 V	(AC peak or DC)
	Load Current	IL	180 mA	80 mA	400 mA	
	Peak Load Current	IPeak	1.0 A	0.12 A	1.0 A	100ms(1 pulse)
	Output Power Dissipation	Pout	350 mW	250 mW	450 mW	
Total Power Dissipation		PT	400 mW	300 mW	500 mW	
I/O Breakdown Voltage		$V_{I/O}$	1500 ~ 5000 Vrms			RH=60%, 1min
Operating Temperature		Topr	-40°C to +85°C			
Storage Temperature		Tstg	-40°C to +100°C			
Pin Soldering Temperature		Tsol	260°C			10 sec max.

Electrical Specifications (Ambient Temperature: 25℃)

Item		Symbol		LTx13	LTx14	LTx15	Conditions
Input	LED Forward Voltage	VF	TYP.	1.2 V			IF=10mA
			MAX.	1.4 V			
	Operation LED Current	IFon	TYP.	0.5 mA			
			MAX.	3.0 mA			
	Recovery LED Current	IFoff	TYP.	0.35 mA	0.35 mA	0.35 mA	
			MAX.	0.5 mA	0.5 mA	0.5 mA	
	Recovery LED Voltage	VFoff	MIN.	0.7 V			
Output	On-Resistance	Ron	TYP.	5Ω	35Ω	1Ω	IF=5mA,IL=100mA, Within 1 sec. on time
			MAX.	8Ω	50Ω	1.4Ω	
	Off-State Leakage Current	ILeak	MAX.	1 uA			VL=Rating
	Output Capacitance	Cout	TYP.	45 pF	6 pF	115 pF	VL=0, f=1MHz
Transmission	Turn-On Time	Ton	TYP.	0.4 ms	0.03 ms	0.5 ms	IF=5mA, IL=100mA,
			MAX.	0.05 ms	0.2 ms	0.8 ms	
	Turn-Off Time	Toff	TYP.	0.05 ms	0.05 ms	0.03 ms	
			MAX.	0.2 ms	0.2 ms	0.5 ms	
Coupled	I/O Isolation Resistance	$R_{I/O}$	MIN.	$10^9\Omega$			DC500V
	I/O Capacitance	$C_{I/O}$	TYP.	0.8 pF			f=1MHz
			MAX.	1.5 pF			

Photo DMOS Relay Specifications

Absolute Maximum Ratings (Ambient Temperature: 25℃)

Item		Symbol	LT219, LT319 LT419, LT519 LT619, LT719 LT819, LT919	LT233, LT333 LT433, LT533 LT633, LT733 LT833, LT933	LT218, LT318 LT418, LT518 LT618, LT718 LT818, LT918	Note
Input	Continuous LED Current	IF	50 mA			
	Peak LED Current	IFP	1000 mA			f=100Hz, duty=1%
	LED Reverse Voltage	VR	5 V			
	Input Power Dissipation	PIn	75 mW			
Output	Load Voltage	VL	60 V	60 V	40 V	(AC peak or DC)
	Load Current	IL	800 mA	200 mA	2500 mA	
	Peak Load Current	IPeak	4.0 A	1.0 A	5 A	100ms(1 pulse)
	Output Power Dissipation	Pout	380 mW	350 mW	400 mW	
Total Power Dissipation		PT	500 mW	400 mW	500 mW	
I/O Breakdown Voltage		$V_{I/O}$	1500 ~ 5000 Vrms			RH=60%, 1min
Operating Temperature		Topr	-40°C to +85°C			
Storage Temperature		Tstg	-40°C to +100°C			
Pin Soldering Temperature		Tsol	260°C			10 sec max.

Electrical Specifications (Ambient Temperature: 25℃)

Item		Symbol		LTx19	LTx33	LTx18	Conditions
Input	LED Forward Voltage	VF	TYP.	1.2 V			IF=10mA
			MAX.	1.4 V			
	Operation LED Current	IFon	TYP.	0.5 mA			
			MAX.	3.0 mA			
	Recovery LED Current	IFoff	TYP.	0.35 mA	0.35 mA	0.35 mA	
			MAX.	0.5 mA	0.5 mA	0.5 mA	
	Recovery LED Voltage	VFoff	MIN.	0.7 V			
Output	On-Resistance	Ron	TYP.	0.3Ω	2Ω	0.06Ω	IF=5mA,IL=100mA, Within 1 sec. on time
			MAX.	0.5Ω	5Ω	0.1Ω	
	Off-State Leakage Current	ILeak	MAX.	1 uA			VL=Rating
	Output Capacitance	Cout	TYP.	150 pF	12 pF	100 pF	VL=0, f=1MHz
Transmission	Turn-On Time	Ton	TYP.	1.0 ms	0.15 ms	0.5 ms	IF=5mA, IL=100mA,
			MAX.	1.3 ms	0.5 ms	1.0 ms	
	Turn-Off Time	Toff	TYP.	0.6 ms	0.05 ms	0.02 ms	
			MAX.	0.8 ms	0.5 ms	0.5 ms	
Coupled	I/O Isolation Resistance	$R_{I/O}$	MIN.	10^9Ω			DC500V
	I/O Capacitance	$C_{I/O}$	TYP.	0.8 pF			f=1MHz
			MAX.	1.5 pF			

Photo DMOS Relay Specifications

Absolute Maximum Ratings (Ambient Temperature: 25℃)

Item		Symbol	LT232 LT332	LT235 LT335	LT236 LT336	Note
Input	Continuous LED Current	IF	50 mA			
	Peak LED Current	IFP	1000 mA			f=100Hz, duty=1%
	LED Reverse Voltage	VR	5 V			
	Input Power Dissipation	PIn	75 mW			
Output	Load Voltage	VL	400 V	350 V	100 V	(AC peak or DC)
	Load Current	IL	250 mA	250 mA	400 mA	
	Peak Load Current	IPeak	0.8 A	0.7 A	1.0 A	100ms(1 pulse)
	Output Power Dissipation	Pout	350 mW	300 mW	450 mW	
Total Power Dissipation		PT	400 mW	350 mW	500mW	
I/O Breakdown Voltage		$V_{I/O}$	1500 ~ 5000 Vrms			RH=60%, 1min
Operating Temperature		Topr	-40°C to +85°C			
Storage Temperature		Tstg	-40°C to +100°C			
Pin Soldering Temperature		Tsol	260°C			10 sec max.

Electrical Specifications (Ambient Temperature: 25℃)

Item		Symbol		LTx32	LTx35	LTx36	Conditions
Input	LED Forward Voltage	VF	TYP.	1.2 V			IF=10mA
			MAX.	1.4 V			
	Operation LED Current	IFon	TYP.	0.5 mA			
			MAX.	3.0 mA			
	Recovery LED Current	IFoff	TYP.	0.35 mA	0.35 mA	0.35 mA	
			MAX.	0.5 mA	0.5 mA	0.5 mA	
	Recovery LED Voltage	VFoff	MIN.	0.7 V			
Output	On-Resistance	Ron	TYP.	8Ω	12Ω	2Ω	IF=5mA,IL=100mA, Within 1 sec. on time
			MAX.	15Ω	24Ω	2.5Ω	
	Off-State Leakage Current	ILeak	MAX.	1 uA			VL=Rating
	Output Capacitance	Cout	TYP.	85 pF	150 pF	22 pF	VL=0, f=1MHz
Transmission	Turn-On Time	Ton	TYP.	0.6 ms	0.6 ms	0.3 ms	IF=5mA, IL=100mA,
			MAX.	1.0 ms	1.0ms	0.6 ms	
	Turn-Off Time	Toff	TYP.	0.03 ms	0.03 ms	0.05 ms	
			MAX.	0.2 ms	0.2 ms	0.1 ms	
Coupled	I/O Isolation Resistance	$R_{I/O}$	MIN.	10^9Ω			DC500V
	I/O Capacitance	$C_{I/O}$	TYP.	0.8 pF			f=1MHz
			MAX.	1.5 pF			

Photo DMOS Relay Specifications

Absolute Maximum Ratings (Ambient Temperature: 25℃)

Item		Symbol	LT225, LT325 LT425, LT525 LT625, LT725 LT825, LT925	LT219-1,LT319-1 LT419, LT519 LT619, LT719 LT819, LT919	LT237-1,LT337-1 LT437, LT537 LT637, LT737 LT837-1,LT937-1	Note
Input	Continuous LED Current	IF	50 mA			
	Peak LED Current	IFP	1000 mA			f=100Hz, duty=1%
	LED Reverse Voltage	VR	5 V			
	Input Power Dissipation	PIn	75 mW			
Output	Load Voltage	VL	100 V	60 V	60 V	(AC peak or DC)
	Load Current	IL	1.25 A	1.3 A	2.5 A	
	Peak Load Current	IPeak	3.0 A	4.0 A	5 A	100ms(1 pulse)
	Output Power Dissipation	Pout	350 mW	380 mW	450 mW	
Total Power Dissipation		PT	400 mW	450 mW	500 mW	
I/O Breakdown Voltage		$V_{I/O}$	1500 ~ 5000 Vrms			RH=60%, 1min
Operating Temperature		Topr	-40°C to +85°C			
Storage Temperature		Tstg	-40°C to +100°C			
Pin Soldering Temperature		Tsol	260°C			10 sec max.

Electrical Specifications (Ambient Temperature: 25℃)

Item		Symbol		LTx25	LTx19-1	LTx37-1	Conditions
Input	LED Forward Voltage	VF	TYP.	1.2 V			IF=10mA
			MAX.	1.4 V			
	Operation LED Current	IFon	TYP.	0.5 mA			
			MAX.	3.0 mA			
	Recovery LED Current	IFoff	TYP.	0.35 mA	0.35 mA	0.35 mA	
			MAX.	0.5 mA	0.5 mA	0.5 mA	
	Recovery LED Voltage	VFoff	MIN.	0.7 V			
Output	On-Resistance	Ron	TYP.	0.13Ω	0.13Ω	0.06Ω	IF=5mA,IL=100mA, Within 1 sec. on time
			MAX.	0.25Ω	0.5Ω	0.1Ω	
	Off-State Leakage Current	ILeak	MAX.	1 uA			VL=Rating
	Output Capacitance	Cout	TYP.	115 pF	115 pF	150 pF	VL=0, f=1MHz
Transmission	Turn-On Time	Ton	TYP.	1.0 ms	1.0 ms	1.5 ms	IF=5mA, IL=100mA,
			MAX.	3.0 ms	1.3 ms	3.0 ms	
	Turn-Off Time	Toff	TYP.	0.06 ms	0.6 ms	0.1 ms	
			MAX.	0.3 ms	0.8 ms	0.3 ms	
Coupled	I/O Isolation Resistance	$R_{I/O}$	MIN.	10^9Ω			DC500V
	I/O Capacitance	$C_{I/O}$	TYP.	0.8 pF			f=1MHz
			MAX.	1.5 pF			

Photo DMOS Relay Specifications

Absolute Maximum Ratings (Ambient Temperature: 25℃)

Item		Symbol	LT238, LT338 LT438, LT538 LT638, LT738 LT838, LT938	LT239, LT339 LT439, LT539 LT639, LT739 LT839, LT939	LT216, LT316 LT416, LT516 LT616, LT716 LT816, LT916	Note
Input	Continuous LED Current	IF	50 mA			
	Peak LED Current	IFP	1000 mA			f=100Hz, duty=1%
	LED Reverse Voltage	VR	5 V			
	Input Power Dissipation	PIn	75 mW			
Output	Load Voltage	VL	60 V	60 V	20 V	(AC peak or DC)
	Load Current	IL	500 mA	500 mA	1.7 A	
	Peak Load Current	IPeak	1.0 A	1.5 A	3.5 A	100ms(1 pulse)
	Output Power Dissipation	Pout	300 mW	450 mW	400 W	
Total Power Dissipation		PT	350 mW	500 mW	450 W	
I/O Breakdown Voltage		$V_{I/O}$	1500 Vrms			RH=60%, 1min
Operating Temperature		Topr	-40°C to +85°C			
Storage Temperature		Tstg	-40°C to +100°C			
Pin Soldering Temperature		Tsol	260°C			10 sec max.

Electrical Specifications (Ambient Temperature: 25℃)

Item		Symbol		LTx38	LTx39	LTx16	Conditions
Input	LED Forward Voltage	VF	TYP.	1.2 V			IF=10mA
			MAX.	1.4 V			
	Operation LED Current	IFon	TYP.	0.5 mA	0.8 mA	0.5 mA	
			MAX.	2.0 mA	2.0 mA	3.0 mA	
	Recovery LED Current	IFoff	TYP.	0.35 mA			
			MAX.	0.5 mA			
	Recovery LED Voltage	VFoff	MIN.	0.7 V			
Output	On-Resistance	Ron	TYP.	0.8Ω	0.8Ω	0.5Ω	IF=5mA,IL=100mA, Within 1 sec. on time
			MAX.	1.5Ω	1.6Ω	1.2Ω	
	Off-State Leakage Current	ILeak	MAX.	1 uA			VL=Rating
	Output Capacitance	Cout	TYP.	28 pF	28 pF	500 pF	VL=0, f=1MHz
Transmission	Turn-On Time	Ton	TYP.	0.25 ms	0.35 ms	1.5 ms	IF=5mA, IL=100mA,
			MAX.	0.35 ms	0.5 ms	3.0 ms	
	Turn-Off Time	Toff	TYP.	0.02 ms	0.1 ms	0.05 ms	
			MAX.	0.05 ms	0.3 ms	0.1 ms	
Coupled	I/O Isolation Resistance	$R_{I/O}$	MIN.	$10^9\Omega$			DC500V
	I/O Capacitance	$C_{I/O}$	TYP.	0.8 pF			f=1MHz
			MAX.	1.5 pF			

Photo DMOS Relay Specifications

Absolute Maximum Ratings (Ambient Temperature: 25℃)

Item		Symbol	LT218D LT318D	LT216D LT316D	Note
Input	Continuous LED Current	IF	50 mA		
	Peak LED Current	IFP	1000 mA		f=100Hz, duty=1%
	LED Reverse Voltage	VR	5 V		
	Input Power Dissipation	PIn	75 mW		
Output	Load Voltage	VL	40 V	20 V	(AC peak or DC)
	Load Current	IL	3.5 A	5 A	
	Peak Load Current	IPeak	5 A	35 A	100ms(1 pulse)
	Output Power Dissipation	Pout	400 mW	1.8 W	
Total Power Dissipation		PT	600 mW	2 W	
I/O Breakdown Voltage		$V_{I/O}$	1500 Vrms		RH=60%, 1min
Operating Temperature		Topr	-40°C to +85°C		
Storage Temperature		Tstg	-40°C to +100°C		
Pin Soldering Temperature		Tsol	260°C		10 sec max.

Electrical Specifications (Ambient Temperature: 25℃)

Item		Symbol		LTx18D	LTx16D	Conditions
Input	LED Forward Voltage	VF	TYP.	1.2 V		IF=10mA
			MAX.	1.4 V		
	Operation LED Current	IFon	TYP.	0.5 mA		
			MAX.	2.0 mA		
	Recovery LED Current	IFoff	TYP.	0.35 mA	0.35 mA	
			MAX.	0.5 mA	0.5 mA	
	Recovery LED Voltage	VFoff	MIN.	0.5 V		
Output	On-Resistance	Ron	TYP.	0.05Ω	0.2Ω	IF=5mA,IL=100mA, Within 1 sec. on time
			MAX.	0.08Ω	0.5Ω	
	Off-State Leakage Current	ILeak	MAX.	1 uA		VL=Rating
	Output Capacitance	Cout	TYP.	240 pF	500 pF	VL=0, f=1MHz
Transmission	Turn-On Time	Ton	TYP.	0.4 ms	0.5 ms	IF=5mA, IL=100mA,
			MAX.	0.8 ms	1.5 ms	
	Turn-Off Time	Toff	TYP.	0.03 ms	0.03 ms	
			MAX.	0.05 ms	0.1 ms	
Coupled	I/O Isolation Resistance	$R_{I/O}$	MIN.	10^9Ω		DC500V
	I/O Capacitance	$C_{I/O}$	TYP.	0.8 pF		f=1MHz
			MAX.	1.5 pF		

Photo DMOS Relay Specifications

Absolute Maximum Ratings (Ambient Temperature: 25℃)

Item		Symbol	LT221RS LT321RS	LT222RS LT322RS	LT223RS LT323RS	Note
Input	Continuous LED Current	IF	50 mA			
	Peak LED Current	IFP	1000 mA			f=100Hz, duty=1%
	LED Reverse Voltage	VR	5 V			
	Input Power Dissipation	PIn	75 mW			
Output	Load Voltage	VL	40 V	80 V	60 V	(AC peak or DC)
	Load Current	IL	200 mA	80 mA	120 mA	
	Peak Load Current	IPeak	0.6 A	0.3 A	0.6 A	100ms(1 pulse)
	Output Power Dissipation	Pout	250 mW	250 mW	300 W	
Total Power Dissipation		PT	300 mW	300 mW	350 W	
I/O Breakdown Voltage		$V_{I/O}$	1500 Vrms			RH=60%, 1min
Operating Temperature		Topr	-40°C to +85°C			
Storage Temperature		Tstg	-40°C to +100°C			
Pin Soldering Temperature		Tsol	260°C			10 sec max.

Electrical Specifications (Ambient Temperature: 25℃)

Item		Symbol		LTx21RS	LTx22RS	LTx23RS	Conditions
Input	LED Forward Voltage	VF	TYP.	1.2 V			IF=10mA
			MAX.	1.4 V			
	Operation LED Current	IFon	TYP.	0.5 mA	0.8 mA	0.5 mA	
			MAX.	2.0 mA	2.0 mA	3.0 mA	
	Recovery LED Current	IFoff	TYP.	0.35 mA			
			MAX.	0.5 mA			
	Recovery LED Voltage	VFoff	MIN.	0.7 V			
Output	On-Resistance	Ron	TYP.	1.5Ω	20Ω	4.5Ω	IF=5mA,IL=100mA, Within 1 sec. on time
			MAX.	2.0Ω	30Ω	6.0Ω	
	Off-State Leakage Current	ILeak	MAX.	1 uA			VL=Rating
	Output Capacitance	Cout	TYP.	5 pF	6 pF	5 pF	VL=0, f=1MHz
Transmission	Turn-On Time	Ton	TYP.	0.03 ms	0.03 ms	0.05 ms	IF=5mA, IL=100mA,
			MAX.	0.1 ms	0.1 ms	0.1 ms	
	Turn-Off Time	Toff	TYP.	0.1 ms	0.03 ms	0.03 ms	
			MAX.	0.3 ms	0.2 ms	0.1 ms	
Coupled	I/O Isolation Resistance	$R_{I/O}$	MIN.	$10^{9}\Omega$			DC500V
	I/O Capacitance	$C_{I/O}$	TYP.	0.8 pF			f=1MHz
			MAX.	1.5 pF			

Photo DMOS Relay Specifications

Absolute Maximum Ratings (Ambient Temperature: 25℃)

Item		Symbol	LT824, LT924 LT828, LT928	LT826, LT926 LT830, LT930	LT890, LT990 LT891, LT991	Note
Input	Continuous LED Current	IF	50 mA			
	Peak LED Current	IFP	1000 mA			f=100Hz, duty=1%
	LED Reverse Voltage	VR	5 V			
	Input Power Dissipation	PIn	75 mW			
Output	Load Voltage	VL	40 V	20 V 100 V	1500 V	(AC peak or DC)
	Load Current	IL	3500 mA 4500 mA	4500 mA 6000 mA	45 mA 25 mA	
	Peak Load Current	IPeak	8.5 A 9.5A	9.5A 1.2A	180 mA 100 mA	100ms(1 pulse)
	Output Power Dissipation	Pout	500 mW	500 mW	360 mW	
Total Power Dissipation		PT	550 mW	550 mW	410 mW	
I/O Breakdown Voltage		$V_{I/O}$	3750 Vrms			RH=60%, 1min
Operating Temperature		Topr	-40°C to +85°C			
Storage Temperature		Tstg	-40°C to +100°C			
Pin Soldering Temperature		Tsol	260°C			10 sec max.

Electrical Specifications (Ambient Temperature: 25℃)

Item		Symbol		LTx24 LTx28	LTx26 LTx30	LTx90 LTx91	Conditions
Input	LED Forward Voltage	VF	TYP.	1.2 V			IF=10mA
			MAX.	1.5 V			
	Operation LED Current	IFon	TYP.	1.0 mA	1.0 mA	0.8 mA	
			MAX.	3.0 mA	5.0 mA	5.0 mA	
	Recovery LED Current	IFoff	TYP.	0.35 mA			
			MAX.	0.5 mA			
	Recovery LED Voltage	VFoff	MIN.	0.7 V			
Output	On-Resistance	Ron	TYP.	0.043Ω 0.033Ω	0.043Ω 0.033Ω	130Ω 260Ω	IF=5mA,IL=100mA, Within 1 sec. on time
			MAX.	0.07Ω 0.05Ω	0.07Ω 0.05Ω	200Ω 290Ω	
	Off-State Leakage Current	ILeak	MAX.	1 uA			VL=Rating
	Output Capacitance	Cout	TYP.	690 pF	1000 pF 1900 pF	58 pF 35 pF	VL=0, f=1MHz
Transmission	Turn-On Time	Ton	TYP.	1.5 ms	1.5 ms	0.1 ms	IF=5mA, IL=100mA,
			MAX.	5.0 ms	2.5 ms	0.5 ms	
	Turn-Off Time	Toff	TYP.	0.05 ms	0.03 ms	0.03 ms	
			MAX.	2.0 ms	0.2 ms	0.2 ms	
Coupled	I/O Isolation Resistance	$R_{I/O}$	MIN.	10^{9}Ω			DC500V
	I/O Capacitance	$C_{I/O}$	TYP.	0.8 pF			f=1MHz
			MAX.	1.5 pF			

Photo DMOS Relay Specifications

Absolute Maximum Ratings (Ambient Temperature: 25℃)

Item		Symbol	LU210, LU310 LU410, LU610 LU510, LU710 LU810, LU910	LU234, LU334 LU434, LU634 LU534, LU727 LU834, LU934	Note
Input	Continuous LED Current	IF	50 mA		
	Peak LED Current	IFP	1000 mA		f=100Hz, duty=1%
	LED Reverse Voltage	VR	5 V		
	Input Power Dissipation	PIn	75 mW		
Output	Load Voltage	VL	400 V	60 V	(AC peak or DC)
	Load Current	IL	120 mA	500 mA	
	Peak Load Current	IPeak	0.3 A	0.6 A	100ms(1 pulse)
	Output Power Dissipation	Pout	500 mW	300 mW	
Total Power Dissipation		PT	550 mW	350 mW	
I/O Breakdown Voltage		VI/O	1500 ~ 5000 Vrms		RH=60%, 1min
Operating Temperature		Topr	-40°C to +85°C		
Storage Temperature		Tstg	-40°C to +100°C		
Pin Soldering Temperature		Tsol	260°C		10 sec max.

Electrical Specifications (Ambient Temperature: 25℃)

Item		Symbol		LUx10	LUx34	Conditions
Input	LED Forward Voltage	VF	TYP.	1.2 V		IF=10mA
			MAX.	1.4 V		
	Operation LED Current	IFon	TYP.	0.5 mA		
			MAX.	3.0 mA		
	Recovery LED Current	IFoff	TYP.	0.35 mA	0.4 mA	
			MIN.	0.1 mA	0.1 mA	
	Recovery LED Voltage	VFoff	MIN.	0.7 V		
Output	On-Resistance	Ron	TYP.	20Ω	0.8Ω	IF=5mA,IL=100mA, Within 1 sec. on time
			MAX.	50Ω	1.5Ω	
	Off-State Leakage Current	ILeak	MAX.	1 uA		VL=Rating
	Output Capacitance	Cout	TYP.	165 pF	165 pF	VL=0, f=1MHz
Transmission	Turn-On Time	Ton	TYP.	0.02 ms	0.5 ms	IF=5mA, IL=100mA,
			MAX.	1.0 ms	1.0 ms	
	Turn-Off Time	Toff	TYP.	0.5 ms	0.25 ms	
			MAX.	3.0 ms	2.0 ms	
Coupled	I/O Isolation Resistance	RI/O	MIN.	$10^9\Omega$		DC500V
	I/O Capacitance	CI/O	TYP.	0.8 pF		f=1MHz
			MAX.	1.5 pF		

Photo DMOS Relay Specifications

Absolute Maximum Ratings (Ambient Temperature: 25℃)

Item		Symbol	LTU320 LTU520 LTU720	LTU315 LTU515 LTU715	Note
Input	Continuous LED Current	IF	50 mA		
	Peak LED Current	IFP	1000 mA		f=100Hz, duty=1%
	LED Reverse Voltage	VR	5 V		
	Input Power Dissipation	PIn	75 mW		
Output	Load Voltage	VL	400 V	60 V	(AC peak or DC)
	Load Current	IL	120 mA	400 mA	
	Peak Load Current	IPeak	0.6 A	1.0 A	100ms(1 pulse)
	Output Power Dissipation	Pout	450 mW	450 mW	
Total Power Dissipation		PT	500 mW	500 mW	
I/O Breakdown Voltage		$V_{I/O}$	1500 ~ 5000 Vrms		RH=60%, 1min
Operating Temperature		Topr	-40°C to +85°C		
Storage Temperature		Tstg	-40°C to +100°C		
Pin Soldering Temperature		Tsol	260°C		10 sec max.

Electrical Specifications (Ambient Temperature: 25℃)

Item		Symbol		LTUx20	LTUx15	Conditions
Input	LED Forward Voltage	VF	TYP.	1.2 V		IF=10mA
			MAX.	1.4 V		
	Operation LED Current	IFon	TYP.	0.5 mA		
			MAX.	3.0 mA		
	Recovery LED Current	IFoff	TYP.	0.35 mA		
			MAX.	0.5 mA		
	Recovery LED Voltage	VFoff	MIN.	0.7 V		
Output	On-Resistance	Ron	TYP.	20Ω	1Ω(N.O), 1Ω(N.C)	IF=5mA,IL=100mA, Within 1 sec. on time
			MAX.	50Ω	1.4Ω(N.O), 3Ω(N.C)	
	Off-State Leakage Current	ILeak	MAX.	1 uA		VL=Rating
	Output Capacitance	Cout	TYP.	165 pF	165 pF	VL=0, f=1MHz
Transmission	Turn-On Time	Ton	TYP.	0.23 ms(N.O.) 0.02 ms(N.C.)	0.23 ms(N.O.) 0.02 ms(N.C.)	IF=5mA, IL=100mA,
			MAX.	0.5 ms(N.O.) 1.0 ms(N.C.)	0.5 ms(N.O.) 1.0 ms(N.C.)	
	Turn-Off Time	Toff	TYP.	0.03 ms(N.O.) 0.5 ms(N.C.)	0.03 ms(N.O.) 0.5 ms(N.C.)	
			MAX.	0.2 ms(N.O.) 3.0 ms(N.C.)	0.2 ms(N.O.) 3.0 ms(N.C.)	
Coupled	I/O Isolation Resistance	$R_{I/O}$	MIN.	$10^9 \Omega$		DC500V
	I/O Capacitance	$C_{I/O}$	TYP.	0.8 pF		f=1MHz
			MAX.	1.5 pF		

Photo DMOS Relay - Short Circuit Protection

Features

- **SOP package in miniature design**
  - 4 pin 4.4×4.30×2.0 [.173×.169×.083]
  - 8 pin 4.4×9.40×2.0 [.173×.370×.083]
- **Short circuit protection (Latch type)**
- **High-speed switching**
- **Tape & Reel version available**

Applications

- **Telecommunications (PC, Electronic notepad)**
- **Measuring and Testing equipment**
- **Industrial control**
- **Security equipments**
- **High speed inspection machine**

Outline Dimensions

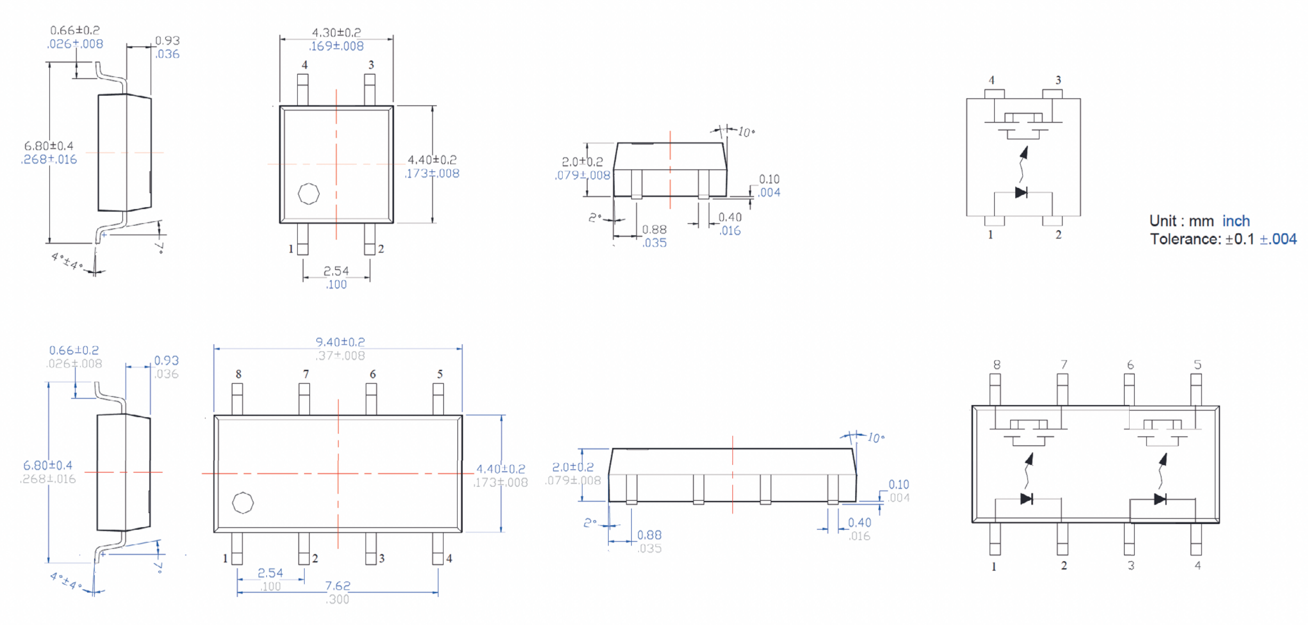


Photo DMOS Relay Short Circuit Specifications

Absolute Maximum Ratings (Ambient Temperature: 25℃)

Item		LT211SC LT311SC			Note
		Symbol	Value	Units	
Input	Continuous LED Current	IF	50	mA	
	Peak LED Current	IFP	1000	mA	f=100Hz, duty=1%
	LED Reverse Voltage	VR	5	V	
	Input Power Dissipation	PIn	75	mW	
Output	Load Voltage	VL	350	V (AC peak or DC)	(AC peak or DC)
	Load Current	IL	120	mA	
	Peak Load Current	IPeak	0.6	A	100ms (1 pulse)
	Output Power Dissipation	Pout	300	mW	
Total Power Dissipation		PT	350	mW	
I/O Breakdown Voltage		$V_{I/O}$	1500	Vrms	RH=60%, 1min
Operating Temperature		Topr	-40 to +85	℃	
Storage Temperature		Tstg	-40 to +100	℃	
Pin Soldering Temperature		Tsol	260	℃	10 sec max.

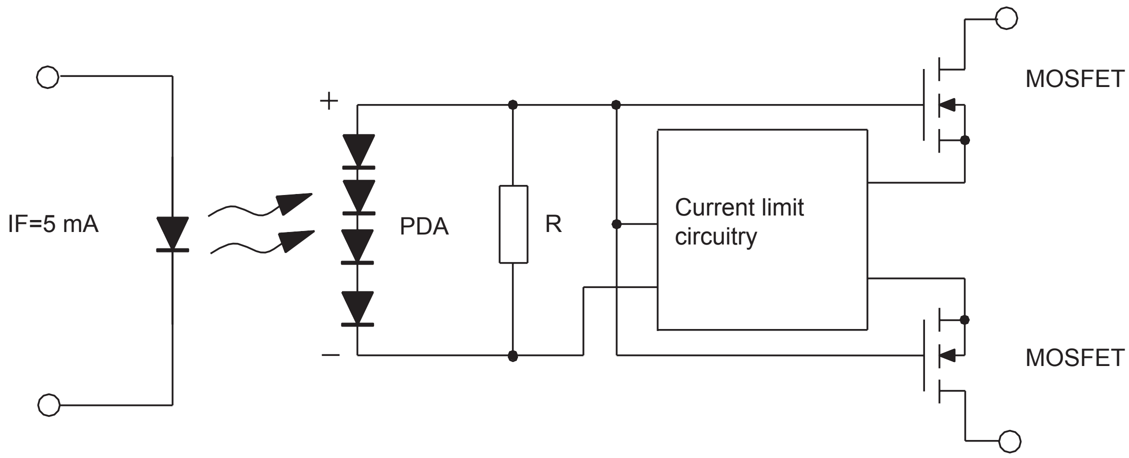
Electrical Specifications (Ambient Temperature: 25℃)

Item		Symbol	MIN.	TYP.	MAX.	Units	Conditions
Input	LED Forward Voltage	VF		1.2	1.4	V	IF=10mA
	Operation LED Current	IFon		0.5	1.0	mA	
	Recovery LED Current	IFoff		0.35	0.5	mA	
	Recovery LED Voltage	VFoff	0.7			V	
Output	On-Resistance	Ron		17	24	Ω	IF=5mA,IL=100mA, Time to flow is within 1 sec.
	Off-State Leakage Current	ILeak			1	uA	VL=Rating
	Output Capacitance	Cout		41		pF	VL=0, f=1MHz
	Over current protection						
	Cut off current	Ishut	200	280	300	mA	IF = 5 mA Within 20ms on time
	Detection time	Tshut		50		us	IF = 5 mAVL = 350 VDC short circuit
Transmission	Turn-On Time	Ton		0.23	0.5	ms	IF=5mA, IL=100mA,
	Turn-Off Time	Toff		0.05	0.2	ms	
Coupled	I/O Isolation Resistance	$R_{I/O}$	10^{10}			Ω	DC500V
	I/O Capacitance	$C_{I/O}$		0.8	1.5	pF	f=1MHz

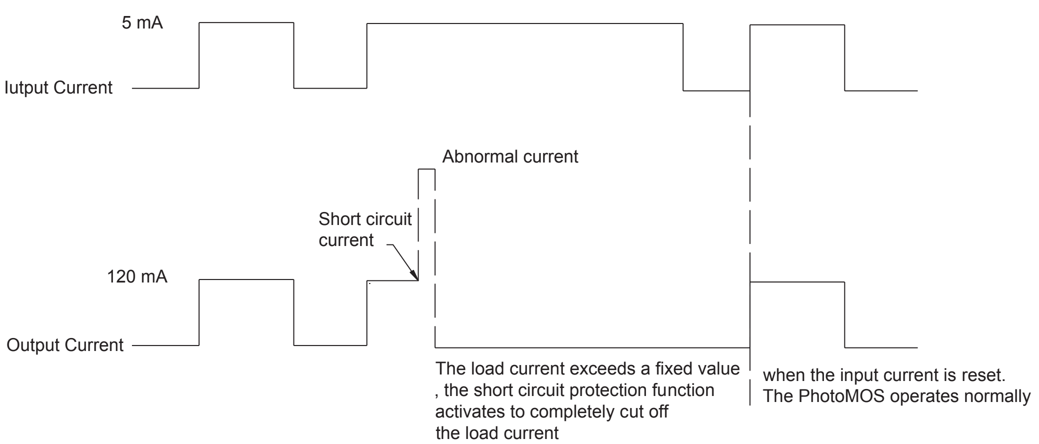
Relay Protection

The Photo DMOS Relay is equipped with a built-in active current limiting circuit for short-circuit protection. When the output current exceeds the rated value, it will instantaneously (typically 50 us) completely cut off the load current and maintain it in the off state. This not only protects the Relay itself but also safeguards the output circuit from the effects of faults. Subsequently, you can turn off the input current to restore the Relay to its normal operational state.

Current Limit Schematic



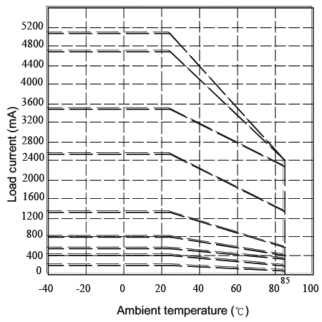
Action flow chart



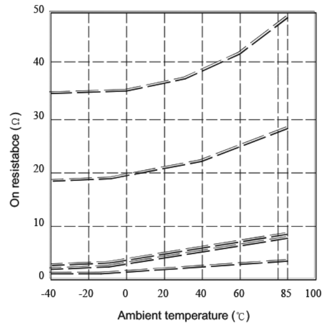
●RECOMMENDED OPERATING CONDITIONS			
Please following conditions to ensure proper device operation and resetting.			
Item	Symbol	Recommended value	Unit
Input LED current	IF	5~10	mA

Reference Data

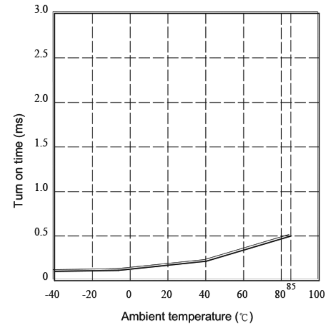
Load current Vs.
Ambient temperature



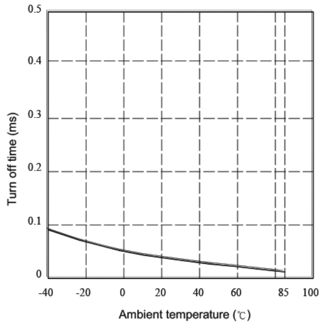
On resistance Vs.
Ambient temperature



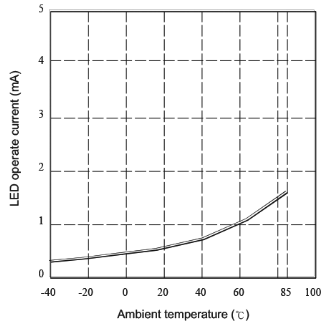
Turn on time Vs.
Ambient temperature



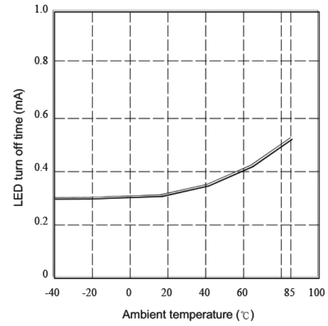
Turn off time Vs.
Ambient temperature



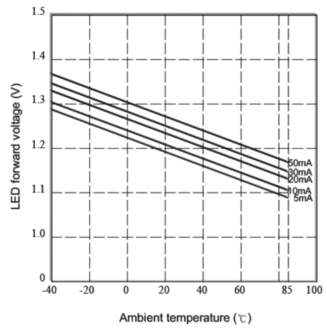
LED operate current Vs.
Ambient temperature



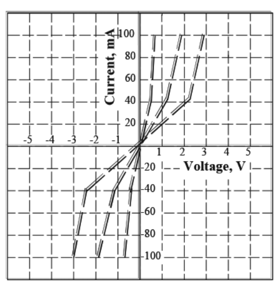
LED turn off current Vs.
Ambient temperature



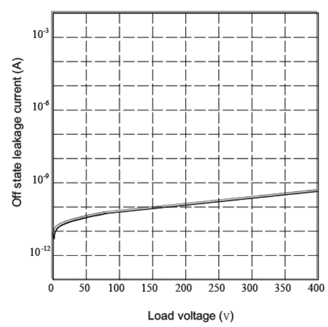
LED forward voltage Vs.
Ambient temperature



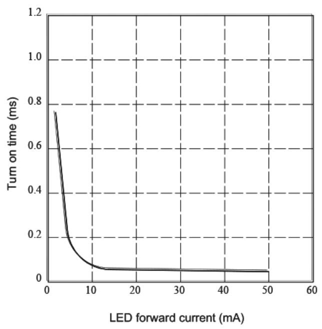
Voltage Vs. currennt characteristics
of output at MOS portion



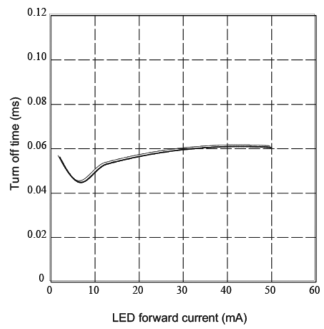
Off state leakage current Vs.
Load voltage characteristics



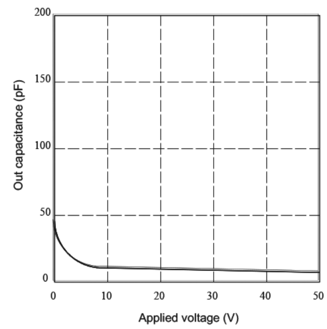
LED foward current Vs.
turn on time characteristics



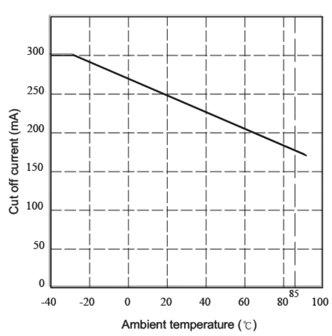
LED foward current Vs.
turn off time characteristics



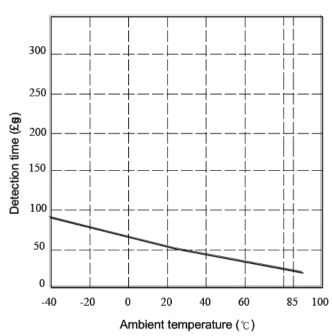
Applied voltage Vs.
output capacitance characteristics



Cut off current Vs.
Ambient temperature

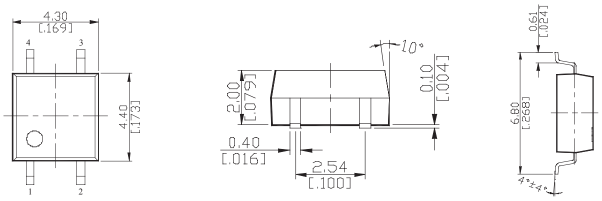
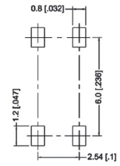
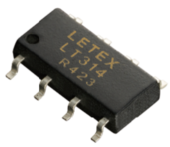


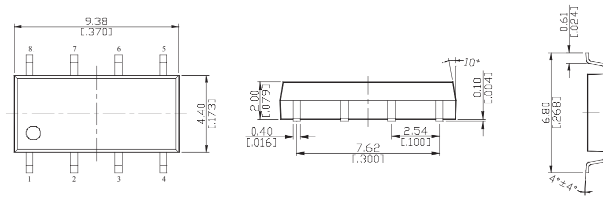
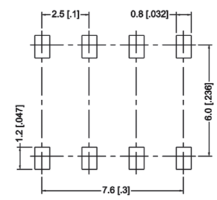
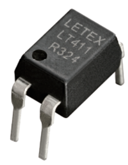
Detection time Vs.
Ambient temperature

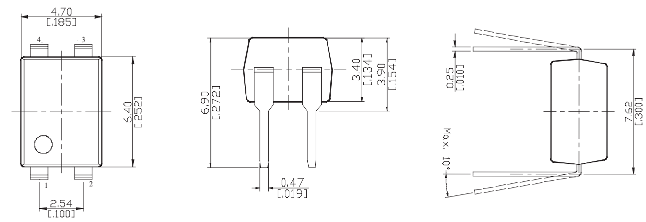
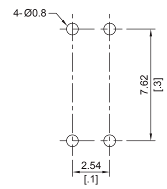


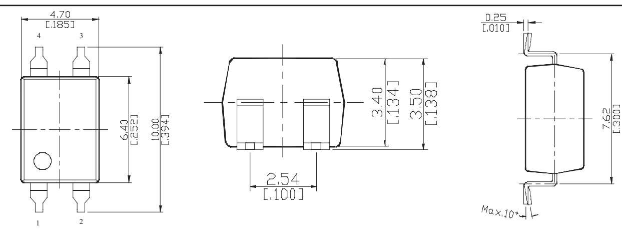
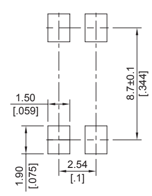
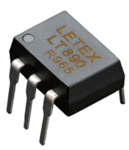
Outline Dimensions & PCB Layout

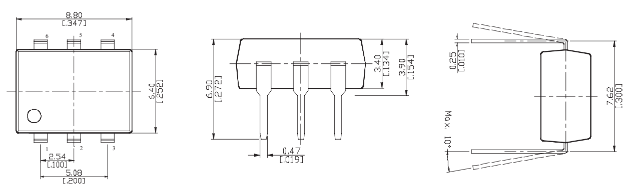
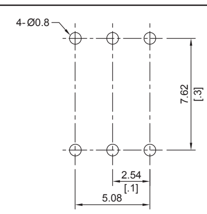
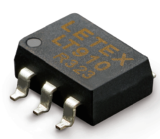
<table>
<tr><th>Package</th><th>Dimensions</th><th>PCB Layout</th></tr>
<tr><td>

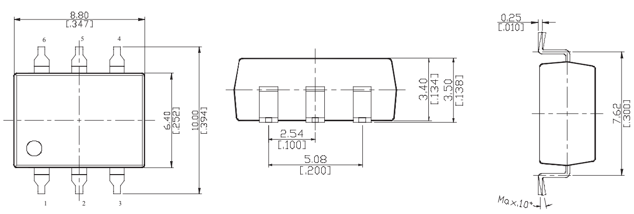
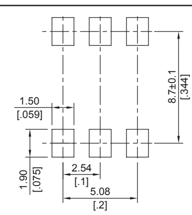
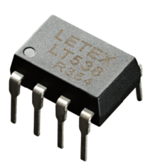
SOP4</td><td>
</td><td>
</td></tr>
<tr><td>

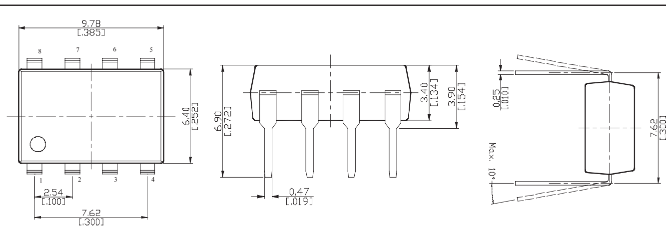
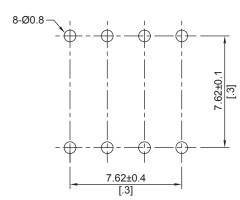
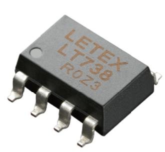
SOP8</td><td>
</td><td>
</td></tr>
<tr><td>

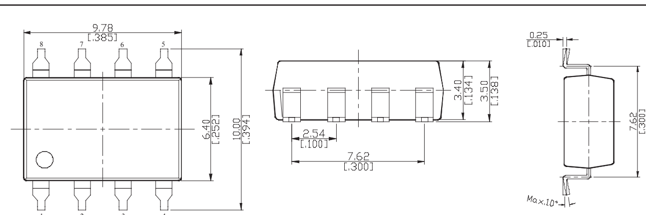
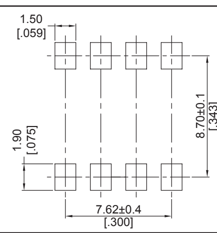
DIP4</td><td>
</td><td>
</td></tr>
<tr><td>

SMD4</td><td>
</td><td>
</td></tr>
<tr><td>

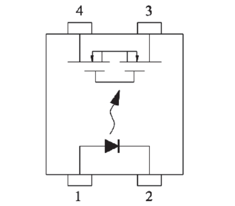
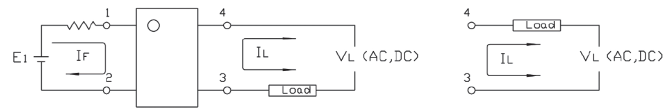
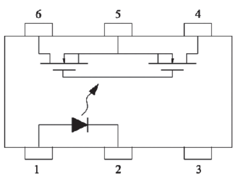
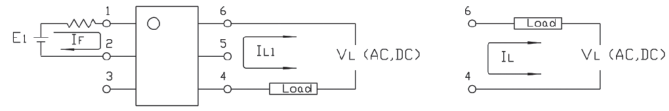
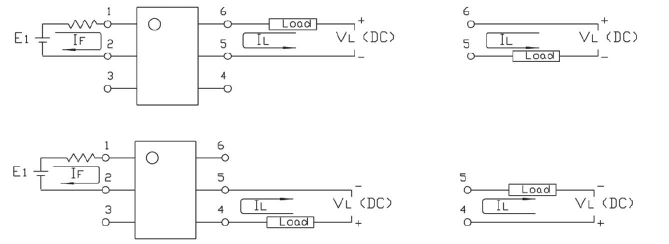
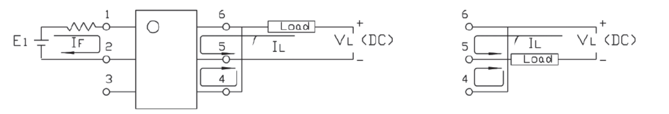
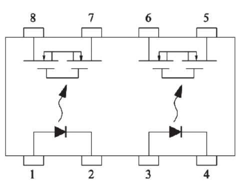
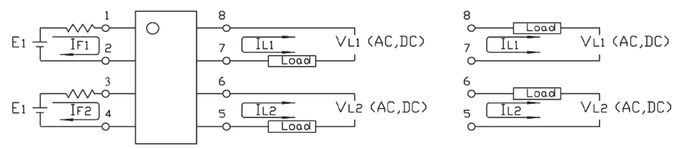
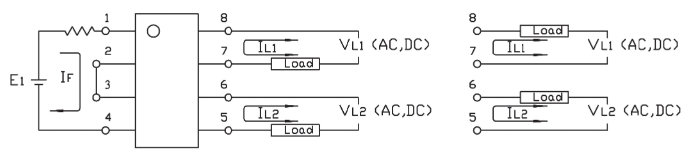
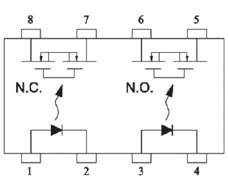
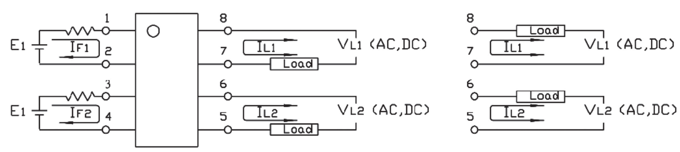
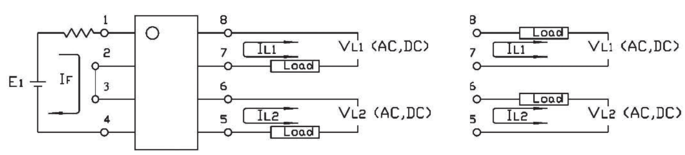
DIP6</td><td>
</td><td>
</td></tr>
<tr><td>

SMD6</td><td>
</td><td>
</td></tr>
<tr><td>

DIP8</td><td>
</td><td>
</td></tr>
<tr><td>

SMD8</td><td>
</td><td>
</td></tr>
</table>

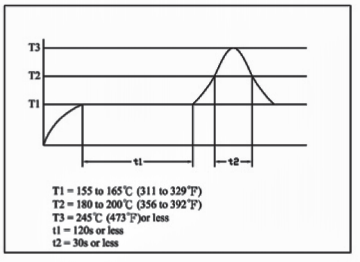
Schematic and Wiring Diagram

Type	Contact form	Load		Wiring diagram
	1a (1b)	AC/DC		
	1a (1b)	A	AC/DC	
		B	DC	
		C	DC	
	2a (2b)	AC/DC		(1) Two independent 1 Form A use  (2) 2 Form A use 
	1a1b	AC/DC		(1) Two independent 1 Form A & 1 Form B use  (2) 1 Form A 1formB use 

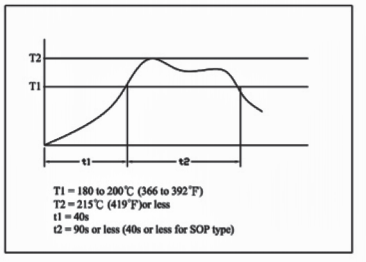
Notes: 1. E1: Power source at input side, IF: LED forward current, VL: Load voltage, IL: Load current, R: Current limit resistor.
2. Method connecting the load at the output are divided into 3 types

Soldering

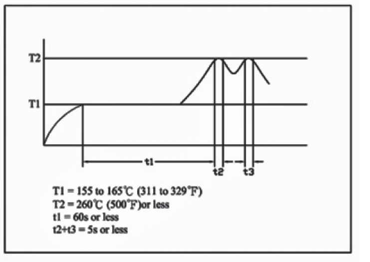
(1)IR(infrared reflow)soldering method



(2)Vapor phase soldering method



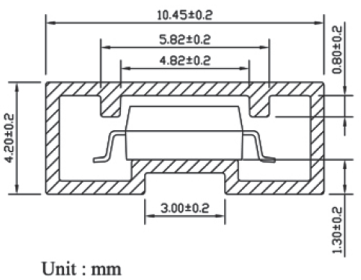
(3)Double wave soldering method



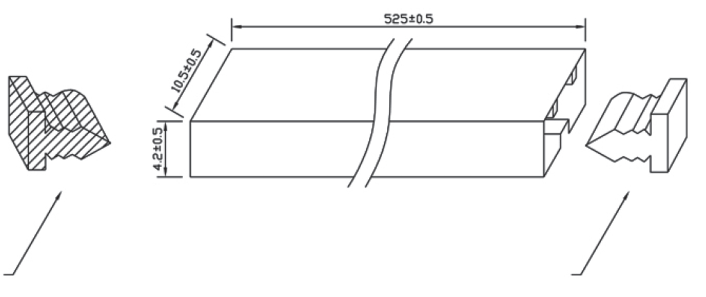
Notes:
1. When soldering PC board terminals, keep soldering time to within 10 s at 260℃ (500 °F)
2. When soldering surface-mount terminals, the following conditions are recommended.
3. Soldering iron method
Tip temperature: 280 to 300℃ (536 to 572 °F)
Wattage: 30 to 60 W
Soldering time: within 5 s

Taping Specifications for Surface Mount Devices

Tube **Pin 1 is on the stopper B (green) side**



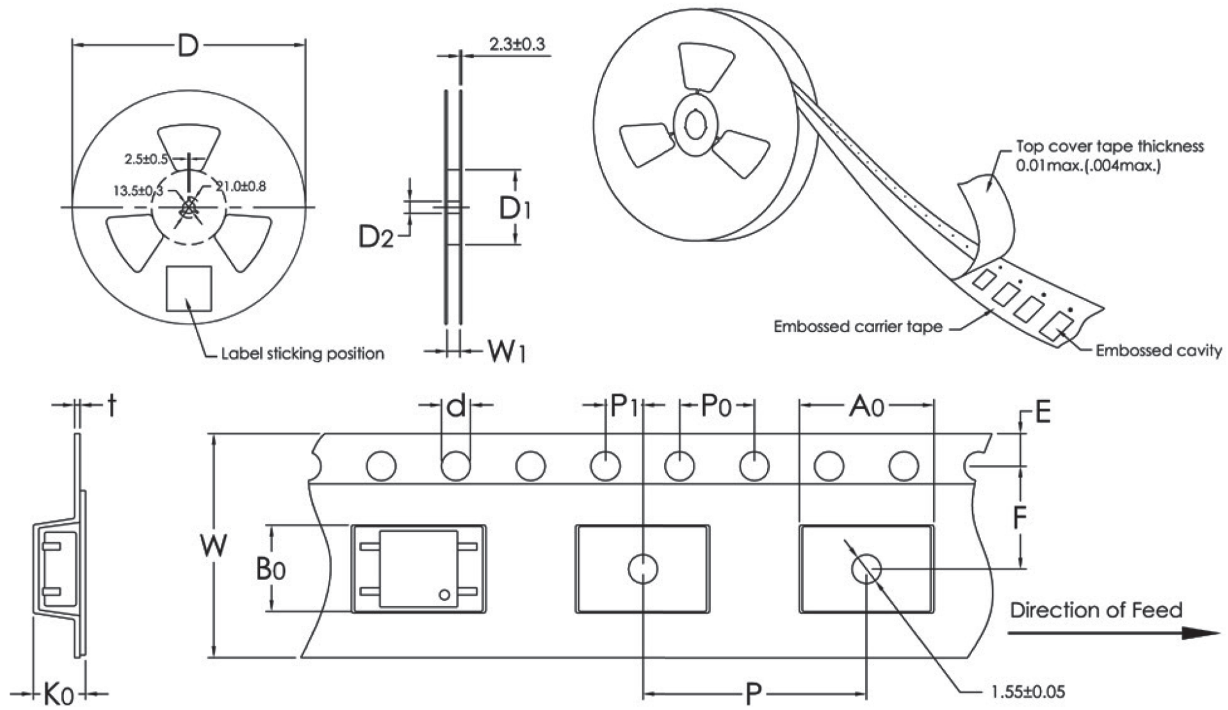
Unit : mm



Package Type	Quantity
SOP 4 pin	100 pcs
SOP 8 pin	50 pcs
DIP4 pin/ SMD4pin	100 pcs
DIP6 pin/ SMD6pin	50 pcs
DIP8 pin/ SMD8pin	45 pcs

Taping Specifications for Surface Mount Devices

Tape and Reel



Product	SOP-4pin		SOP-8pin		SMD-4pin		SMD-6pin		SMD-8pin	
Packaging	2000pcs / Reel		1000pcs / Reel		1000pcs / Reel		1000pcs / Reel		1000pcs / Reel	
Symbol	mm	INCH	mm	INCH	mm	INCH	mm	INCH	mm	INCH
Tape Size	12.0	.472	16.0	.630	16.0	.630	16.0	.630	24.0	.944
A0	7.20±0.10	.283±.004	7.20±0.10	.283±.004	10.6±0.10	.417±.004	10.6±0.10	.417±.004	10.6±0.10	.417±.004
B0	4.80±0.10	.189±.004	9.80±0.10	.386±.004	5.30±0.10	.208±.004	9.40±0.10	.37±.004	10.3±0.10	.405±.004
d	1.55±0.05	.061±.002	1.55±0.05	.061±.002	1.55±0.05	.061±.002	1.55±0.05	.061±.002	1.55±0.05	.061±.002
D	330.0±2.0	13.0±.079	330.0±2.0	13.0±.079	330.0±2.0	13.0±.079	330.0±2.0	13.0±.079	330.0±2.0	13.0±.079
D1	99.5±1.0	3.92±.039	99.5±1.0	3.92±.039	99.5±1.0	3.92±.039	99.5±1.0	3.92±.039	99.5±1.0	3.92±.039
D2	13.5±0.30	.531±.012	13.5±0.30	.531±.012	13.5±0.30	.531±.012	13.5±0.30	.531±.012	13.5±0.30	.531±.012
E	1.75±0.05	.069±.002	1.75±0.05	.069±.002	1.75±0.05	.069±.002	1.75±0.05	.069±.002	1.75±0.05	.069±.002
F	5.50±0.05	.217±.002	7.50±0.10	.295±.004	7.50±0.10	.295±.004	7.50±0.10	.295±.004	11.5±0.10	.452±.004
K0	2.80±0.30	.110±.012	2.80±0.30	.110±.012	4.70±0.30	.185±.012	4.70±0.30	.185±.012	4.70±0.30	.185±.012
P	12.00±0.10	.472±.004	12.00±0.10	.472±.004	16.0±0.10	.629±.004	16.0±0.10	.629±.004	16.0±0.10	.629±.004
P0	4.00±0.10	.157±.004	4.00±0.10	.157±.004	4.00±0.10	.157±.004	4.00±0.10	.157±.004	4.00±0.10	.157±.004
P1	2.00±0.05	.079±.002	2.00±0.05	.079±.002	2.00±0.05	.079±.002	2.00±0.05	.079±.002	2.00±0.05	.079±.002
t	0.30±0.05	.012±.002	0.30±0.05	.012±.002	0.30±0.05	.012±.002	0.30±0.05	.012±.002	0.30±0.05	.012±.002
W	12.0±0.30	.472±.012	16.0±0.30	.630±.012	16.0±0.30	.630±.012	16.0±0.30	.630±.012	24.0±0.10	.944±.004
W1	13.5±0.50	.531±..020	17.5±0.50	.689±.020	17.5±0.50	.689±.020	17.5±0.50	.689±.020	17.5±0.50	. 689±.020

Notes:
1. There shall be 400 mm of leader minimum which may consist of carrier and cover tape follower.
2. Devices are pockets in accordance with IEC standard IEC286-3 (JIS C 0806) and specifications given above.

2 Photovoltaic MOSFET Driver
光電 MOSFET 驅動器

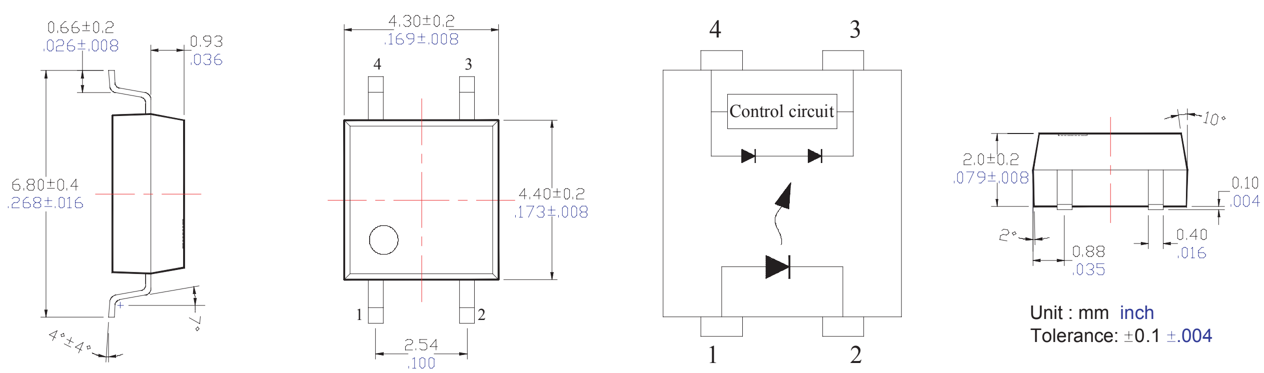
Features

- High-speed switching
- 2500Vrms Input/Output isolation
- Tape & Reel version available

Applications

- MOSFET driver
- Power supply (Vcc) for electronic circuits

Outline Dimensions



Photovaltaic MOSFET Driver Specifications

Electrical Specifications (Ambient Temperature: 25℃)

Item		Symbol	LTP-1G2	LTP-1G3	LTP-1G4	Note
Input	Continuous LED Current	IF	50 mA			
	Peak LED Current	IFP	1000 mA			f=100Hz, duty=1%
	LED Reverse Voltage	VR	5 V			
	Input Power Dissipation	PIn	75 mW			
I/O Breakdown Voltage		$V_{I/O}$	2500 Vrms			RH=60%, 1min
Operating Temperature		Topr	-40°C to +85°C			
Storage Temperature		Tstg	-40°C to +100°C			

Electrical Specifications (Ambient Temperature: 25℃)

Item		Symbol		LTP-1G2	LTP-1G3	LTP-1G4	Conditions
Input	LED Forward Voltage	VF	TYP.	1.2 V			IF=10mA
			MAX.	1.4 V			
	Operation LED Current	IFon	TYP.	0.5 mA			
			MAX.	3.0 mA			
	Recovery LED Current	IFoff	TYP.	0.35 mA	0.35 mA	0.35 mA	
			MAX.	0.5 mA	0.5 mA	0.5 mA	
Output	Drop-out Voltage	VCC	MIN.	6 V	10 V	5 V	IF=5mA,IL=100mA, Time to flow is within 1 sec.
			TYP.	8 V	12 V	8.3 V	VL=Rating
	Off-State Leakage Current	Isc	MIN.	3 uA	1 uA	5 uA	VL=0, f=1MHz
			TYP.	8 uA	8 uA	14 uA	IF = 5 mA Within 20ms on time
Transmission	Turn-On Time	Ton	TYP.	0.23 ms	0.23 ms	0.8 ms	IF=5mA, IL=100mA,
	Turn-Off Time	Toff	TYP.	0.03 ms	0.03 ms	0.1 ms	
Coupled	I/O Isolation Resistance	$R_{I/O}$	MIN.	$10^9\Omega$			DC500V
	I/O Capacitance	$C_{I/O}$	TYP.	0.8 pF			f=1MHz
			MAX.	1.5 pF			

Photovaltaic MOSFET Driver Specifications

Electrical Specifications (Ambient Temperature: 25°C)

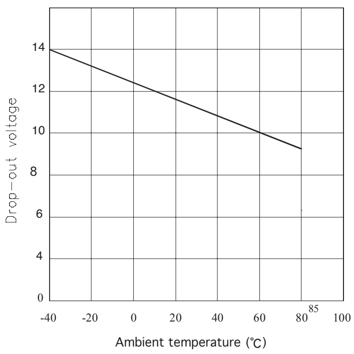
Item		Symbol	LTP-2G2	LTP-2G3	LTP-2G4	LTP-2G5	Note
Input	Continuous LED Current	IF	50 mA				
	Peak LED Current	IFP	1000 mA				f=100Hz, duty=1%
	LED Reverse Voltage	VR	5 V				
	Input Power Dissipation	PIn	75 mW				
I/O Breakdown Voltage		$V_{I/O}$	2500 Vrms				RH=60%, 1min
Operating Temperature		Topr	-40°C to +85°C				
Storage Temperature		Tstg	-40°C to +100°C				

Electrical Specifications (Ambient Temperature: 25°C)

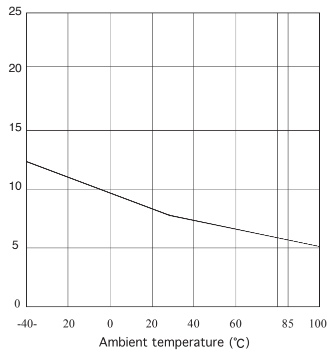
Item		Symbol		LTP-2G2	LTP-2G3	LTP-2G4	LTP-2G5	Conditions
Input	LED Forward Voltage	VF	TYP.	1.2 V				IF=10mA
			MAX.	1.5 V				
	Operation LED Current	IFon	TYP.	0.5 mA				
			MAX.	3.0 mA				
	Recovery LED Current	IFoff	TYP.	0.35 mA	0.35 mA	0.35 mA	0.35 mA	
			MAX.	0.5 mA	0.5 mA	0.5 mA	0.5 mA	
Output	Drop-out Voltage	Vcc	MIN.	6 V	10 V	5 V	10 V	IF=5mA,IL=100mA, Time to flow is within 1 sec.
			TYP.	8 V	12 V	8.3 V	16 V	VL=Rating
	Off-State Leakage Current	Isc	MIN.	3 uA	1 uA	5 uA	3 uA	VL=0, f=1MHz
			TYP.	8 uA	8 uA	14 uA	8 uA	IF = 5 mA Within 20ms on time
Transmission	Turn-On Time	Ton	TYP.	0.23 ms	0.23 ms	0.8 ms	0.28 ms	IF=5mA, IL=100mA,
	Turn-Off Time	Toff	TYP.	0.03 ms	0.03 ms	0.1 ms	0.05 ms	
Coupled	I/O Isolation Resistance	$R_{I/O}$	MIN.	$10^9 \Omega$				DC500V
	I/O Capacitance	$C_{I/O}$	TYP.	0.8 pF				f=1MHz
			MAX.	1.5 pF				

Reference Data

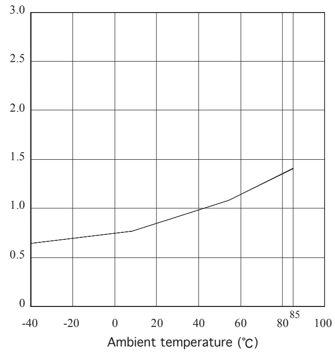
Drop-out voltage Vs.
Ambient temperature



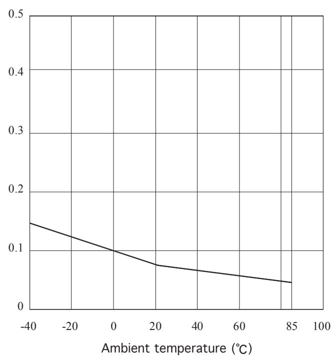
Shotr circuit current Vs.
Ambient temperature



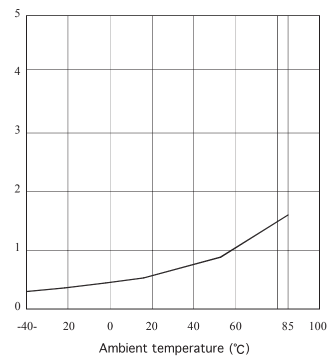
Turn on time Vs.
Ambient temperature



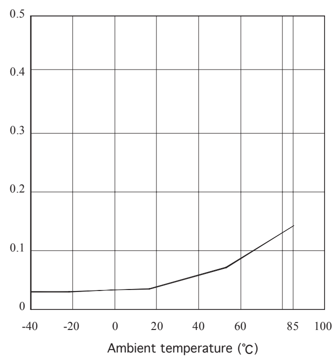
Turn off time Vs.
Ambient temperature



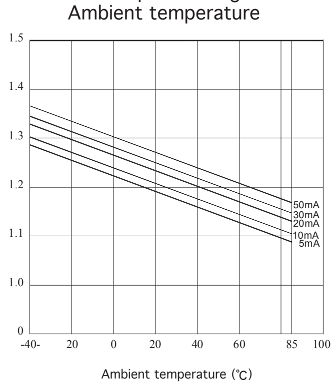
LED operate current Vs.
Ambient temperature



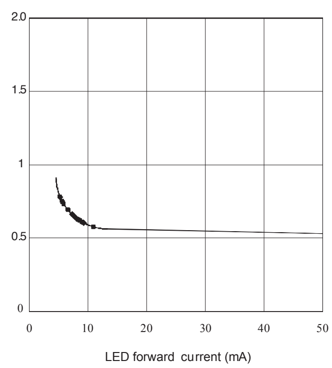
LED turn off current Vs.
Ambient temperature



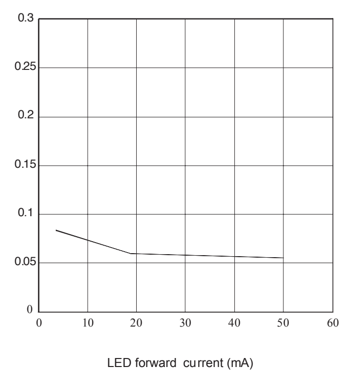
LED dropout voltage Vs.
Ambient temperature



Turn on time Vs.
Forward current characteristics



Turn off time Vs.LED forward
current characteristics



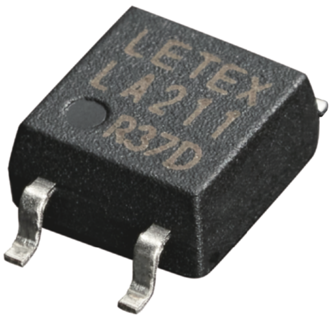
3 Photocoupler
光耦合器

Features

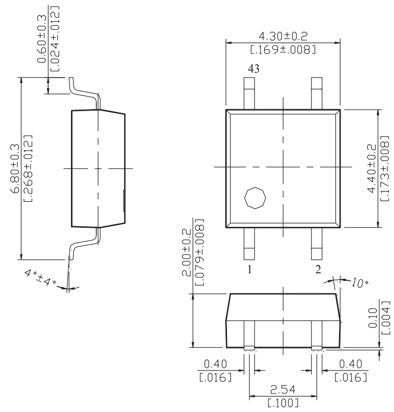
- SOP package in miniature design
  - 4 pin 4.4×4.30×2.0 [.173×.169×.083]
  - 8 pin 4.4×9.40×2.0 [.173×.370×.083]
- 1500Vrms/ 2500Vrms Input /Output Isolation
- High speed response
- No feedback phenomenon, input signal transmission by one-way,
  Output signal doesn't affect the input signal.
- Current transfer ratio
  {CTR:MIN=80% at IF=5mA, Vce=5V}
- Directly interfaces to TTL.
- UL Approved (No. E222222)

Applications

- Telecommunications (PC, Electronic notepad)
- Measuring and Testing equipments
- Industrial controls
- Security equipment
- High speed inspection machines
- Copiers, automatic vending machines
- Telephone sets

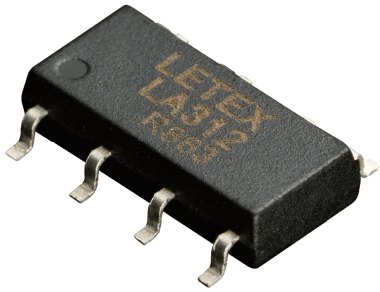


SOP
4-Pin

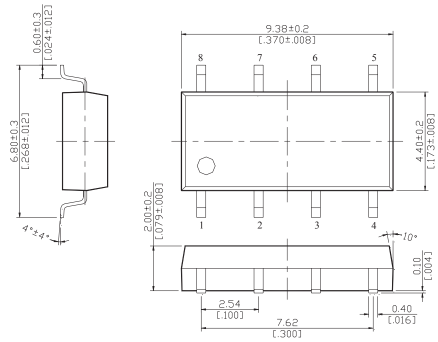


Electronic and Optical Characteristics (Ta= 25℃)

P/No.		VF (v)	IR (μA)	BVceo (V)	Iceo (nA)	CTR (%)	V(sat)(V)	Riso (Ω)	Tr (μs)	Tf (μs)	Input	Viso (Vrms)	Package
		IF=20mA	VR=5V	IC=0.5mA	Vce=20V	IF=5mA Vce=5V	IF=20mA IC=1mA	DC500V	Vce=2V IC=2mA RL=100Ω				
Phototransistor Coupler													
LA211	Min			80		80		10^9			DC		
	Typ	1.2											
	Max	1.4	10		100	600	0.4		3	3			
LA212	Min			80		80		10^9			AC		
	Typ												
	Max	1.4			100	600	0.3		3	3			
LA213	Min			35		600					DC	2500	SOP-4
	Typ	1.2											
	Max	1.4	10		100	7000	1	10^9	300	250			
LA214	Min			35		600					AC		
	Typ	1.2											
	Max	1.4			100	7000	1	10^9	300	250			
LA215	Min			350		600					DC		
	Typ	1.2											
	Max	1.4	10		100	9000	0.3	10^9	300	100			



**SOP
8-Pin**

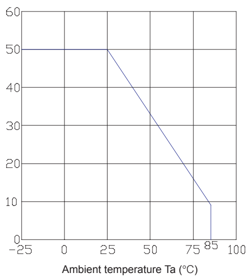


Electronic and Optical Characteristics (Ta= 25℃)

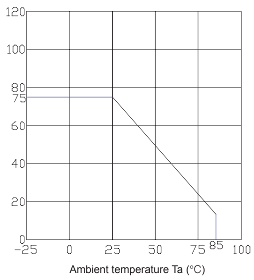
P/No.		VF (v)	IR (μA)	BVceo (V)	Iceo (nA)	CTR (%)	V(sat)(V)	Riso (Ω)	Tr (μs)	Tf (μs)	Input	Viso (Vrms)	Package
		IF=20mA	VR=5V	IC=0.5mA	Vce=20V	IF=5mA Vce=5V	IF=20mA IC=1mA	DC500V	Vce=2V IC=2mA RL=100Ω				
Phototransistor Coupler													
LA311	Min			80		80		10^9			DC	2500	SOP-8
	Typ	1.2											
	Max	1.4	10		100	600	0.4		3	3			
LA312	Min			80		80		10^9			AC		
	Typ												
	Max	1.4			100	600	0.3		3	3			
LA313	Min			35		600					DC		
	Typ	1.2											
	Max	1.4	10		100	7000	1	10^9	300	250			
LA314	Min			35		600					AC		
	Typ	1.2											
	Max	1.4			100	7000	1	10^9	300	250			
LA315	Min			350		600					DC		
	Typ	1.2											
	Max	1.4			100	9000	0.3	10^9	300	100			

Reference Data

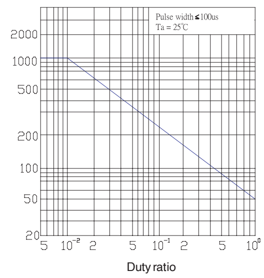
Forward Current vs.
Ambient Temperature



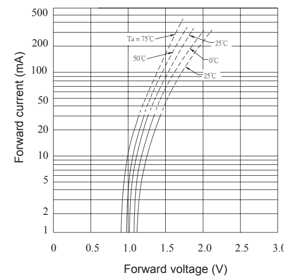
Collector Power Dissipation vs.
Ambient Temperature



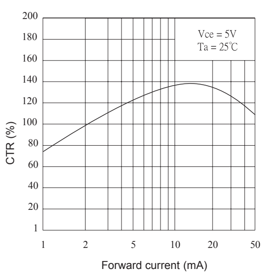
Peak Forward Current vs.
Duty Ratio



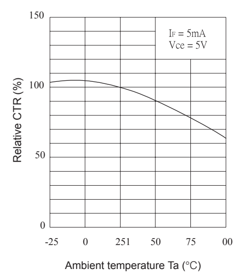
Forward current Vs.
Forward woltage



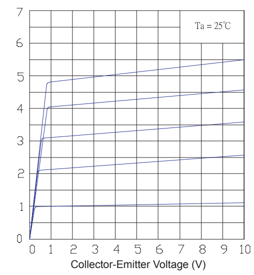
Current transfer ratio Vs.
Forward current



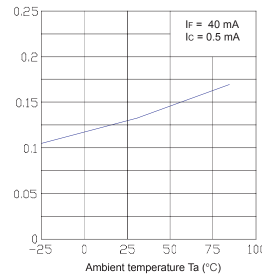
Relative CTR Vs.
Ambient temperature



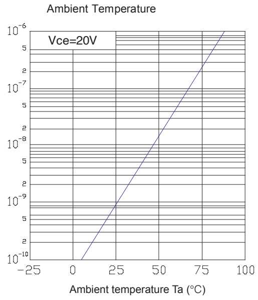
Collector Current vs.
Collector-Emitter Voltage



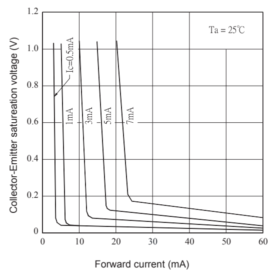
Collector-Emitter Saturation Voltage vs.
Ambient Temperature



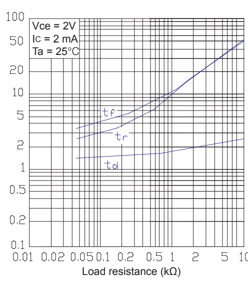
Collector Dark Current vs.
Ambient Temperature



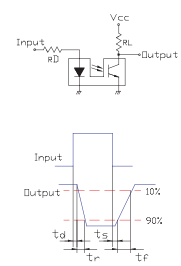
Collector-Emitter Saturation voltage Vs.
Forward current



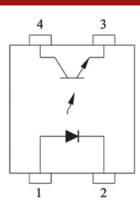
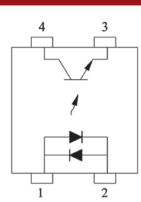
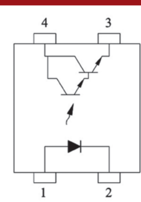
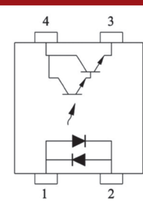
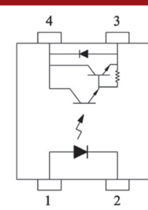
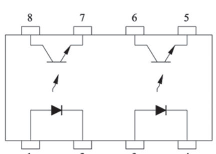
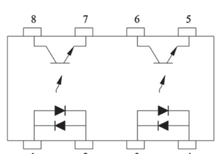
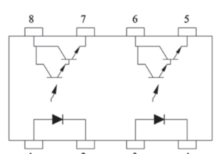
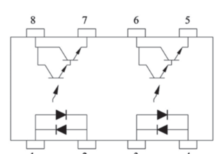
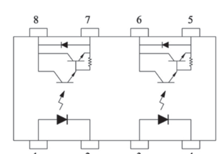
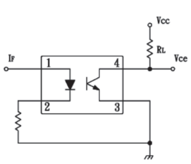
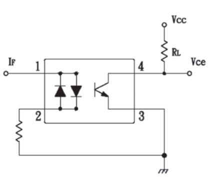
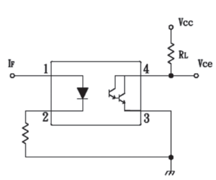
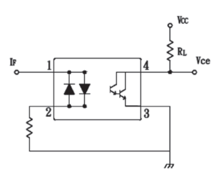
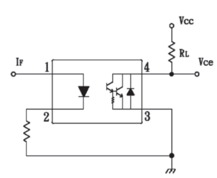
Response Time vs.
Load Resistance



Test Circuit for Response Time

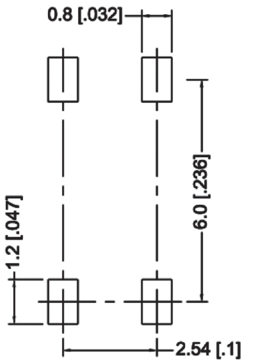


Schematic

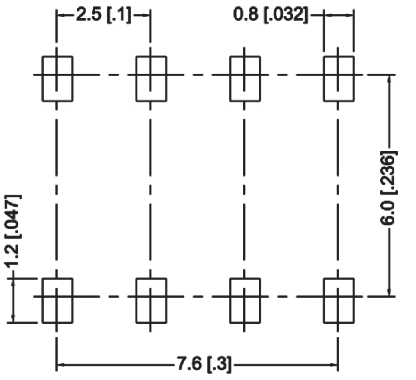
LA211	LA212	LA213	LA214	LA215
				
LA311	**LA312**	**LA313**	**LA314**	**LA315**
				
Wiring diagram				
				

Recommended Mounting Pad Layout Sizes

(SOP 4 PIN)
(Top view)



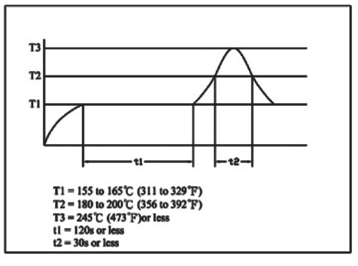
(SOP 8 PIN)
(Top view)



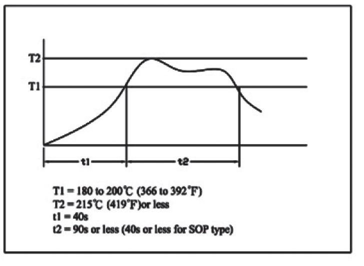
Unit: mm [INCH]
Tolerance: ± 0.1[.004]

Soldering

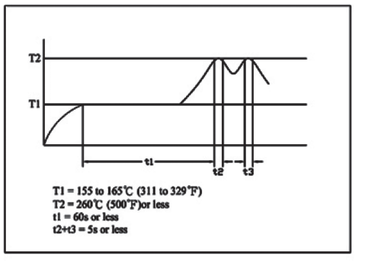
(1)IR(infrared reflow)soldering method



(2)Vapor phase soldering method



(3)Double wave soldering method



Notes:

1. When soldering PC board terminals, keep soldering time to within 10 s at 260℃ (500 °F)

2. When soldering surface-mount terminals, the following conditions are recommended.

3. Soldering iron method

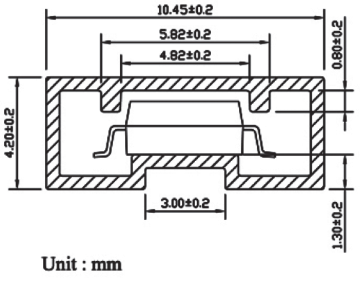
Tip temperature: 280 to 300℃ (536 to 572 °F)

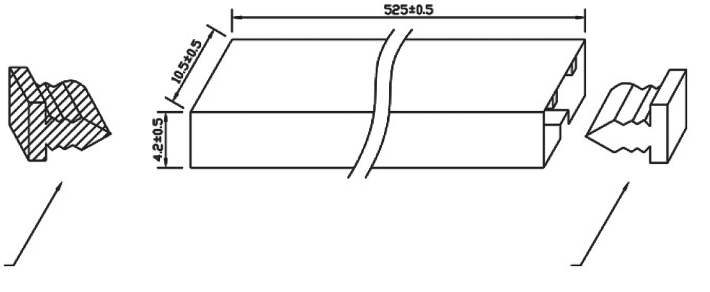
Wattage: 30 to 60 W

Soldering time: within 5 s

Taping Specifications for Surface Mount Devices

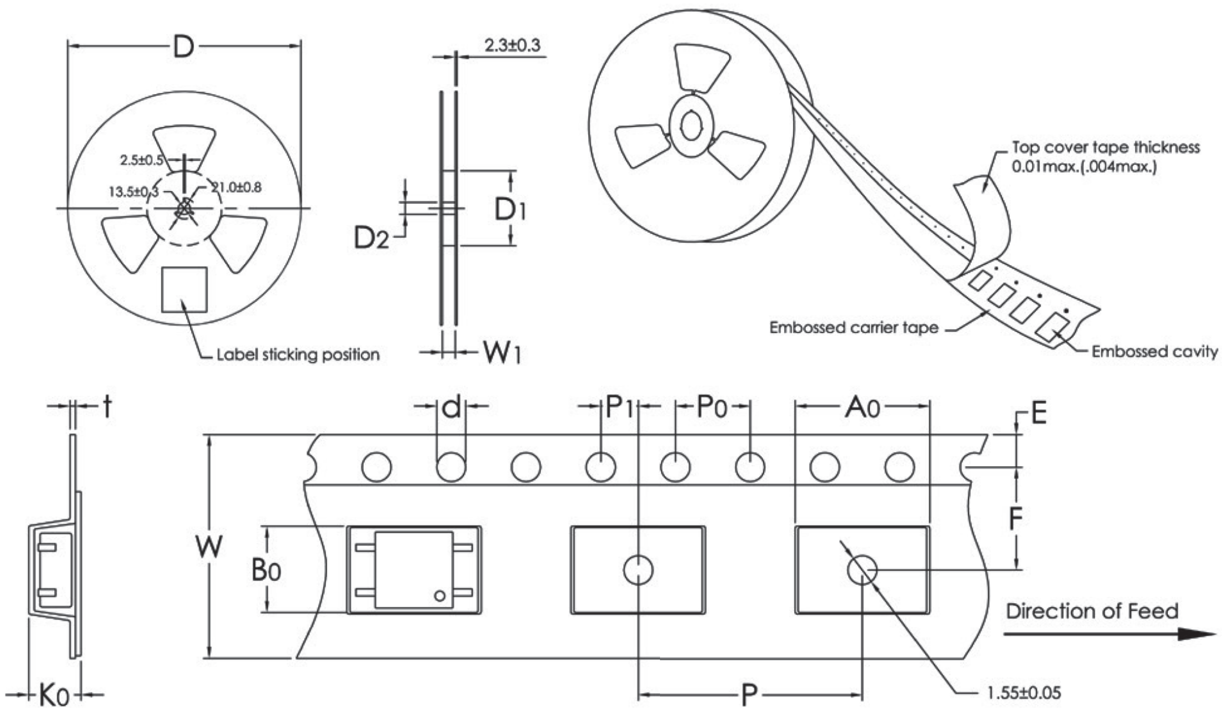
Tube **Pin 1 is on the stopper B (green) side**





Package Type	Quantity
SOP 4 pin	100 pcs
SOP 8 pin	50 pcs

Tape and Reel

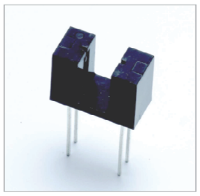


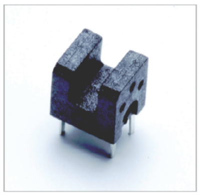
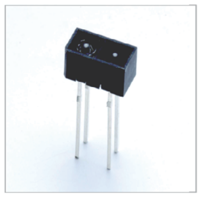
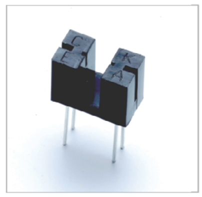
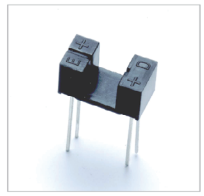
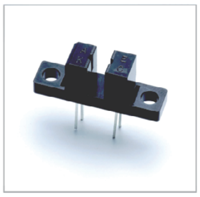
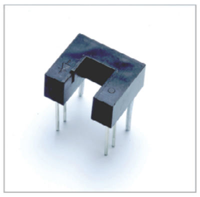
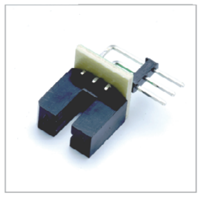
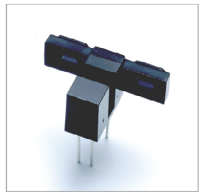
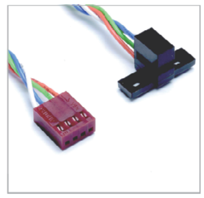
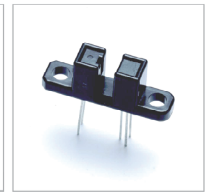
Product	SOP-4pin		SOP-8pin	
Packaging	**2000pcs / Reel**		**1000pcs / Reel**	
Symbol	mm	INCH	mm	INCH
Tape Size	12.0	.472	16.0	.630
A0	7.20±0.10	.283±.004	7.20±0.10	.283±.004
B0	4.80±0.10	.189±.004	9.80±0.10	.386±.004
d	1.55±0.05	.061±.002	1.55±0.05	.061±.002
D	330.0±2.0	13.0±.079	330.0±2.0	13.0±.079
D1	99.5±1.0	3.92±.039	99.5±1.0	3.92±.039
D2	13.5±0.30	.531±.012	13.5±0.30	.531±.012
E	1.75±0.05	.069±.002	1.75±0.05	.069±.002
F	5.50±0.05	.217±.002	7.50±0.10	.295±.004
K0	2.80±0.30	.110±.012	2.80±0.30	.110±.012
P	12.00±0.10	.472±.004	12.00±0.10	.472±.004
P0	4.00±0.10	.157±.004	4.00±0.10	.157±.004
P1	2.00±0.05	.079±.002	2.00±0.05	.079±.002
t	0.30±0.05	.012±.002	0.30±0.05	.012±.002
W	12.0±0.30	.472±.012	16.0±0.30	.630±.012
W1	13.5±0.50	.531±..020	17.5±0.50	.689±.020

Notes: 1. There shall be 400 mm of leader minimum which may consist of carrier and cover tape follower.

2. Devices are pockets in accordance with IEC standard IEC286-3 (JIS C 0806) and specifications given above.

4 Photointerrupter
光遮斷器



P/No.	VF (v)	IR (μA)	BVceo (V)	Iceo (nA)	CTR (%)	V(sat)	Tr (μs)	Tf (μs)	Fig. No.
	F=10mA	VR=5V		Vce=20V IF=0V	IF=20mA Vce=5V	IF=20mA IC=1mA	Vce=2V IC=2mA RL=100Ω		
	V (Max.)	μA (Max.)		nA (Max.)	mA (Min.)	V (Max.)	μs (Typ.)		
LBT-121	1.4V	10	30V	100	0.5mA	0.4	5	5	Fig. 1
LBR-123	1.6V	10	30V	100	0.1mA	0.4	20	20	Fig. 2
LBT-124	1.6V	10	30V	100	0.2mA	0.4	5	5	Fig. 3
LBR127HLD	1.5V	10	30V	100	0.2mA	0.4	15	15	Fig.4
LBT-130-1	1.4V	10	30V	100	0.5mA	0.4	10	10	Fig.5
LBT-130-2	1.4V	10	30V	100	0.5mA	0.4	10	10	Fig.6
LBT-131	1.4V	10	30V	100	0.5mA	0.4	10	10	Fig.7
LBT-133	1.3V	10	30V	100	0.5mA	0.4	30	25	Fig.8
LBT-134	1..3V	10	30V	100	0.5mA	0.4	30	25	Fig.9
LBT-135	1.4V	10	30V	100	0.5mA	0.4	30	25	Fig.10
LBT-136	1.4V	10	30V	100	0.5mA	0.4	10	10	Fig.11
LBT-137	1.4V	10	30V	100	0.5mA	0.4	5	5	Fig.12
LBT-138	1.5V	10	30V	100	1.0mA	0.4	20	20	Fig.13
LBT-140	1.6V	10	30V	100	0.2mA	0.4	10	10	Fig.14
LBT-141	1.6V	10	30V	100	0.2mA	0.4	10	10	Fig.15
LBT-142	1.7V	10	30V	100	1.25mA	0.4	30	30	Fig.16
LBT-143	1.4V	10	30V	100	0.5mA	0.4	10	15	Fig.17
LBT-213S	1.4V	10	30V	100	0.5mA	0.4	10	10	Fig.18
LBT-204P	1.4V	10	30V	100	0.5mA	0.4	10	10	Fig.19
LBA-201A	1.3V	10	30V	100	0.5mA	0.4			Fig.20
LBT-136W	1.4V	10	30V	100	0.5mA	0.4	10	10	Fig.21
LBT-133W	1.4V	10	30V	100	0.5mA	0.4	10	10	Fig.22

Fig. 1

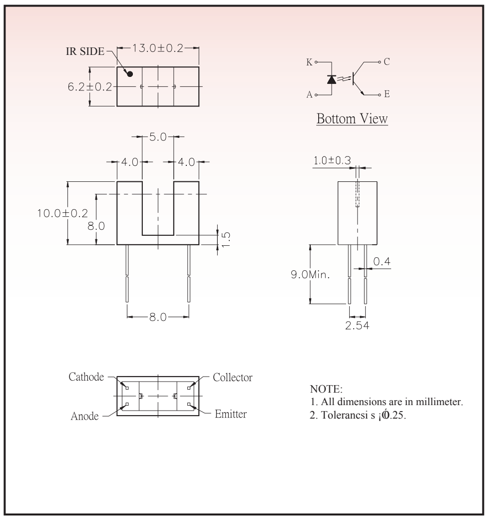


Fig. 2

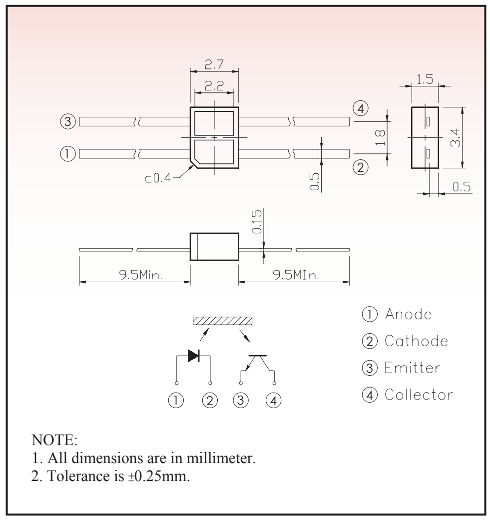


Fig. 3

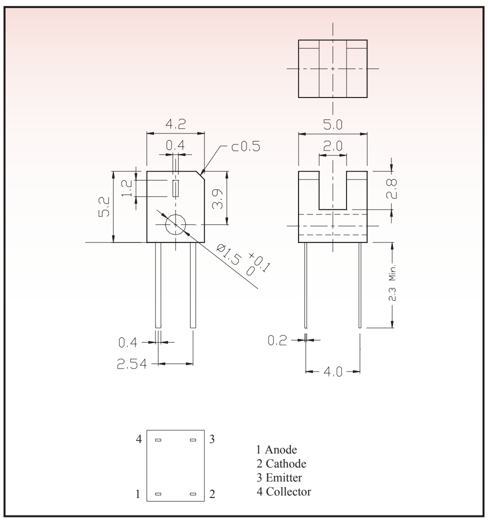


Fig. 4

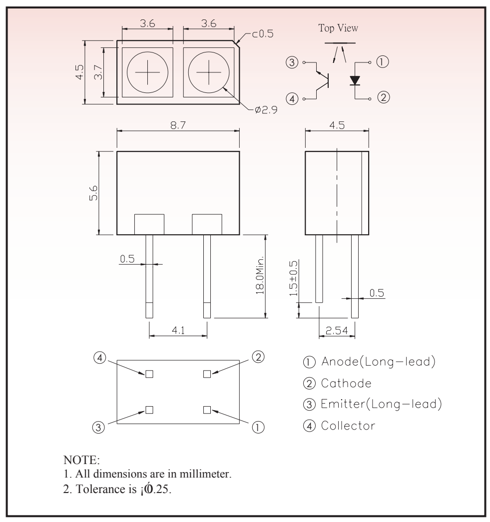


Fig. 5

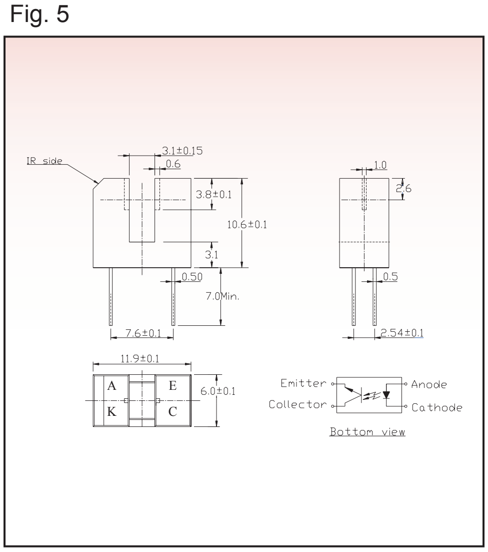
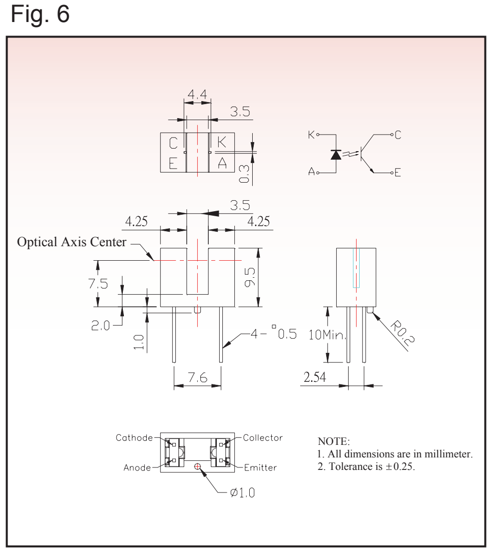


Fig. 6



Notes: 1. All dimensions are in millimeter. 2. Tolerance is ± 0.25

Fig. 7

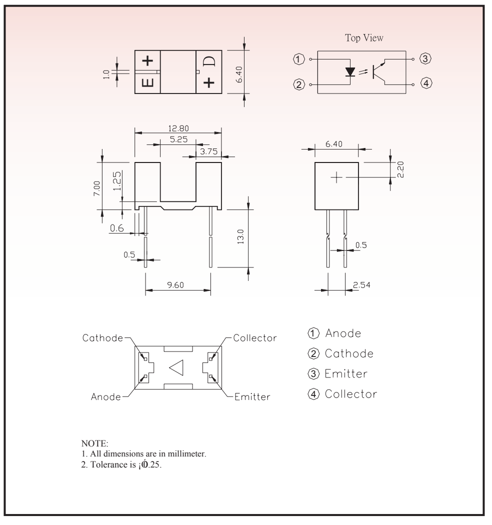


Fig. 8

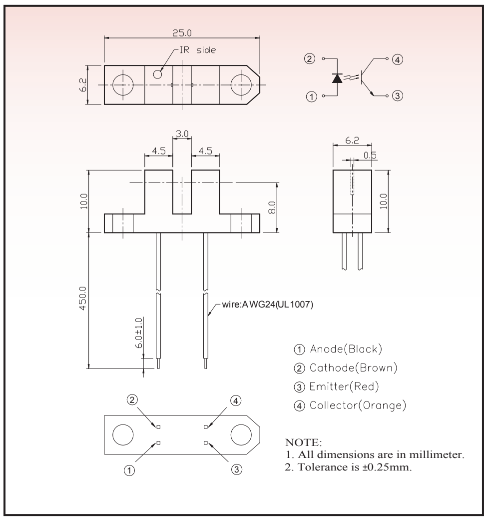


Fig. 9

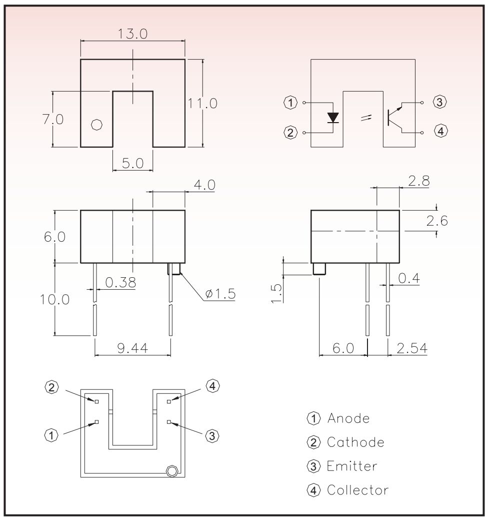


Fig. 10

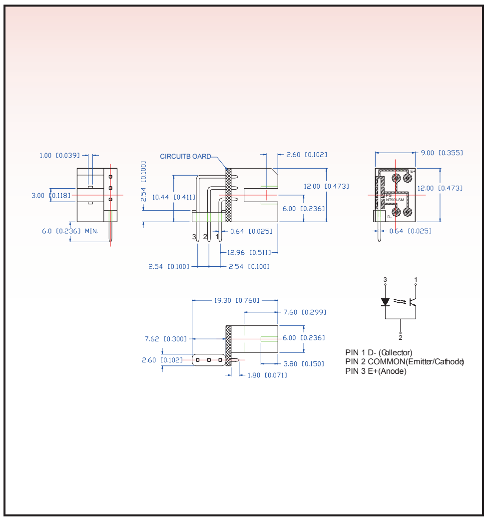


Fig. 11

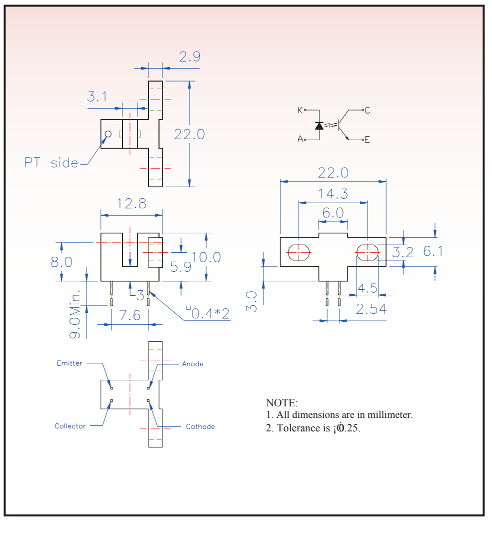


Fig. 12

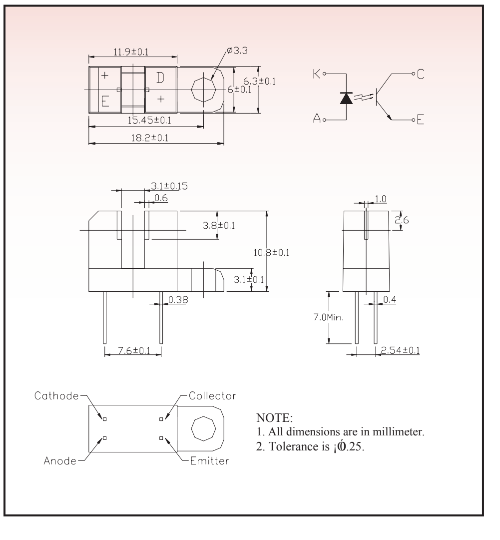


Fig. 13

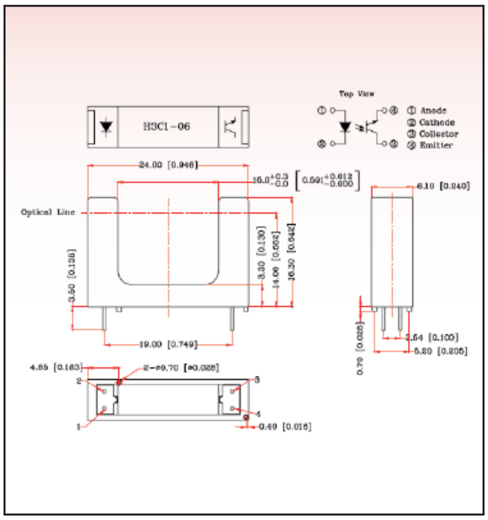


Fig. 14

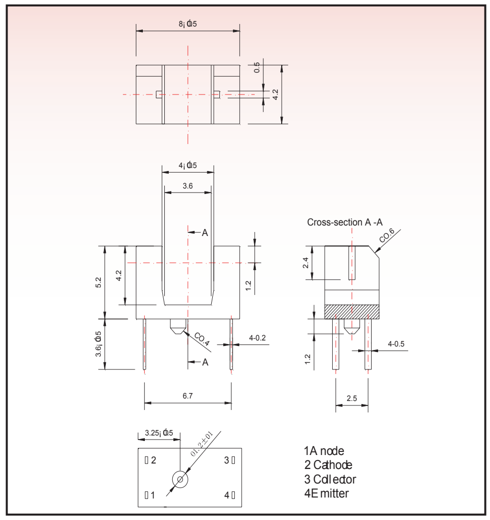


Fig. 15

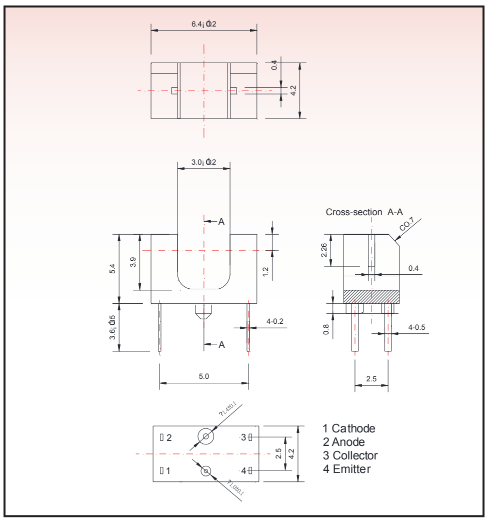


Fig. 16

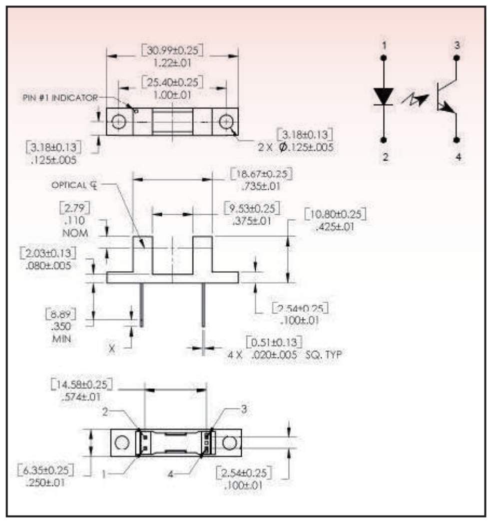


Fig. 17

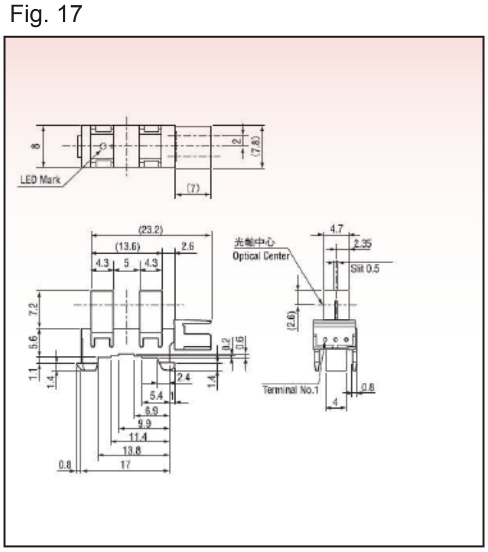
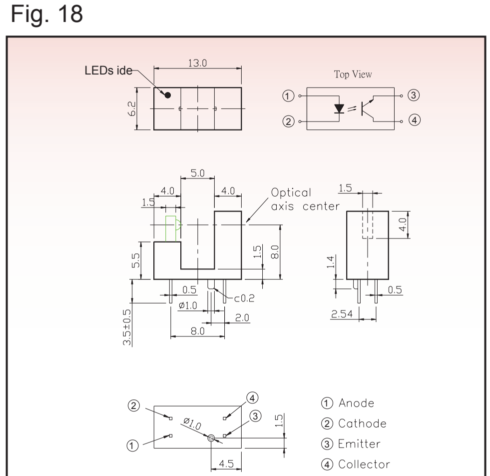


Fig. 18



NOTE:
1. All dimensions are in millimeter.
2. Tolerance is ±0.25mm.

Fig. 19

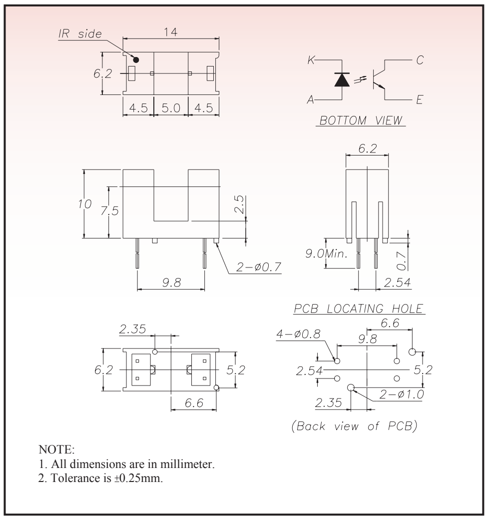


Fig. 20

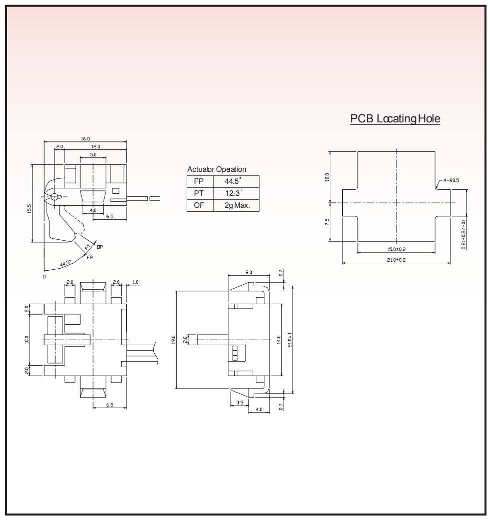


Fig. 21

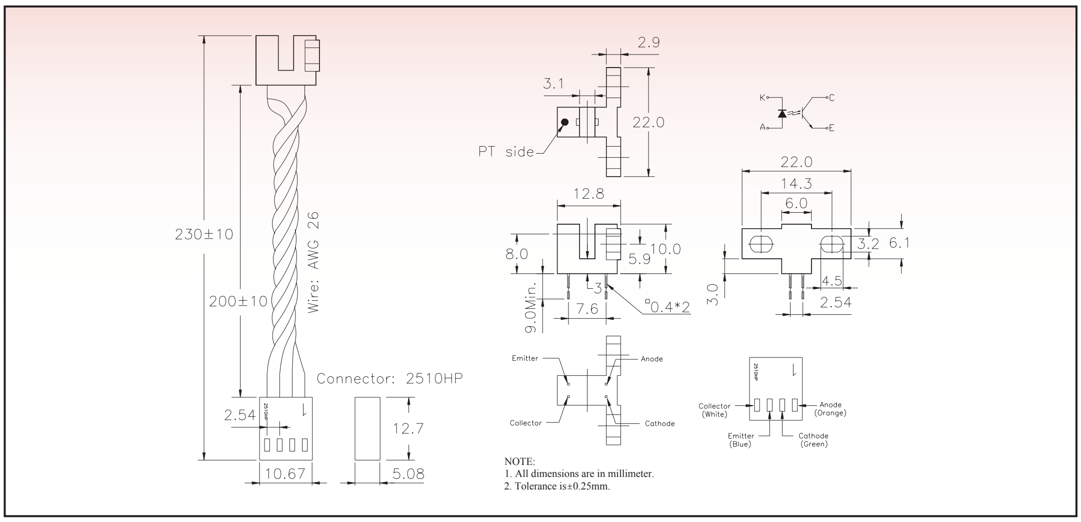
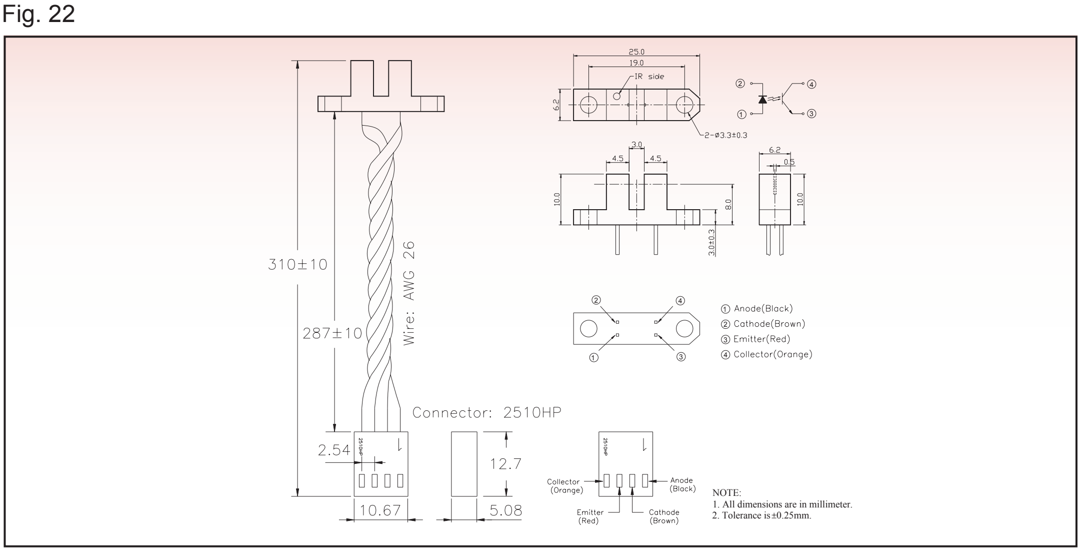
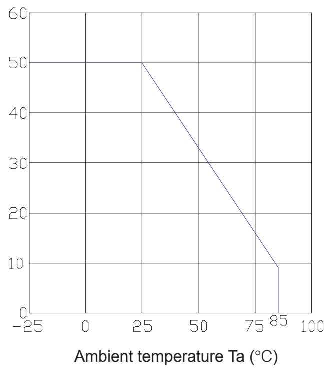


Fig. 22

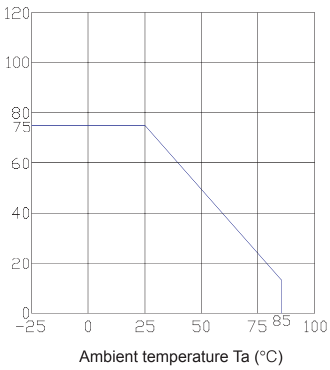


Reference Data

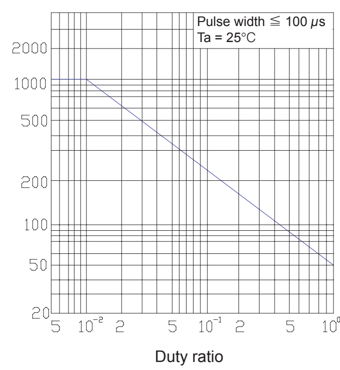
Forward Current vs.
Ambient Temperature



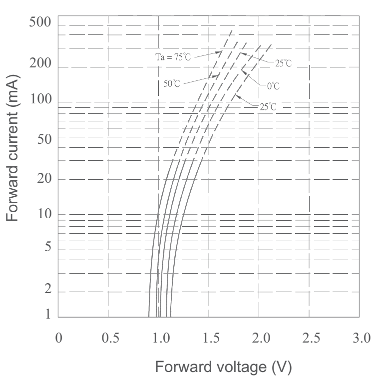
Collector Power Dissipation vs.
Ambient Temperature



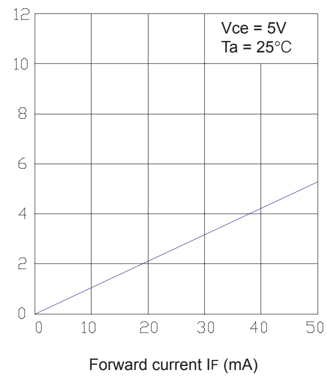
Peak Forward Current vs.
Duty Ratio



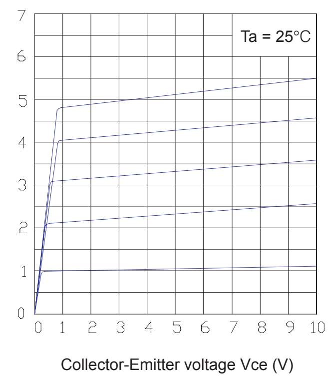
Forward current Vs.
Forward voltage



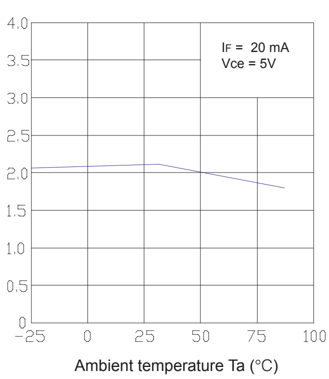
Collector Current vs.
Forward Current



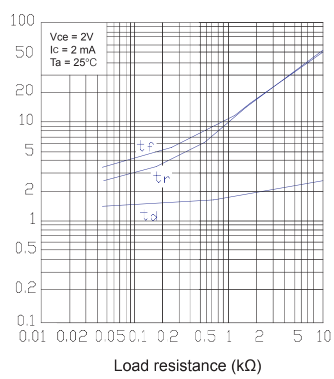
Collector Current vs.
Collector-Emitter Voltage



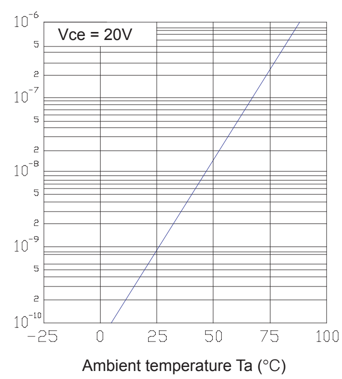
Collector Current vs.
Ambient Temperature



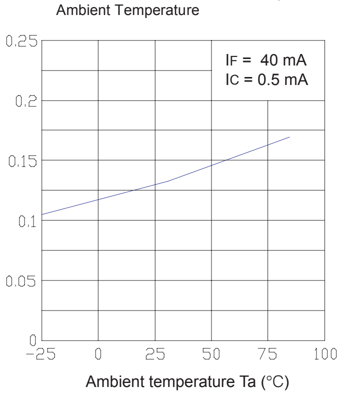
Response Time vs.
Load Resistance



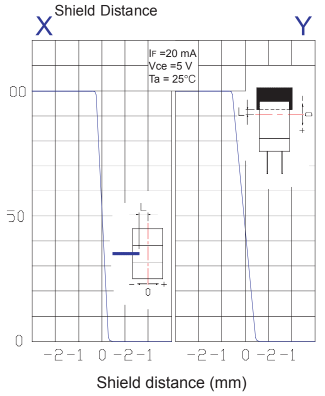
Collector Dark Current vs.
Ambient Temperature



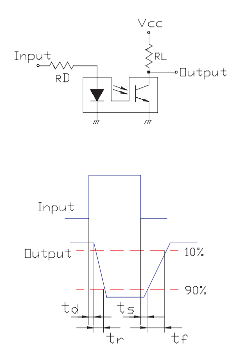
Collector-Emitter Saturation Voltage vs.
Ambient Temperature



Relative Collector Current vs.
Shield Distance

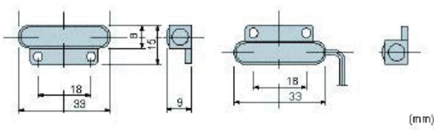
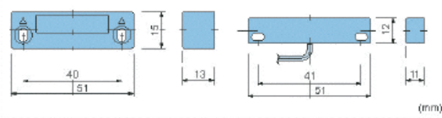
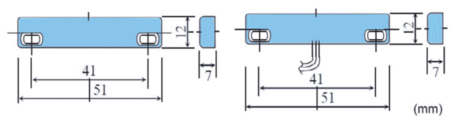
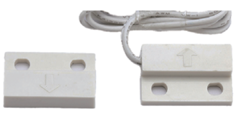
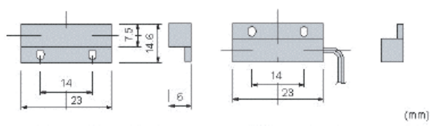
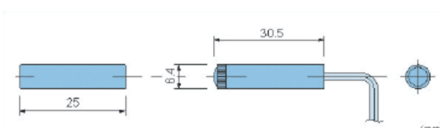
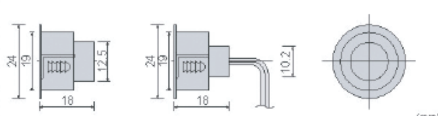
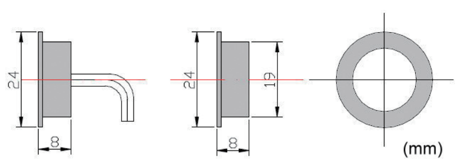


Test Circuit for Response Time

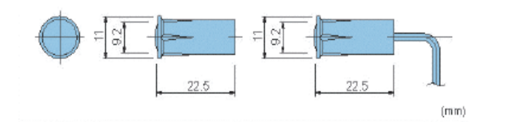
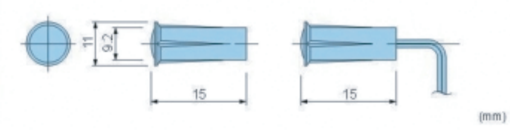
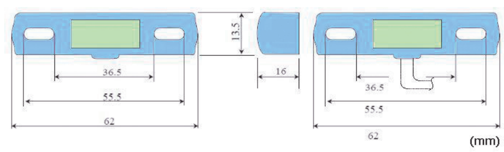
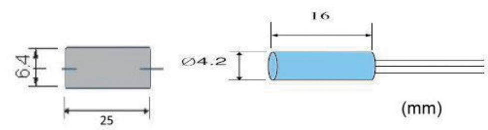
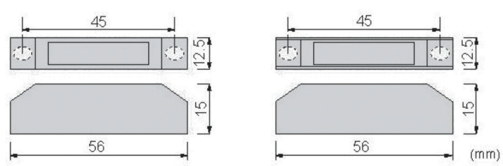
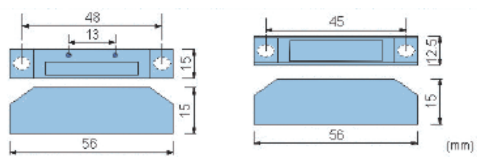
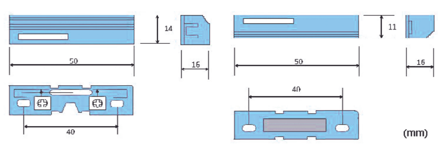
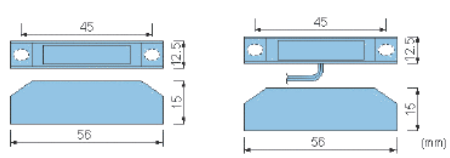


5 Magnetic Contact 磁簧開關

Product Description Table

Model		Dimemsion	Note
LC-12			■ 小型，完全防水設計。 ■ 螺絲孔側可折斷使用。 ■ 可供應 (C.L)，(O.L) 及 SPDT 三種接點型式產品。 ■ 磁引距離 20mm 以上 (C.L 產品)， 15mm 以上 (O.L 及 SPDT 產品)， LCL-12A 磁引距離 35mm 以上。
LC-13			■ 磁引距離 30mm 以上。 ■ 可供應 (C.L) 及 (O.L) 兩種接點型式產品。
LC-14			■ 薄型化設計。 ■ 磁引距離 20mm 以上。 ■ 可供應 (C.L) 及 (O.L) 兩種接點型式產品。
LC-15			■ 超小型設計。 ■ 可供應 (C.L) 及 (O.L) 兩種接點型式產品。 ■ 磁引距離 LC-15A: 15mm 以上，LC-15B: 15mm 以上。 ■ LC-15C: 13mm 以上。 ■ LCL-15A 磁引距離 22m 以上。
LC-22			■ 壓入隱藏安裝。 ■ 壓入口徑 1/4"。 ■ 開關與磁石可分開供應。
LC-25			■ LC-23 之短形化品種，全長僅 20mm。 ■ 磁引距離（在非鐵質門上）。 LC-25A: 20 mm 以上， LC-25B:15 mm 以上， LCL-25A: 30 mm 以上。
LC-28			■ LC-25 之薄形化產品，全長僅 8mm。 ■ 磁引距離（在非鐵質門上）。 LC-28A:20 mm 以上

Product Description Table

Model		Dimemsion	Note
LC-31			■ 壓入隱藏安裝，口徑 3/8"。 ■ 非鐵質門窗適用。 ■ 磁引距離 LC-31A:15mm 以上，LC-31B:13mm 以上， LC-31C:13mm 以上，LCL-31A:20 mm 以上。
LCS-41			■ LC-31 之短形化品種，全長僅 15mm。 ■ 磁引距離 LCS-411A:13 mm 以上， LCSL-411A:18mm 以上。 ■ 突波保護
LC-44			■ 完全防水設計。 ■ 適用於保全系統 ■ 磁引距離 25mm 以上。
LC-61			■ 壓入隱藏安裝，直徑 4.2ϕ。 ■ 非鐵質門窗適用。 ■ 磁引距離 LC-61A:15mm 以上
LC-66			■ 完全防水設計。 ■ 可自行搭配線材規格和長度。 ■ 磁引距離 25mm 以上。
LC-69			■ 可自行搭配線材規格和長度。 ■ 磁引距離 25mm 以上。
LC-73			■ LC-11 之取代產品，定位孔距相同。 ■ 磁引距離 25mm。 ■ 可供應 (C.L) 及 (O.L) 兩種接點型式產品。
LC-77			■ 完全防水設計。 ■ 磁引距離 25mm 以上。

Technology Corp.

Letex
Technology Corp

麗太科技股份有限公司 LETEX TECHNOLOGY CORP.
25, Sec. 3, Xibin Road, Longjing Dist.,Taichung City, Taiwan
Tel:886-4-2630-7366 Fax:886-4-2630-7367
E-mail:letex.tech@msa.hinet.net
http://www.letex.com.tw