



Truth Table

LED	V _o
ON	LOW
OFF	HIGH

INPUT

Parameter	Symbol	Test Condition	Min	Typ.	Max	Unit
Forward Voltage	V_F	$I_F = 10\text{mA}$		1.15	1.5	V
Reverse Current	I_R	$V_R = 5\text{V}$			10	μA
Terminal Capacitance	C_{IN}	$V = 0\text{V}, f = 1\text{MHz}$		33		pF

OUTPUT

Parameter	Symbol	Test Condition	Min	Typ.	Max	Unit
Operating Voltage	V _{CC}		3		15	V
Supply Current	I _{CC(off)}	V _{CC} = 5V, I _F = 0mA		1.6	5	mA
High Level Output Current	I _{OH}	I _F = 0mA, V _{CC} = V _O = 15V			100	μA



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ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$, unless otherwise specified, Typical Values at $T_A = 25^\circ\text{C}$)

COUPLED

Parameter	Symbol	Test Condition	Min	Typ.	Max	Unit
Supply Current	$I_{CC(on)}$	$V_{CC} = 5V, I_F = 10mA$		1.6	5	mA
Low Level Output Voltage	V_{OL}	$V_{CC} = 5V, I_F = I_{F(on)} (max), R_L = 270\Omega$			0.4	V
Turn-On Threshold Current	$I_{F(on)}$	$V_{CC} = 5V, R_L = 270\Omega$			1.6	mA
Turn-Off Threshold Current	$I_{F(off)}$	$V_{CC} = 5V, R_L = 270\Omega$		1		mA
Hysteresis Ratio	$I_{F(off)}/I_{F(on)}$	$V_{CC} = 5V, R_L = 270\Omega$	0.5		0.9	
Turn-On Time	$t_{(on)}$	$V_{CC} = 5V, I_F = I_{F(on)} (max), R_L = 270\Omega$			4	μs
Fall Time	t_f			0.1		
Turn-Off Time	$t_{(off)}$				4	
Rise Time	t_r			0.1		

ISOLATION

Parameter	Symbol	Test Condition	Min	Typ.	Max	Unit
Isolation Voltage	V_{ISO}	R.H. = 40% to 60%, $t = 1 \text{ min}$, Note 1	5000			V_{RMS}
Input - Output Resistance	R_{I-O}	$V_{I-O} = 500VDC$ R.H. = 40% to 60%	10^{11}			Ω

Note 1 : Measured with input leads shorted together and output leads shorted together.



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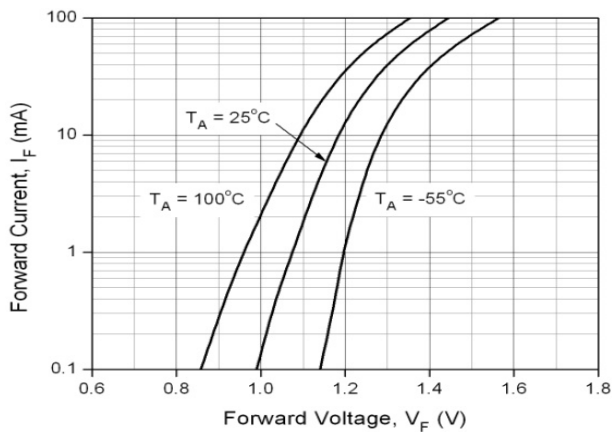


Fig 1 Forward Current vs Forward Voltage

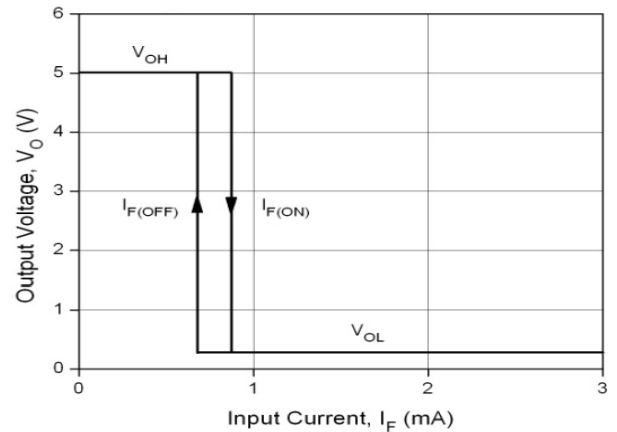


Fig 2 Transfer Characteristics

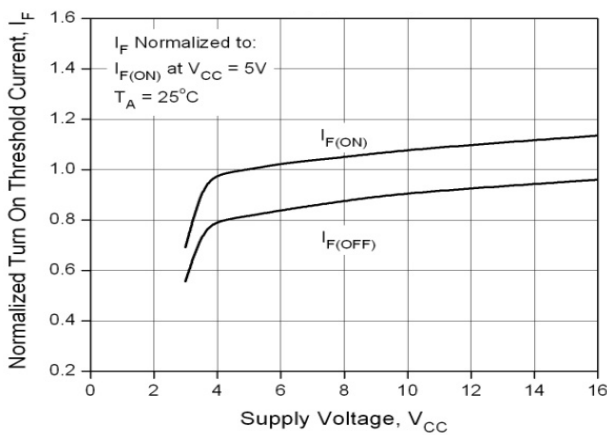


Fig 3 Normalized Turn-On Current vs Supply Voltage

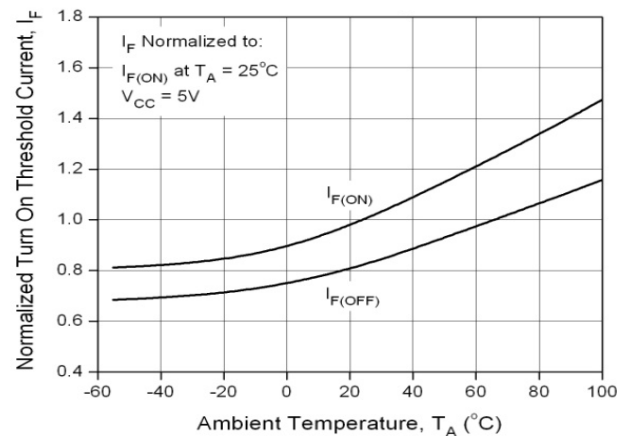


Fig 4 Normalized Turn-On Current vs Ambient temperature

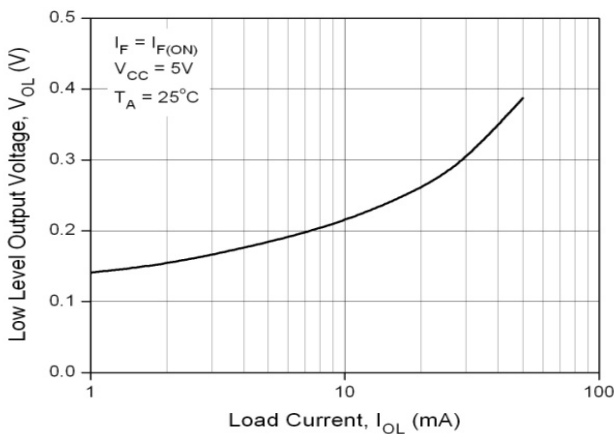


Fig 5 Low Level Output Voltage vs Load Current

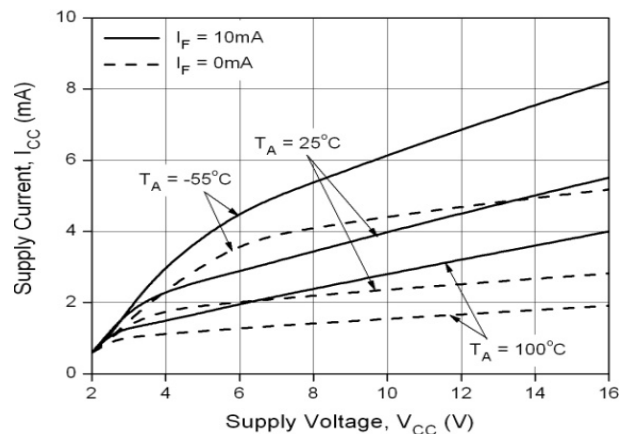
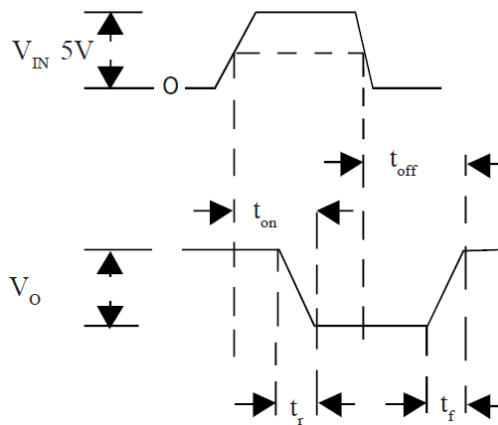
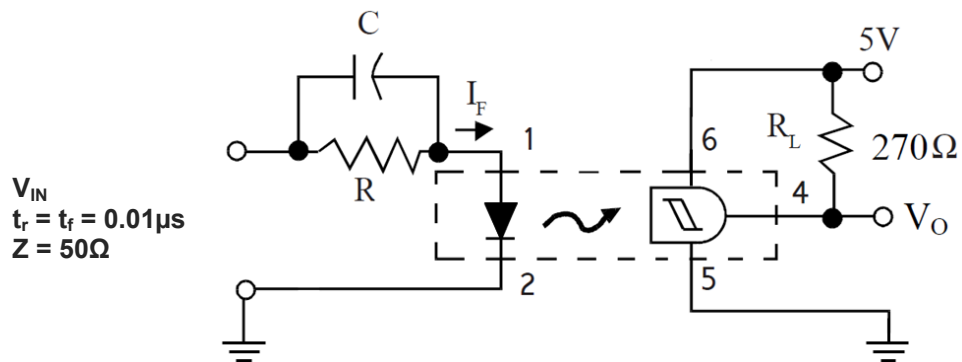


Fig 6 Supply Current vs Supply Voltage



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COMPONENTS

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Switching Time Test Circuit and Waveform



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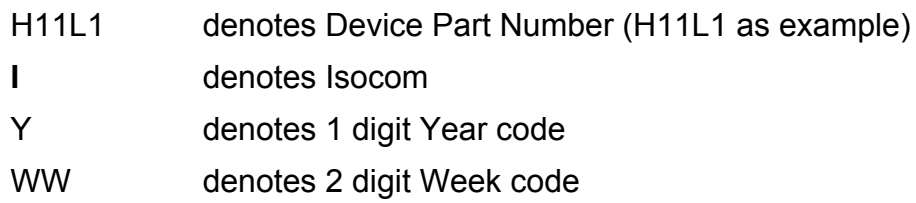
ORDER INFORMATION

H11L1 (UL Approval)			
After PN	PN	Description	Packing quantity
None	H11L1	Standard DIP6	65 pcs per tube
G	H11L1G	10mm Lead Spacing	65 pcs per tube
SM	H11L1SM	Surface Mount	65 pcs per tube
SMT&R	H11L1SMT&R	Surface Mount Tape & Reel	1000 pcs per reel

H11L1V (UL Approval and VDE Approvals)			
After PN	PN	Description	Packing quantity
None	H11L1V	Standard DIP6	65 pcs per tube
G	H11L1VG	10mm Lead Spacing	65 pcs per tube
SM	H11L1VSM	Surface Mount	65 pcs per tube
SMT&R	H11L1VSMT&R	Surface Mount Tape & Reel	1000 pcs per reel



DEVICE MARKING



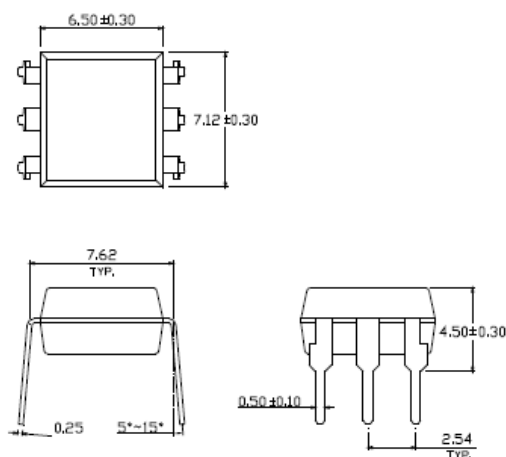


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COMPONENTS

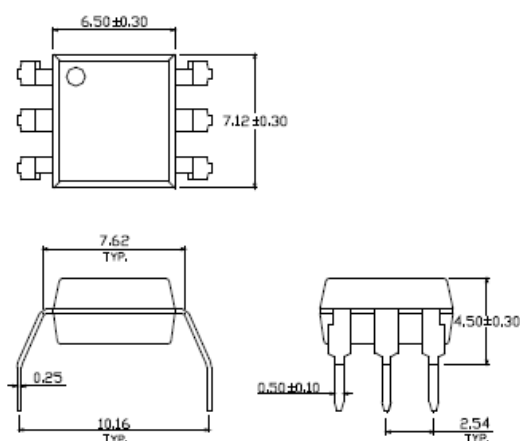
H11L1, H11L1V

PACKAGE DIMENSIONS in mm (inch)

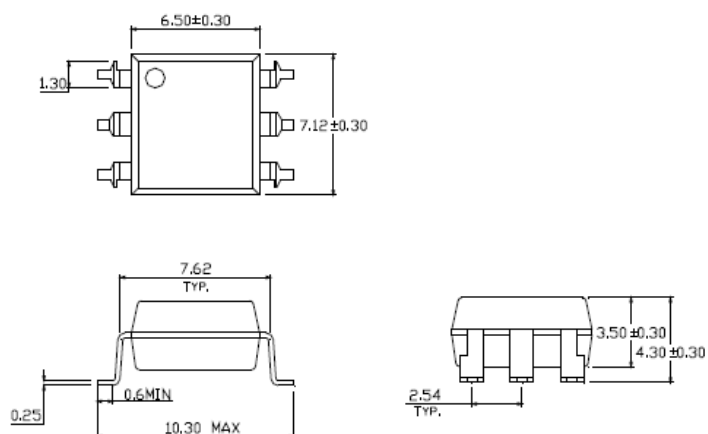
DIP



G Form



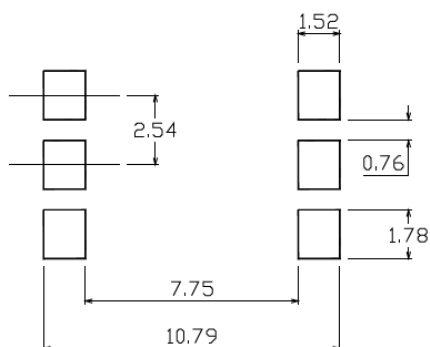
SMD



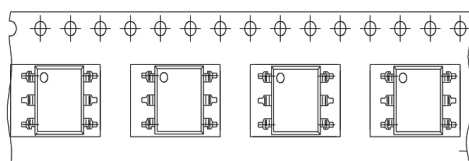


H11L1, H11L1V

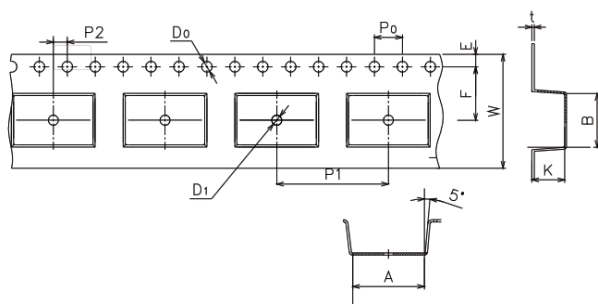
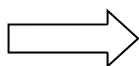
RECOMMENDED PAD LAYOUT FOR SMD (mm)



TAPE AND REEL PACKAGING



Direction of feed from reel

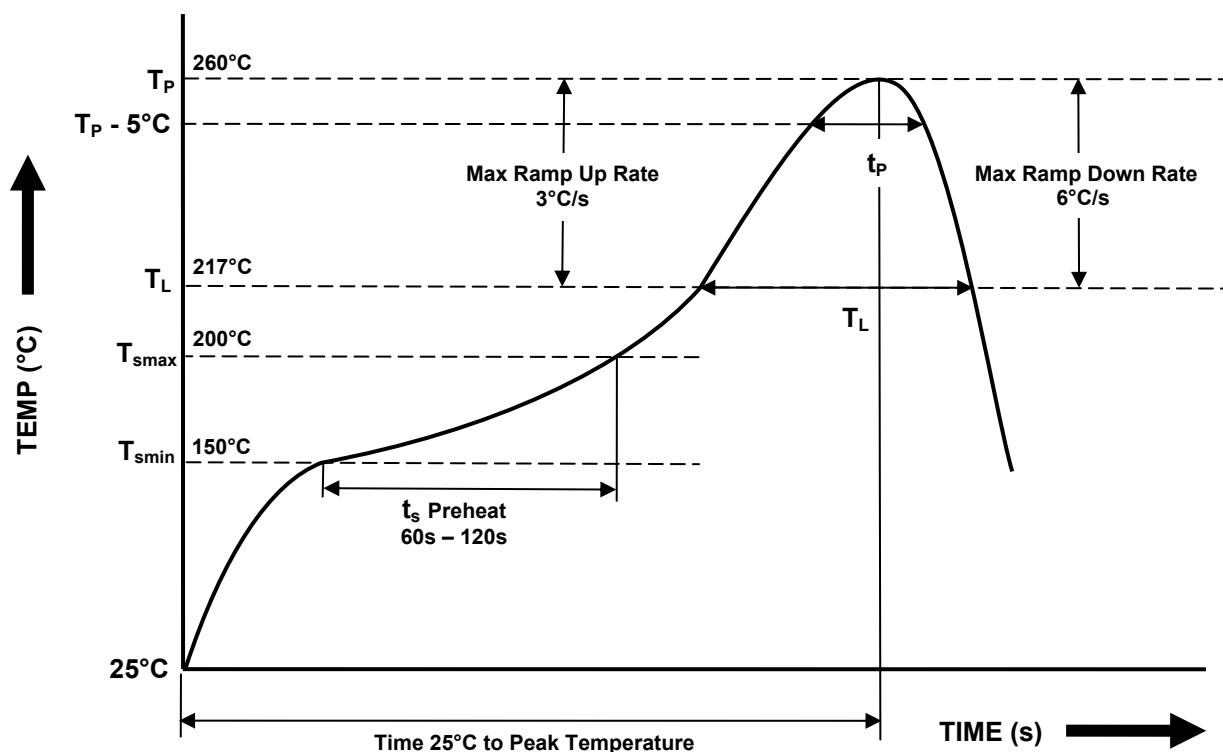


Dimension No.	A	B	Do	D1	E	F
Dimension(mm)	10.4±0.1	7.5±0.1	1.5±0.1	1.5+0.1/-0	1.75±0.1	7.5±0.1
Dimension No.	Po	P1	P2	t	W	K
Dimension (mm)	4.0±0.15	12.0±0.1	2.0±0.1	0.35±0.03	16.0±0.2	4.5±0.1

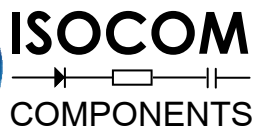


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IR REFLOW SOLDERING TEMPERATURE PROFILE (One Time Reflow Soldering is Recommended)



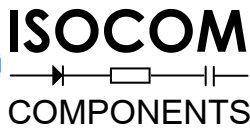
Profile Details	Conditions
Preheat - Min Temperature (T_{SMIN}) - Max Temperature (T_{SMAX}) - Time T_{SMIN} to T_{SMAX} (t_s)	150°C 200°C 60s - 120s
Soldering Zone - Peak Temperature (T_P) - Time at Peak Temperature - Liquidous Temperature (T_L) - Time within 5°C of Actual Peak Temperature ($T_P - 5^\circ\text{C}$) - Time maintained above T_L (t_L) - Ramp Up Rate (T_L to T_P) - Ramp Down Rate (T_P to T_L)	260°C 10s max 217°C 30s max 60s - 100s 3°C/s max 6°C/s max
Average Ramp Up Rate (T_{smax} to T_P)	3°C/s max
Time 25°C to Peak Temperature	8 minutes max



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