



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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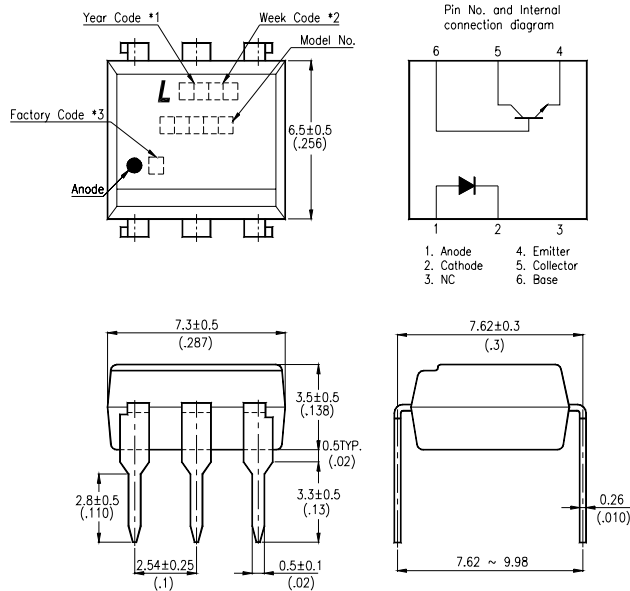


FEATURES

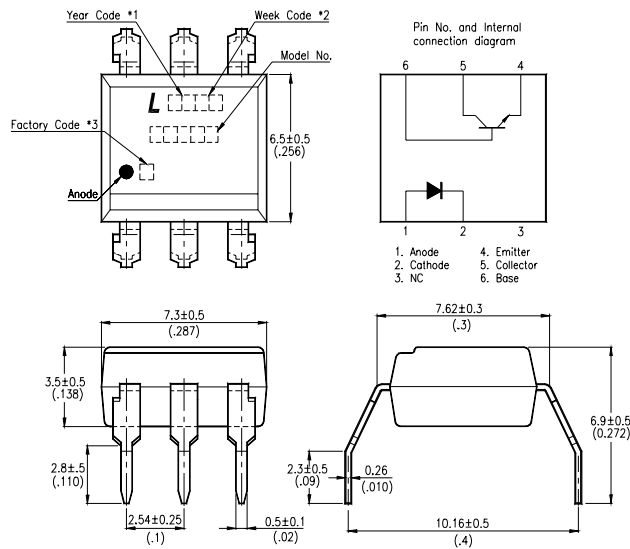
- * High input-output isolation voltage
($V_{iso} = 5,000V_{rms}$)
- * Current transfer ratio
(CTR : MIN. 10% at $I_F = 10mA$, $V_{CE} = 10V$)
- * Dual-in-line package :
H11A1, H11A2, H11A3, H11A4, H11A5
- * Wide lead spacing package :
H11A1M, H11A2M, H11A3M, H11A4M, H11A5M
- * Surface mounting package :
H11A1S, H11A2S, H11A3S, H11A4S, H11A5S
- * Tape and reel packaging :
(TYPE I) H11A1S-TA, H11A2S-TA, H11A3S-TA, H11A4S-TA, H11A5S-TA
(TYPE II) H11A1S-TA1, H11A2S-TA1, H11A3S-TA1, H11A4S-TA1, H11A5S-TA1
- * UL approved (No. E113898)
- * FIMKO approved (No. 209049)
- * NEMKO approved (No. P99102464)
- * DEMKO approved (No. 99-04182)
- * SEMKO approved (No. 9943380 / 01-20)
- * VDE approved (No. 094722)
- * CSA approve in progress

OUTLINE DIMENSIONS

Dual-in-line package:



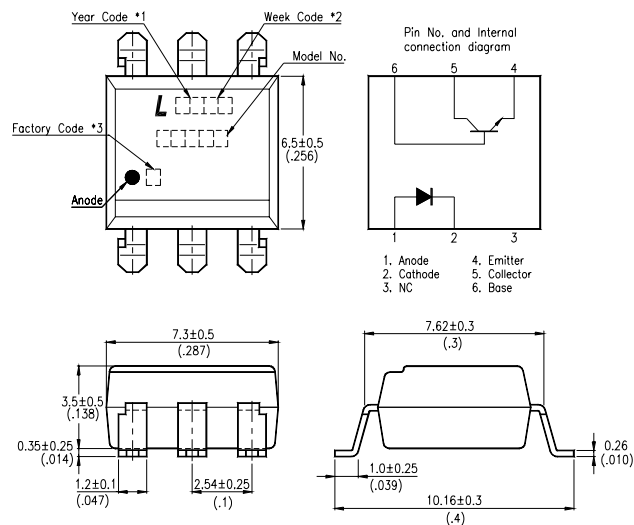
Wide lead spacing package :



- *1. Year date code.
- *2. 2-digit work week.
- *3. Factory identification mark shall be marked (Z : Taiwan, Y : Thailand).
- *4. Model No.: H11A1, H11A2, H11A3, H11A4, H11A5

OUTLINE DIMENSIONS

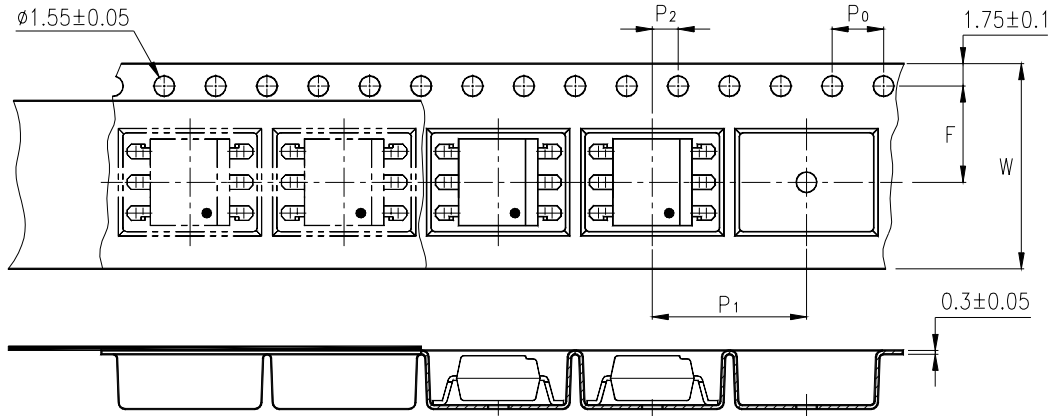
Surface mounting package :



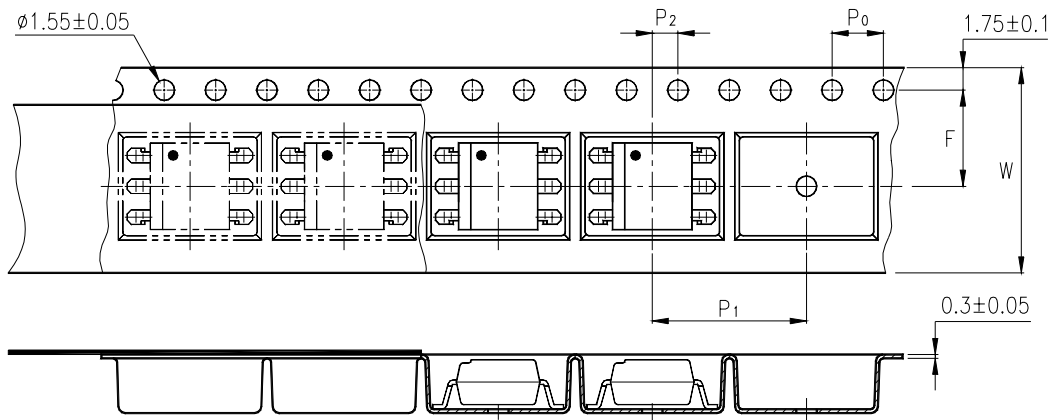
- *1. Year date code.
- *2. 2-digit work week.
- *3. Factory identification mark shall be marked (Z : Taiwan, Y : Thailand).
- *4. Model No.: H11A1, H11A2, H11A3, H11A4, H11A5

TAPING DIMENSIONS

Tape and reel packaging (TYPE I):



Tape and reel packaging (TYPE II):



Description	Symbol	Dimensions in mm (inches)
Tape wide	W	16 ± 0.3 (.63)
Pitch of sprocket holes	P ₀	4 ± 0.1 (.15)
Distance of compartment	F	7.5 ± 0.1 (.295)
Distance of compartment to compartment	P ₁	2 ± 0.1 (.079)
Distance of compartment to compartment	P ₂	12 ± 0.1 (.472)

ABSOLUTE MAXIMUM RATING

(Ta = 25°C)

PARAMETER		SYMBOL	RATING	UNIT
INPUT	Forward Current	I _F	60	mA
	Reverse Voltage	V _R	6	V
	Power Dissipation	P	100	mW
OUTPUT	Collector - Emitter Voltage	V _{CEO}	30	V
	Emitter - Collector Voltage	V _{ECO}	7	V
	Collector - Base Voltage	V _{CBO}	70	V
	Collector Current	I _C	150	mA
	Collector Power Dissipation	P _C	150	mW
Total Power Dissipation		P _{tot}	250	mW
*1	Isolation Voltage	V _{iso}	5,000	V _{rms}
Operating Temperature		T _{opr}	-55 ~ +100	°C
Storage Temperature		T _{stg}	-55 ~ +150	°C
*2	Soldering Temperature	T _{sol}	260	°C

*1. AC For 1 Minute, R.H. = 40 ~ 60%

Isolation voltage shall be measured using the following method.

- (1) Short between anode and cathode on the primary side and between collector, emitter and base on the secondary side.
- (2) The isolation voltage tester with zero-cross circuit shall be used.
- (3) The waveform of applied voltage shall be a sine wave.

*2. For 10 Seconds

ELECTRICAL - OPTICAL CHARACTERISTICS

(Ta = 25°C)

PARAMETER		SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS	
INPUT	Forward Voltage	V _F	—	1.2	1.5	V	I _F =10mA	
	Reverse Current	I _R	—	—	10	μA	V _R =6V	
	Terminal Capacitance	C _t	—	18	—	pF	V=0, f=1MHz	
OUTPUT	Collector Dark Current	I _{CEO}	—	—	50	nA	V _{CE} =10V, I _F =0	
	Collector-Emitter Breakdown Voltage	BV _{CEO}	30	—	—	V	I _C =0.1mA I _F =0	
	Emitter-Collector Breakdown Voltage	BV _{ECO}	7	—	—	V	I _E =10μA I _F =0	
	Collector-Base Breakdown Voltage	BV _{CBO}	70	—	—	V	I _C =0.1mA I _F =0	
	Collector-Emitter Capacitance	C _{CE}	—	12	—	pF	V=0V, f=1MHz	
	Collector-Base Capacitance	C _{CB}	—	17	—	pF	V _{CB} =0V, f=1MHz	
	Emitter-Base Capacitance	C _{EB}	—	25	—	pF	V _{EB} =0V, f=1MHz	
TRANSFER CHARACTERISTICS	* Current Transfer Ratio	H11A1	CTR	50	—	—	%	I _F =10mA V _{CE} =10V
		H11A2		20	—	—		
		H11A3		20	—	—		
		H11A4		10	—	—		
		H11A5		30	—	—		
	Collector-Emitter Saturation Voltage	V _{CE(sat)}	—	0.15	0.4	V	I _F =10mA I _C =0.5mA	
	Isolation Resistance	R _{iso}	100	—	—	GΩ	DC500V 40 ~ 60% R.H.	
	Floating Capacitance	C _f	—	0.3	—	pF	V=0, f=1MHz	
	Response Time (Rise)	t _r	—	2.8	—	μs	V _{CC} =10V, I _F =10mA R _L =100Ω	
	Response Time (Fall)	t _f	—	4.5	—	μs		

$$* CTR = \frac{I_C}{I_F} \times 100\%$$

CHARACTERISTICS CURVES

Fig.1 Forward Current vs. Ambient Temperature

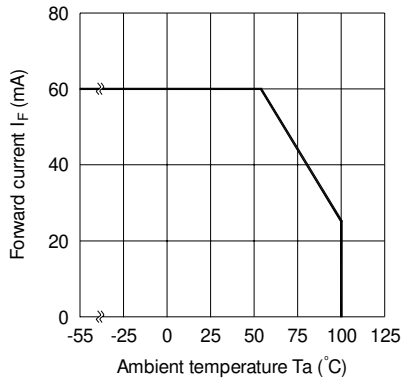


Fig.2 Collector Power Dissipation vs. Ambient Temperature

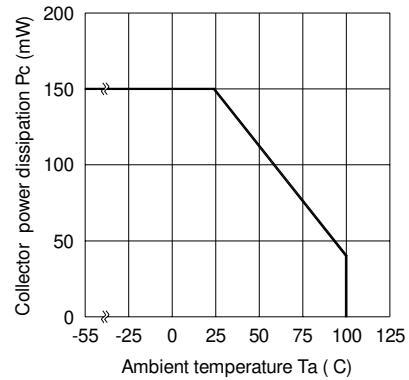


Fig.3 Collector-emitter saturation Voltage vs. Forward current

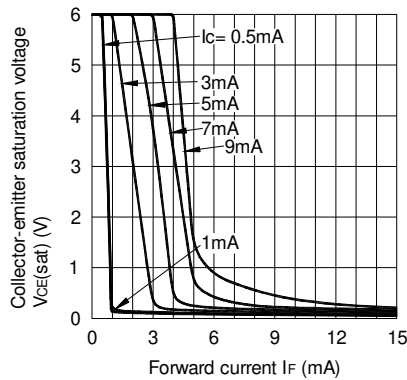


Fig.4 Turn-On Switching Times

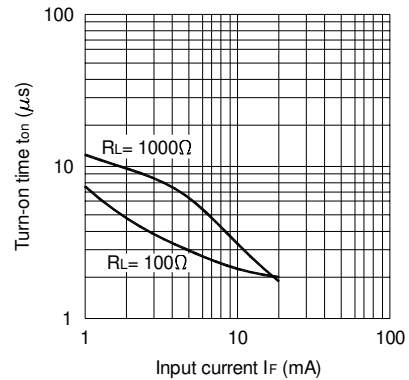


Fig.5 Current Transfer Ratio vs. Forward Current

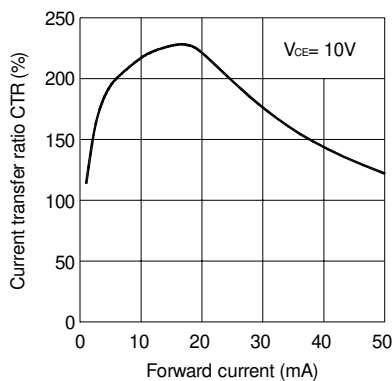
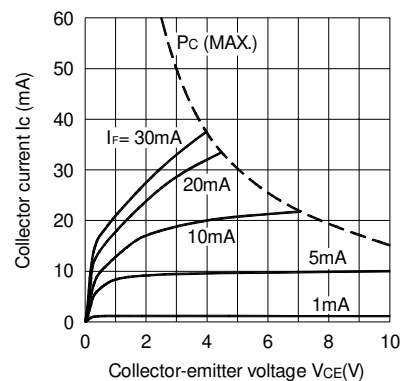


Fig.6 Collector Current vs. Collector-emitter Voltage



CHARACTERISTICS CURVES

Fig.7 Rise and Fall Times

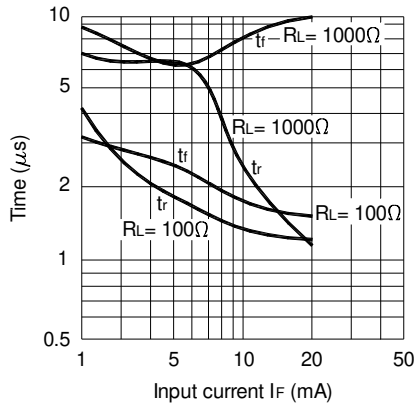
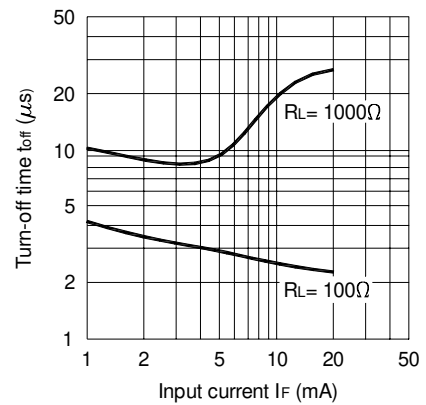
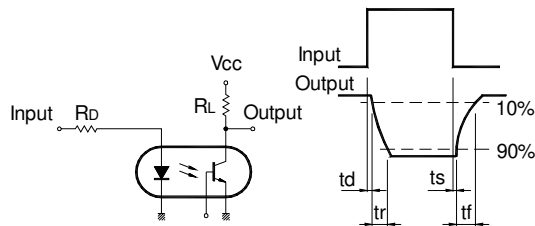


Fig.8 Turn-off Switching Times



Test Circuit for Response Time



Test Circuit for Frequency Response

