

H11GXF Series

Rev.A.1.1

DESCRIPTION:

The H11GXF series combine an AlGaAs infrared emitting diode as the emitter which is optically coupled to a monolithic silicon zero-cross photo triac to drive a power triac in a plastic DIP5 package with different lead forming options. The products are widely used in solenoid/valve controls, lighting controls, motor controls, temperature controls, static AC power switches, solid state relays, interfacing microprocessors to 265 V_{AC} peripherals.

MAIN FEATURES:

High isolation 5000 Vrms

DC input with triac output

Operating temperature range - 40°C to 85 °C

REACH & RoHS compliance

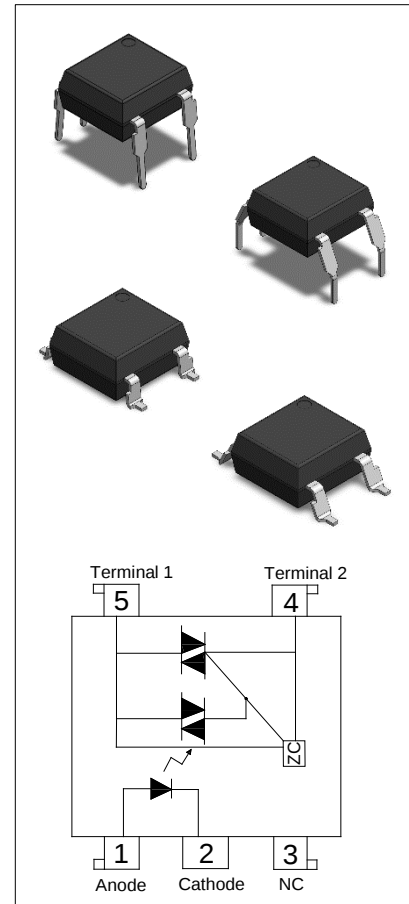
MSL class 2

HBM: H3A; MM: M4

CQC approved

VDE approved

UL approved



ABSOLUTE MAXIMUM RATINGS (Temperature=25°C)

Parameter			Symbol	Value	Unit
Input	Forward Current		I _F	60	mA
	Peak Forward Current		I _{FP}	1 ^①	A
	Reverse Voltage		V _R	6	V
Output	Repetitive peak off-state voltage		V _{DRM}	600	V
	Repetitive peak off-state voltage		V _{RRM}	600	V
	Critical rate of rise of on-state current		di/dt	70	A/μs
	On-state RMS Current	H11G0F	I _{T(RMS)}	0.3	A
		H11G1F		0.6	
	Non repetitive surge peak on-state current (full cycle , t _p =20ms)	H11G0F	I _{TSM}	3	A
		H11G1F		6	
Isolation Voltage			V _{iso}	5000 ^②	Vrms

Operating Temperature	T_{opr}	-40~85	°C
Storage Temperature	T_{stg}	-40~125	°C
Soldering Temperature	T_{sol}	260 ^③	°C

NOTE1 : 100μs pulse, 100Hz frequency

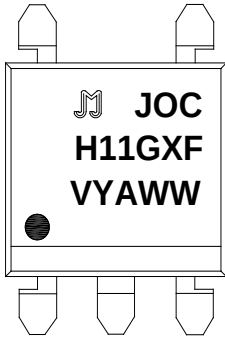
NOTE2 : AC for 1 minute, R.H.=40~60%

NOTE3 : For 10 seconds

ELECTRICAL CHARACTERISTICS (Temperature=25°C)

Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit
Input	Forward Voltage	V_F	$I_F=20mA$	-	1.25	1.4	V
	Reverse Current	I_R	$V_R=6V$	-	-	1	μA
Output	Peak Off-state Current, Either Direction	I_{DRM}	V_{DRM} / V_{RRM} =600V, $I_F=0$	-	-	10	μA
		I_{RRM}		-	-	10	
	Peak On-state Voltage, Either Direction	V_{TM}	$I_{TM}=I_{TM}$ Rated	-	-	2	V
	Critical Rate of Rise of Off-state Voltage	dV/dt	$V_D=400V$, Gate Open $I_F=0$, $T_J=85^{\circ}C$	1000	-	-	V/μs
	Critical Rate of Rise of Commutating Voltage	(dV/dt) _c	(dI/dt) _c =3A/ms, $T_J=85^{\circ}C$	20	-	-	V/μs
Transfer Characteristics	LED Trigger Current	I_{FT}	Terminal Voltage=6V $R_L=100\Omega$	-	-	10	mA
	Holding Current	I_H	$V_D=6V$	-	-	25	mA
	Isolation Resistance	R_{ISO}	DC500V 40~60%R.H.	10^{12}	10^{14}	-	Ω
	Response Time	t_{on}	$V_D=6V$, $R_L=100\Omega$, $I_F=20mA$	-	20	100	μs
Zero Crossing	Inhibit Voltage	V_{IH}	$I_F=10mA$	-	-	20	V
	Leakage in Inhibit State	I_{OFF2}	$I_F=10mA$, $V_{OFF}=600V$	-	-	500	μA

ORDERING AND MARKING INFORMATION

MARKING INFORMATION					
		JOC : Company Abbr. H11GXF : Part Number & Rank V : VDE Option Y : Fiscal Year A : Manufacturing Code WW : Work Week			
ORDERING INFORMATION					
H11GXF(Y)(Z)-GV					
H11GXF – Part Number & Rank (X=0/1) Y – Lead Form Option (None/M/SL/SLM) Z – Tape and Reel Option (T1/T2) G – Green Option (G or None) V – VDE Option (V or None)					
Packing Quantity					
Option	Quantity	Quantity – Inner box	Quantity –Outer box		
None/M	65 Units/Tube	32 Tubes/Inner box	10 Inner box/Outer box =20.8k Units		
SL(T1/T2)	1000 Units/Reel	3 Reels/Inner box	5 Inner box/Outer box =15k Units		
SLM(T1/T2)	1000 Units/Reel	2 Reels/Inner box	5 Inner box/Outer box =10k Units		

Characteristics Curves

FIG.1: Forward Current vs. Ambient Temperature

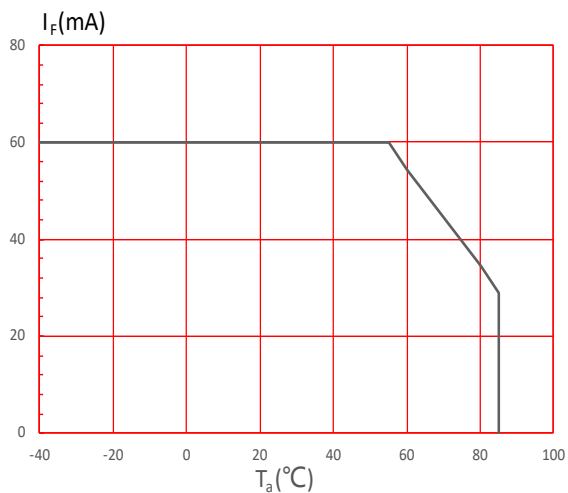


FIG.3: Forward Current vs. Forward Voltage

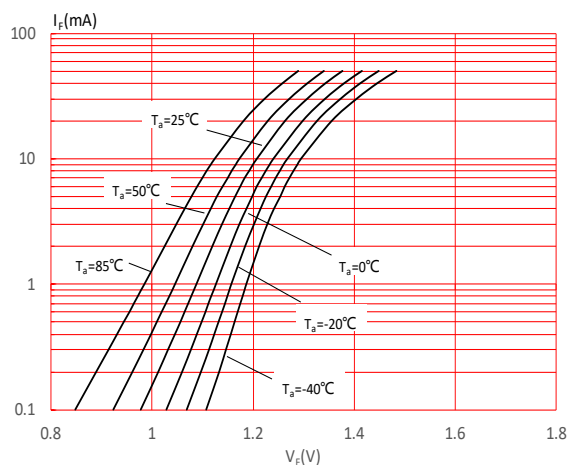


FIG.5: Off-state Terminal Current vs Off-state Terminal Voltage

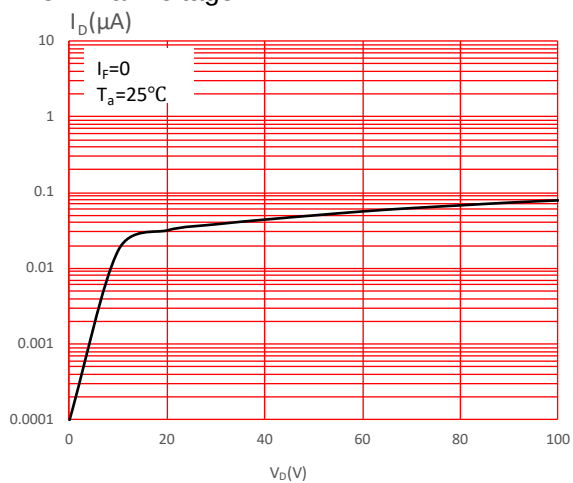


FIG.2: On-state Terminal Current vs. Ambient Temperature

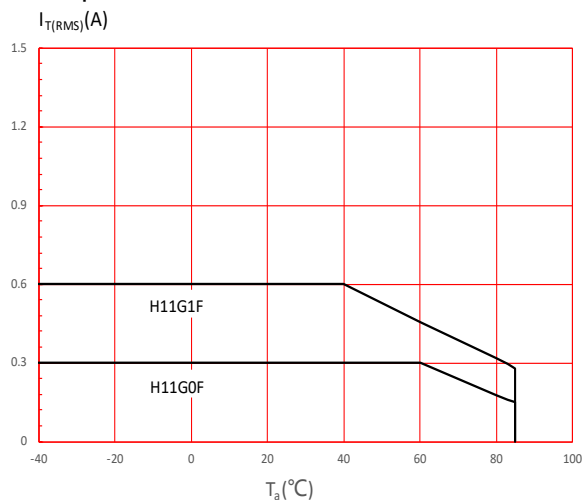


FIG.4: Forward Voltage vs. Ambient Temperature

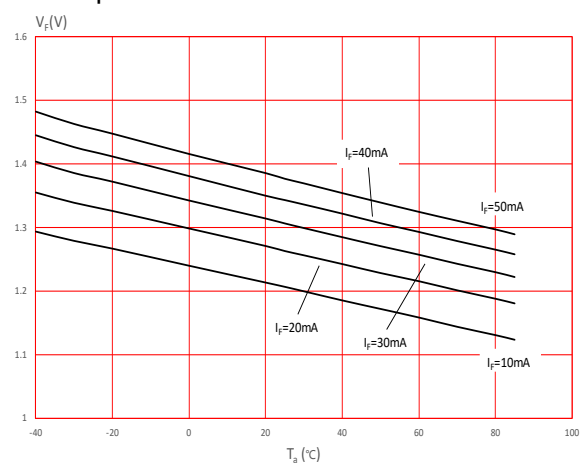


FIG.6: Normalized Trigger Current vs. Ambient Temperature

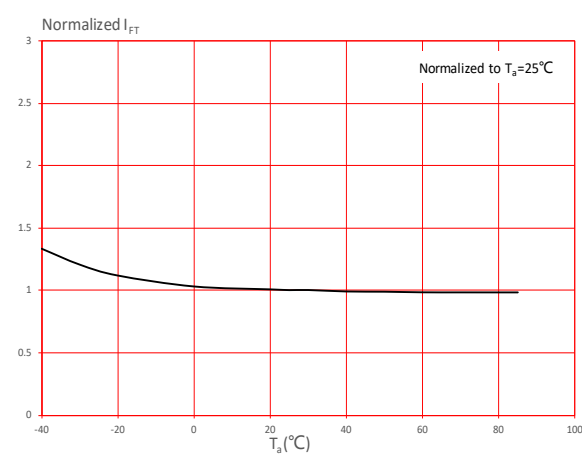


FIG.7: On-state Terminal Voltage vs. Ambient Temperature

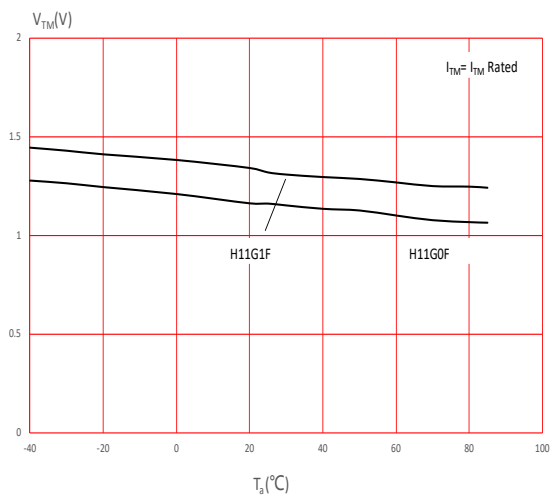


FIG.8: Normalized Holding Current vs. Ambient Temperature

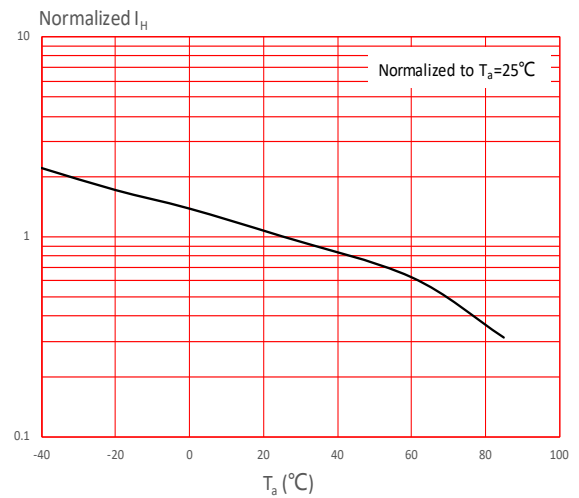


FIG.9: Turn On Time vs. Forward Current

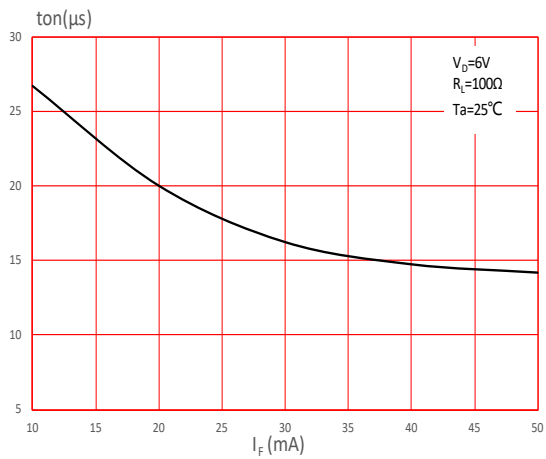
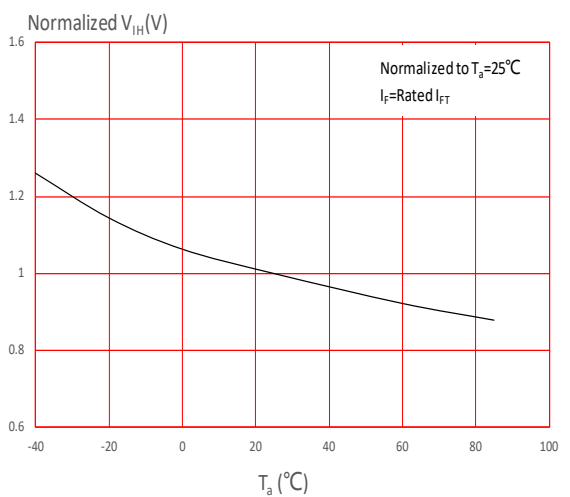


FIG.10: Normalized Inhibit Voltage vs. Ambient Temperature



TEST CIRCUITS

FIG.11: Test Circuits of Turn On Time

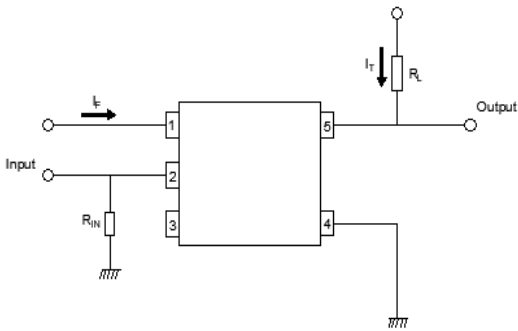
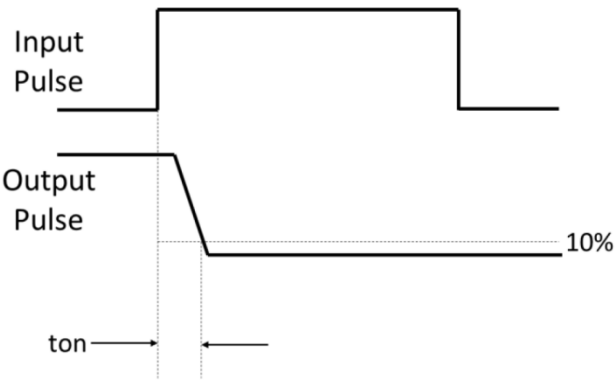
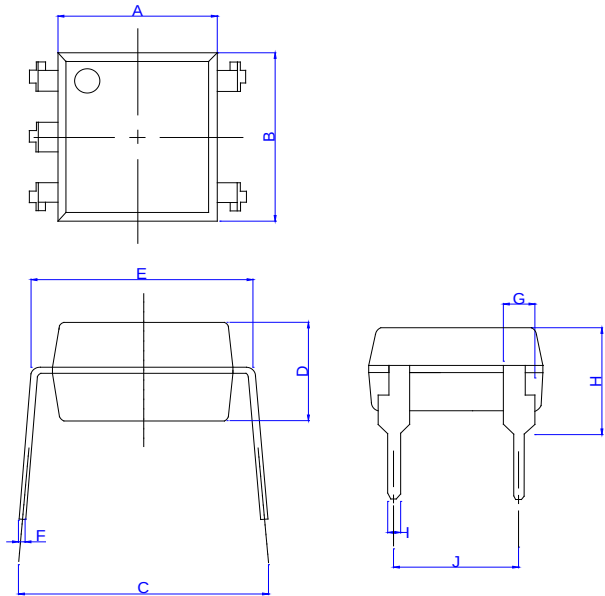


FIG.12: Waveforms of Turn On Time



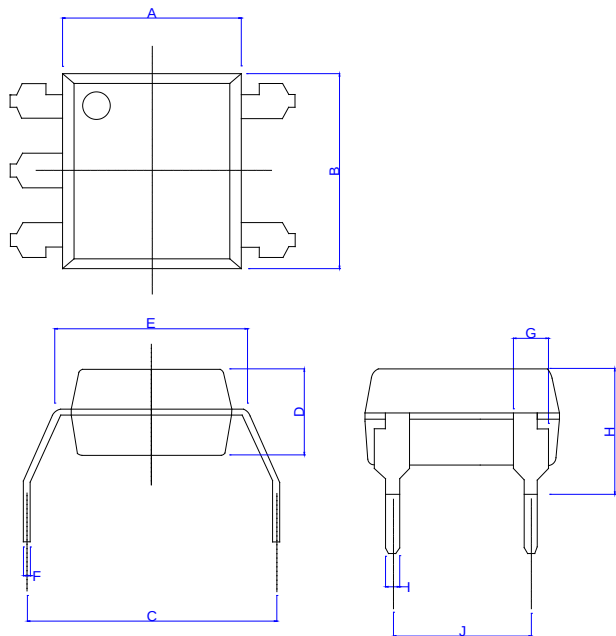
Package Dimension (Unit: mm)

Standard DIP Type:



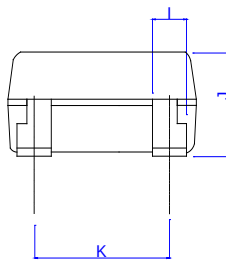
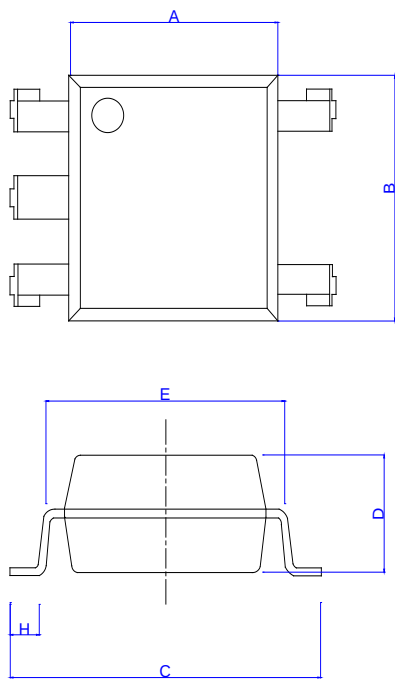
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	6.20		6.80	0.245		0.269
B	6.82		7.42	0.270		0.293
C	7.62		9.50	0.301		0.375
D	3.30		3.70	0.130		0.146
E	7.32		7.92	0.289		0.313
F		0.25			0.010	
G			1.30			0.051
H	4.20		4.80	0.166		0.190
I		0.50			0.020	
J		5.08			0.201	

Option M Type:



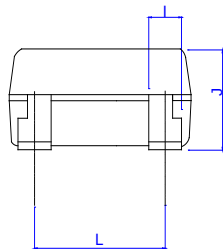
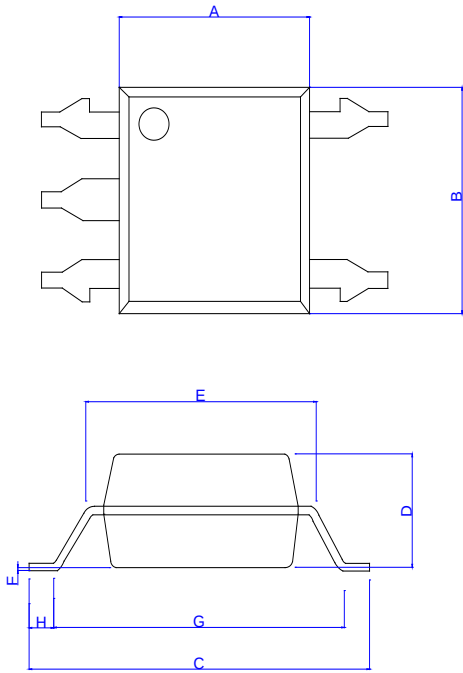
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	6.20		6.80	0.245		0.269
B	6.82		7.42	0.270		0.293
C	9.86		10.46	0.390		0.413
D	3.30		3.70	0.130		0.146
E	7.32		7.92	0.289		0.313
F		0.25			0.010	
G			1.30			0.051
H	4.20		4.80	0.166		0.190
I		0.50			0.020	
J		5.08			0.201	

Option SL Type:



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	6.20		6.80	0.245		0.269
B	6.82		7.42	0.270		0.293
C	9.85		10.45	0.389		0.413
D	3.20		3.80	0.126		0.150
E	7.32		7.92	0.289		0.313
H	0.60			0.024		
I			1.30			0.051
J	3.35		3.95	0.132		0.156
K		5.08			0.201	

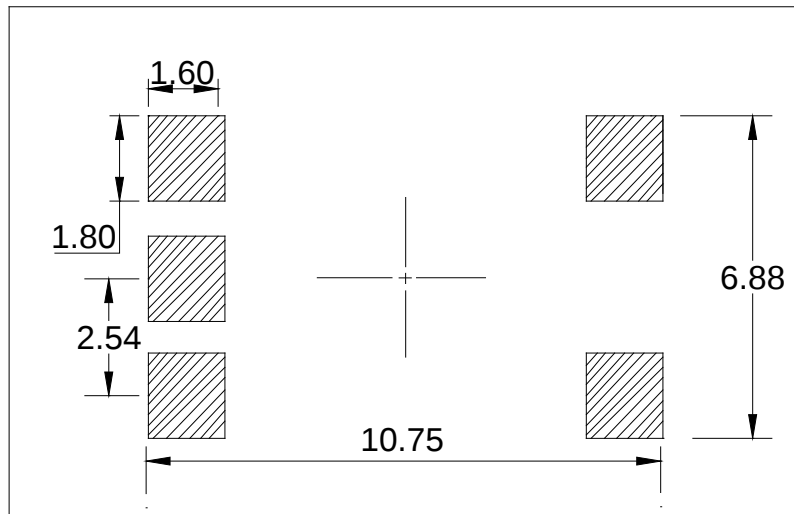
Option SLM Type:



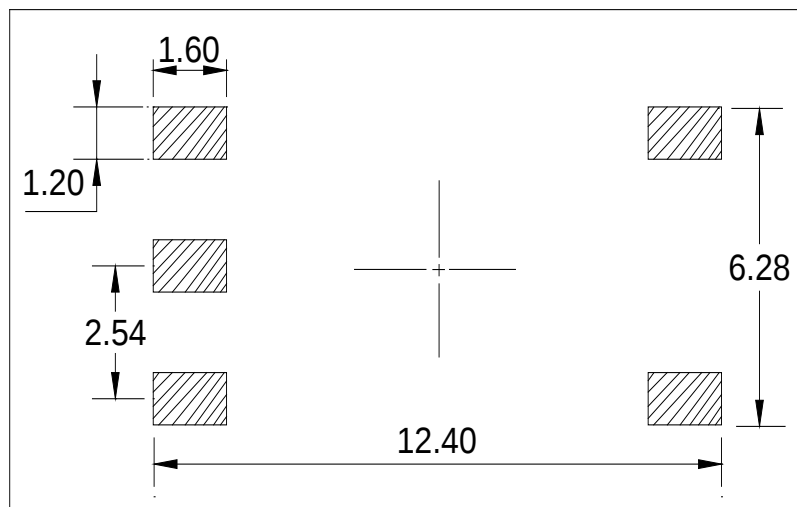
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	6.20		6.80	0.245		0.269
B	6.82		7.42	0.270		0.293
C	11.50		12.10	0.455		0.478
D	3.20		3.80	0.126		0.150
E	7.32		7.92	0.289		0.313
F		0.25			0.010	
G	10.20		10.80	0.403		0.427
H	0.60			0.024		
I			1.30			0.051
J	3.35		3.95	0.132		0.156
L		5.08			0.201	

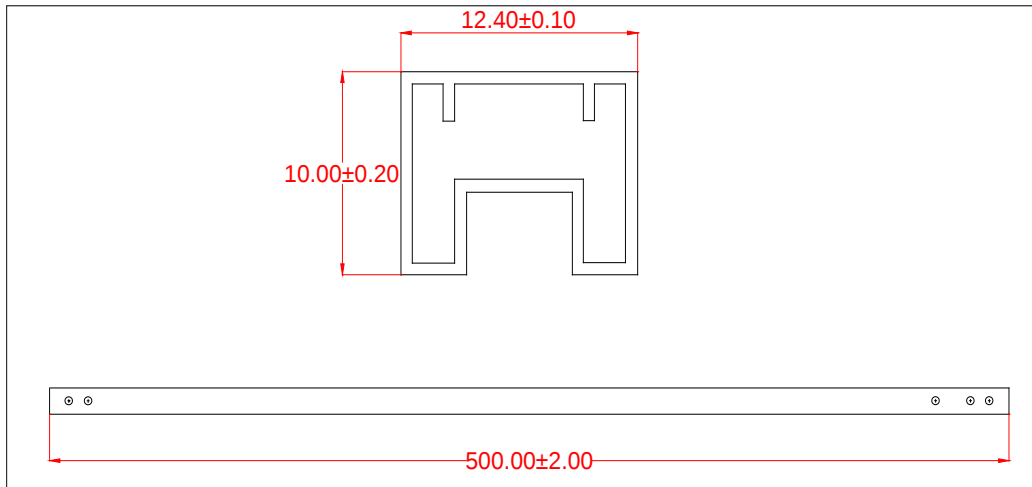
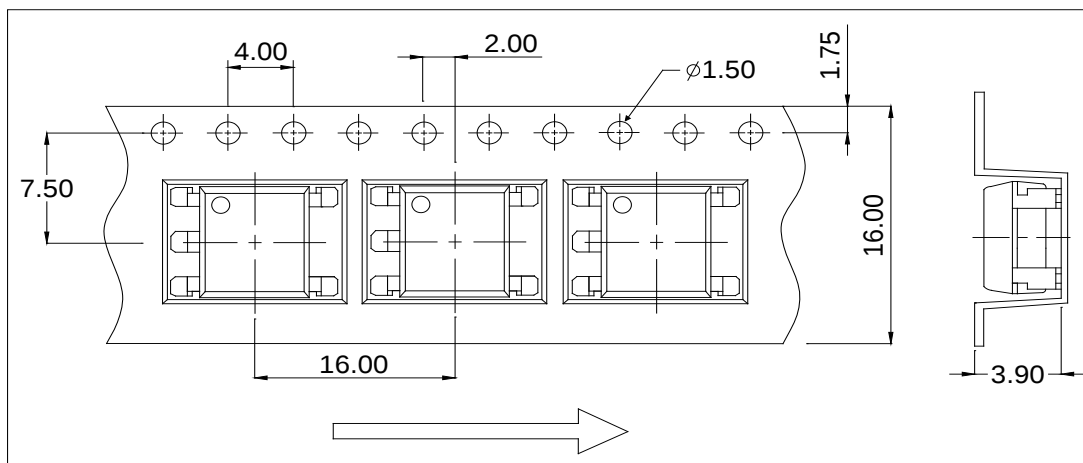
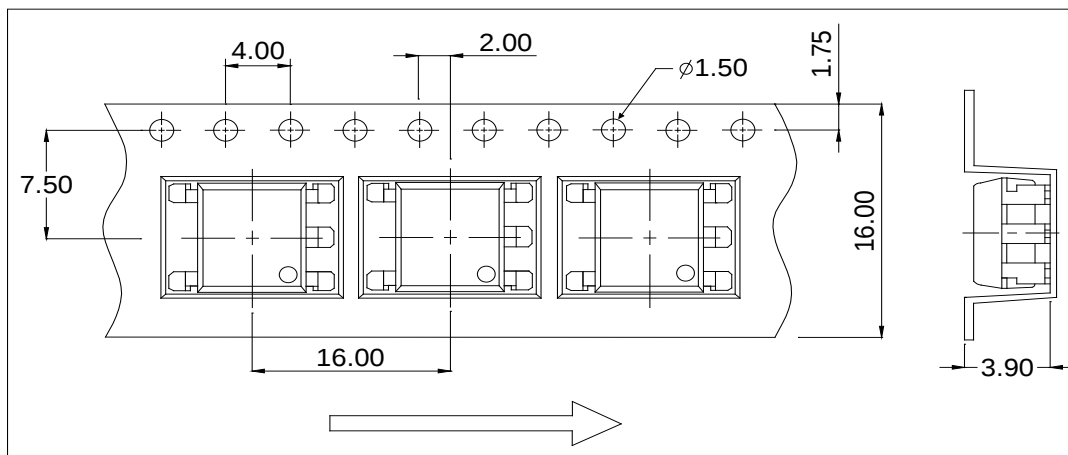
RECOMMENDED SOLDER MASK (Dimensions in mm unless otherwise stated)

SL:

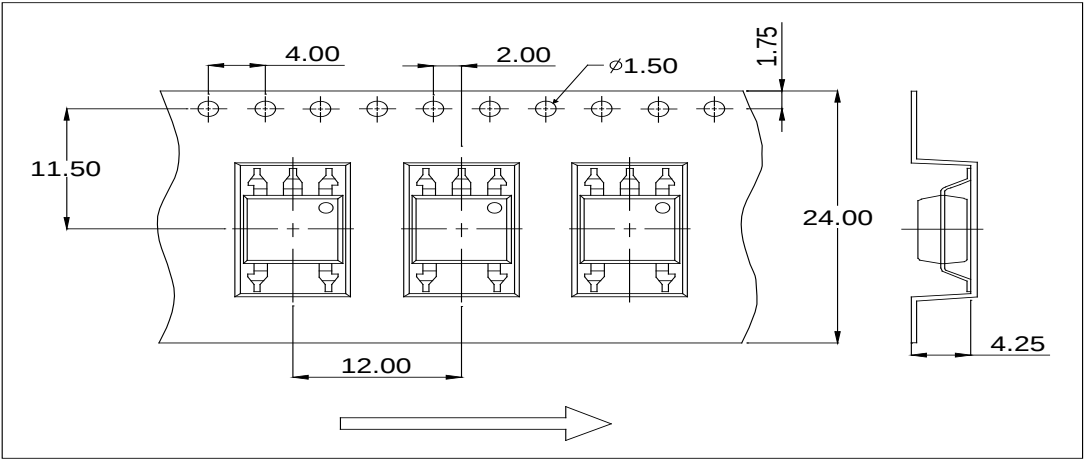


SLM:

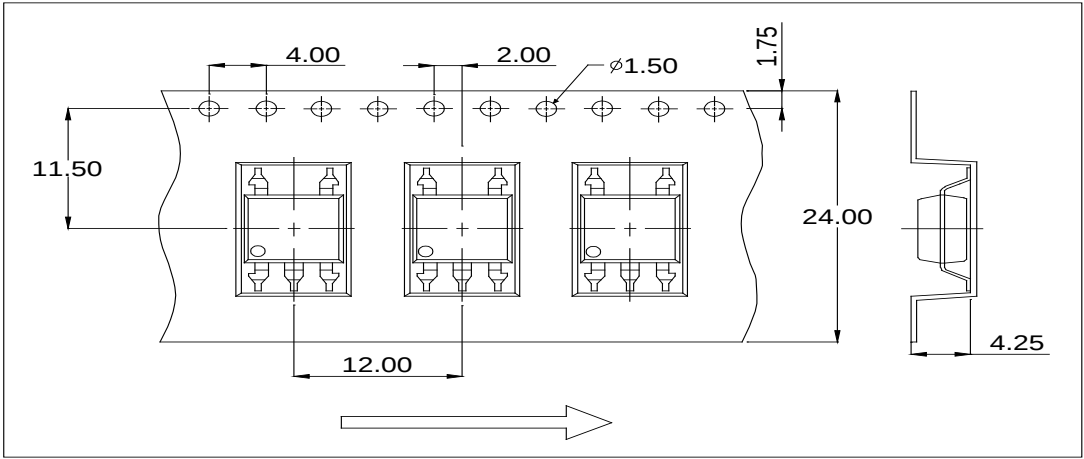


TUBE SPECIFICATIONS (Dimensions in mm unless otherwise stated)**Standard DIP/M****CARRIER TAPE SPECIFICATIONS (Dimensions in mm unless otherwise stated)****Option SL(T1)****Option SL(T2)**

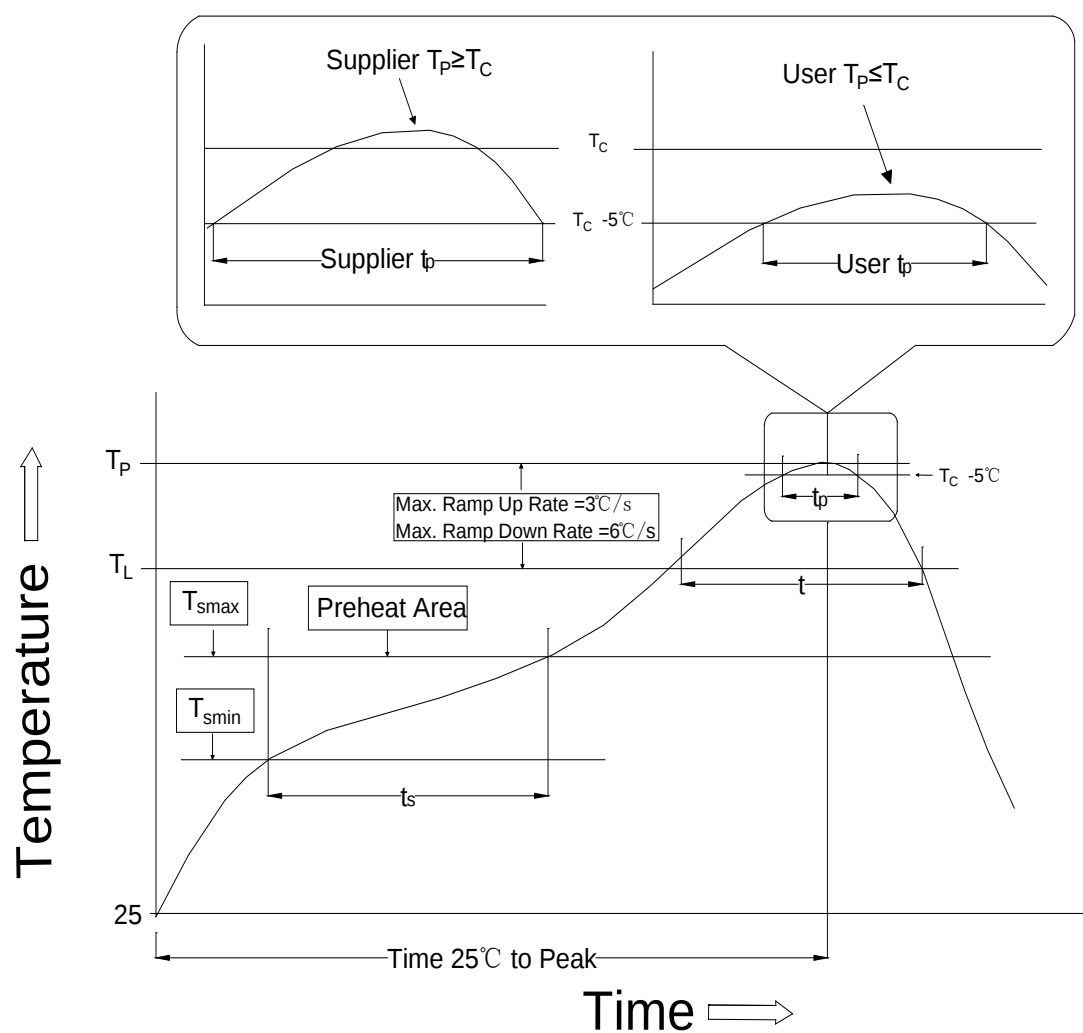
Option SLM(T1)



Option SLM(T2)

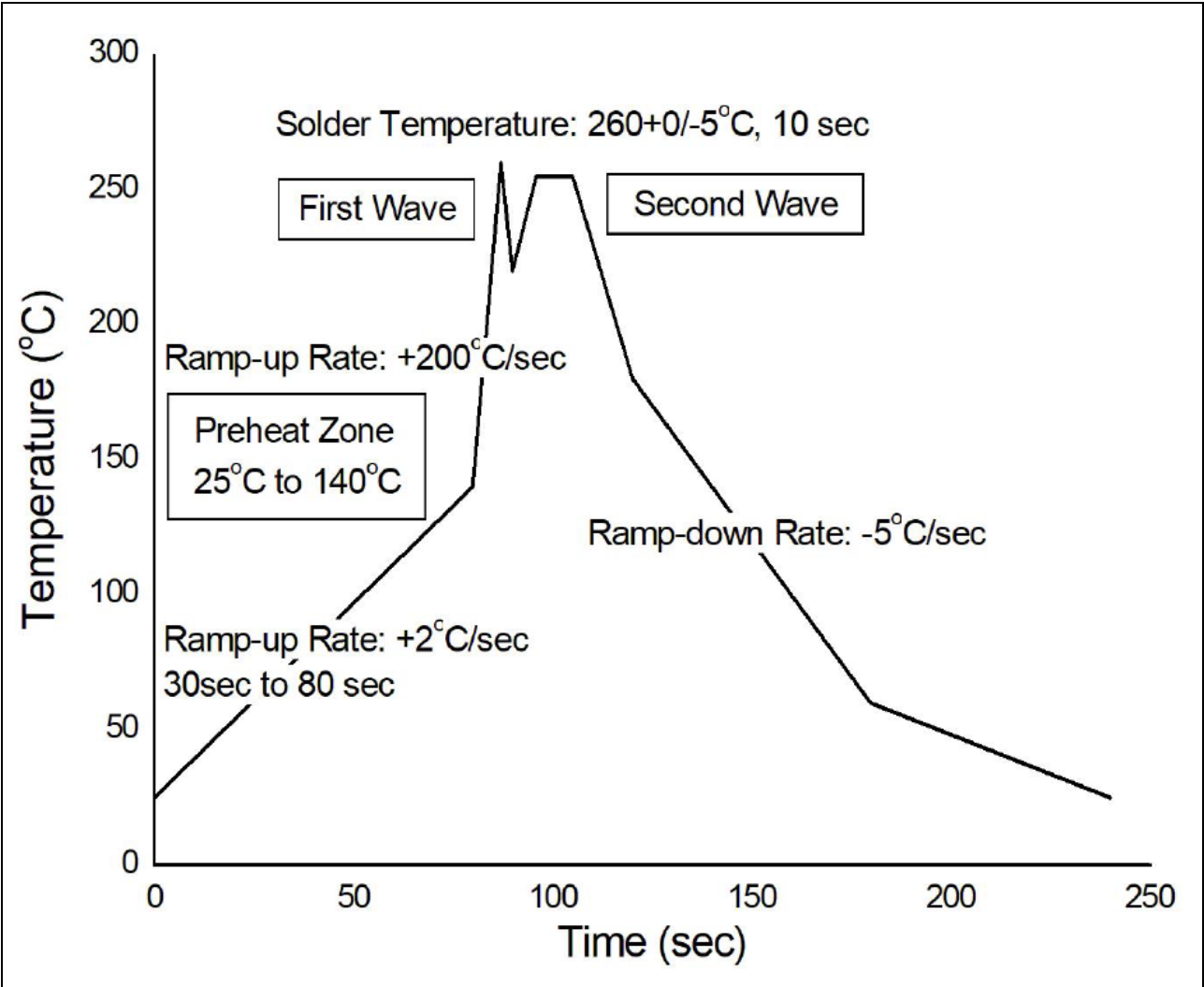


REFLOW INFORMATION



Temperature Min. (T_{smin})	150°C
Temperature Max. (T_{smax})	200°C
Time (t_s) from (T_{smin} to T_{smax})	60-120 seconds
Ramp-up Rate (t_L to t_P)	3°C/second max.
Liquidus Temperature (T_L)	217°C
Time (t_L) Maintained Above (T_L)	60-120 seconds
Peak Body Package Temperature	260°C+0°C/-5°C
Time (t_P) within 5°C of 260°C	10 seconds
Ramp-down Rate (T_P to T_L)	6°C/second max.

WAVE SOLDERING



HAND SOLDERING BY SOLDERING IRON	
Soldering Temperature	360±5°C
Soldering Time	3s max.

Document Revision History

Date	Revision	Changes
Feb.21, 2025	A.1.0	Last update
Nov.7, 2025	A.1.1	Add (dV/dt)c

Information furnished in this document is believed to be accurate and reliable. However, Jiangsu JieJie Microelectronics Co., Ltd. assumes no responsibility for the consequences of use without consideration for such information nor use beyond it. Information mentioned in this document is subject to change without notice, apart from that when an agreement is signed, Jiangsu JieJie complies with the agreement.

Products and information provided in this document have no infringement of patents. Jiangsu JieJie assumes no responsibility for any infringement of other rights of third parties which may result from the use of such products and information. This document supersedes and replaces all information previously supplied.



is a registered trademark of Jiangsu JieJie Microelectronics Co., Ltd.

Copyright © 2025 Jiangsu JieJie Microelectronics Co., Ltd. All rights reserved.