

Features

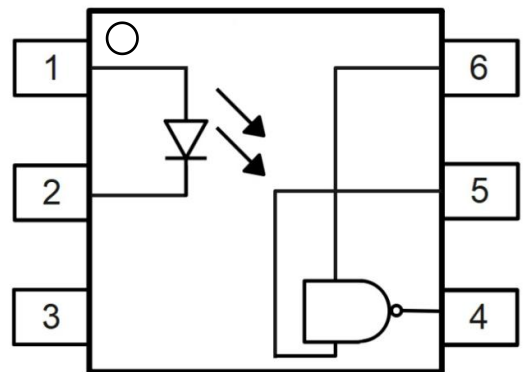
- High isolation 5000 V_{RMS}
- DC input with Schmitt trigger output
- Operating temperature range - 40 °C to 100 °C
- REACH & RoHS compliance
- MSL class 1
- Regulatory Approvals
 - UL - UL1577
 - VDE - EN60747-5-5(VDE0884-5)
 - CQC - GB4943.1

Applications

- Logic to logic isolator
- Programmable current level sensor
- Line receiver – eliminate noise and transient problems
- AC to TTL conversion – square wave shaping
- Digital programming of power supplies
- Interfaces computers with peripherals

Description

The H11LXX series combine an AlGaAs infrared emitting diode as the emitter which is optically coupled to a Schmitt Trigger detector in a plastic DIP6 package with different lead forming options.






Truth Table

Input	Output
H	L
L	H



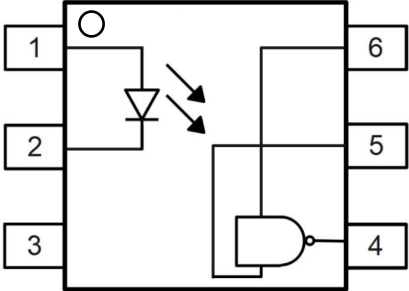
ORDERING INFORMATION

Outline	Part Number	Package	Marking	Packing	Packing Size	Quantity
	H11LX0-E	DIP6	H11LX /YYWW A	Tube	500mm	50
	H11LX1-E	DIP6-M		Tube	500mm	50
	H11LX5-E	DIP6-SL		Reel	13 "	1000

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PIN CONFIGURATION AND FUNCTIONS

	Pin	Name
	1	Anode
	2	Cathode
	3	NC
	4	V _{OUT}
	5	GND
	6	V _{CC}

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit	Note
INPUT				
Forward Current	I _F	60	mA	
Peak Transient Current	I _{F(trans)}	1	A	1
Reverse Voltage	V _R	6	V	
Input Power Dissipation	P _I	120	mW	
OUTPUT				
Supply Voltage	V _{CC}	3 to 16	V	
Output Voltage	V _O	0 to 16	V	
Output Current	I _O	50	mA	
Output Power Dissipation	P _O	150	mW	
COMMON				
Total Power Dissipation	P _{tot}	250	mW	
Isolation Voltage	V _{iso}	5000	V _{rms}	2
Operating Temperature	T _{opr}	-40~100	°C	
Storage Temperature	T _{stg}	-55~125	°C	
Soldering Temperature	T _{sol}	260	°C	3

Note 1. ≤1μs P.W,300pps

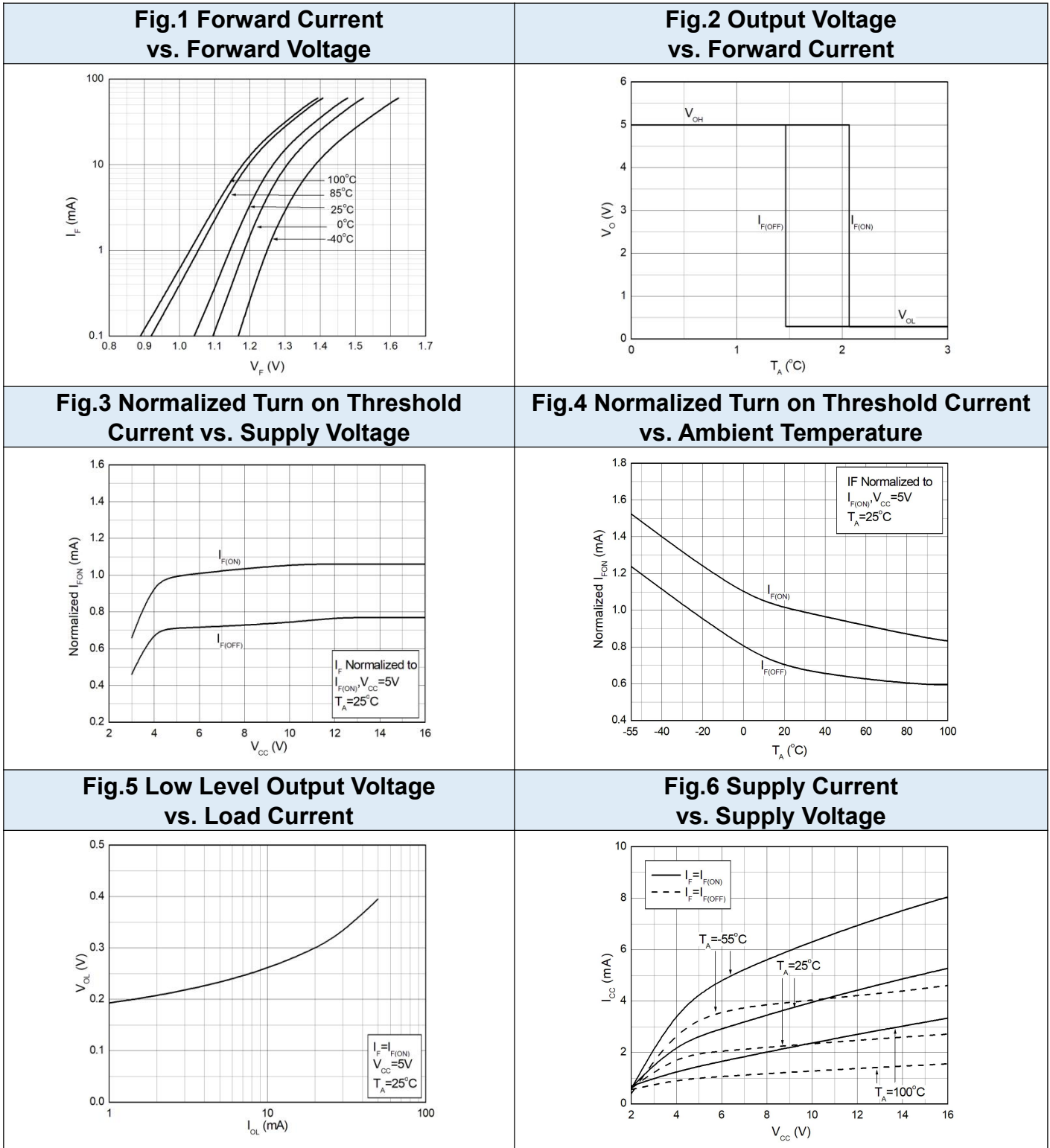
Note 2. AC For 1 Minute, R.H. = 40 ~ 60%

Note 3. For 10 seconds

ELECTRICAL OPTICAL CHARACTERISTICS (T_a=25°)

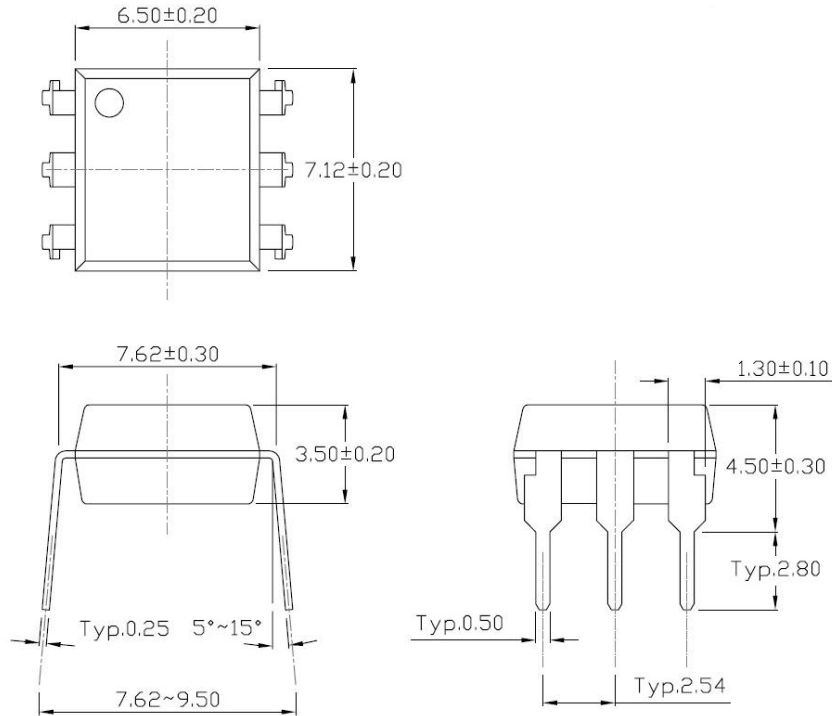
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition	
INPUT							
Forward Voltage	V _F	-	1.24	1.5	V	I _F =10mA	
Reverse Current	I _R	-	-	10	μA	V _R =5V	
Input Capacitance	C _{in}	-	60	-	pF	V=0, f=1MHz	
OUTPUT							
Operation Voltage Range	V _{CC}	3	-	15	V		
Off State Supply Current	I _{CC(off)}	-	1.6	5	mA	I _F =0mA, V _{CC} =5V	
On State Supply Current	I _{CC(on)}	-	1.6	5	mA	I _F =10mA, V _{CC} =5V	
High Level Output Current	I _{OH}	-	-	100	μA	I _F =10mA, V _{CC} =V _O =15V	
TRANSFER CHARACTERISTICS (T _a =-40 to 85°C)							
Low Level Output Voltage	V _{OL}	-	0.35	0.6	V	V _{CC} =5.5V, I _F =5mA, V _E =2.0V, I _{CL} =13mA	
Turn On Threshold Current	H11L1	I _{Fon}	-	-	1.6	mA	V _{CC} =5V, R _L =270Ω
	H11L2		-	-	10		
	H11L3		-	-	5		
Turn Off Threshold Current	I _{Foff}	-	1	-	mA	V _{CC} =5V, R _L =270Ω	
Turn On Time	t _{on}	-	-	4	μs	V _{CC} =5V, I _F =I _{Fon} , R _L =270Ω	
Fall Time	t _f	-	0.1	-	μs		
Turn Off Time	t _{off}	-	-	4	μs		
Rise Time	t _r	-	0.1	-	μs		
Data Rate		-	1	-	MHz		
Isolation Resistance	R _{iso}	10 ¹²	10 ¹⁴	-	Ω	DC500V, 40 ~ 60% R.H.	
Floating Capacitance	C _{IO}	-	0.3	1	pF	V=0, f=1MHz	

CHARACTERISTIC CURVES

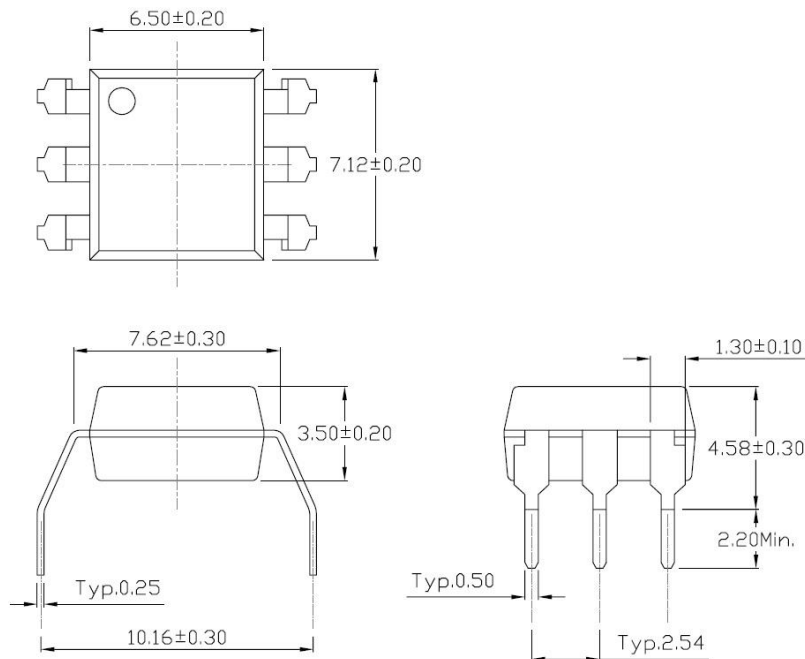


PACKAGE DIMENSIONS

Standard DIP – Through Hole (DIP Type)



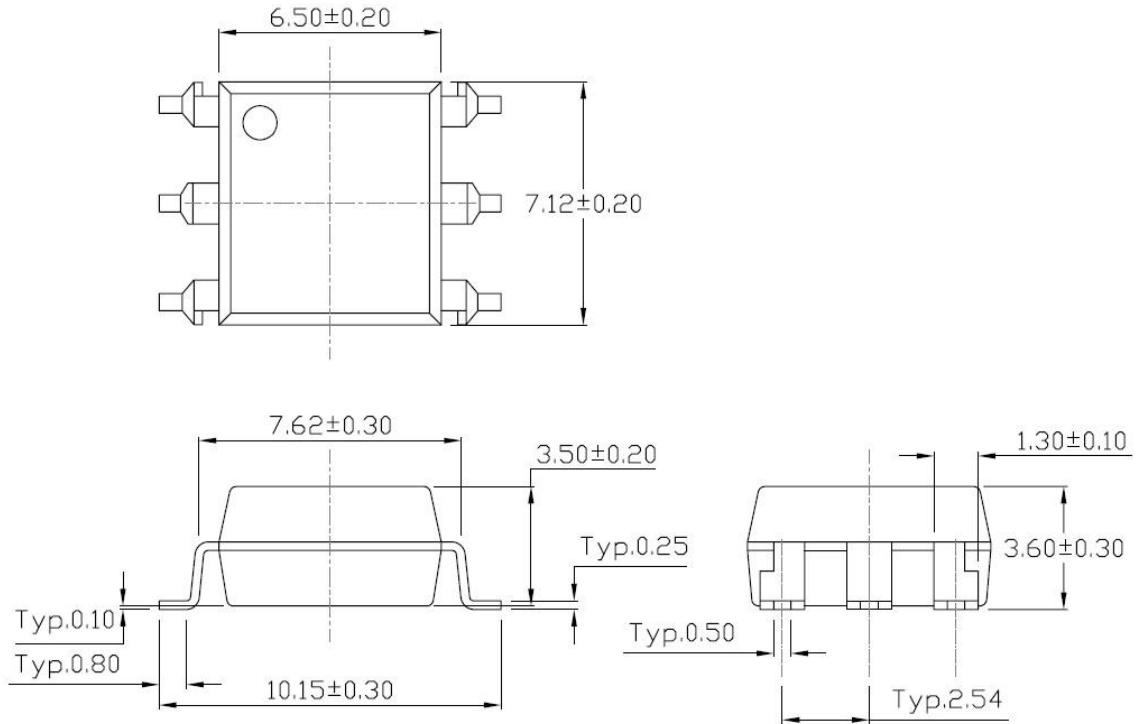
Gullwing (400mil) Lead Forming – Through Hole (M Type)



● Dimensions in mm unless otherwise stated

PACKAGE DIMENSIONS

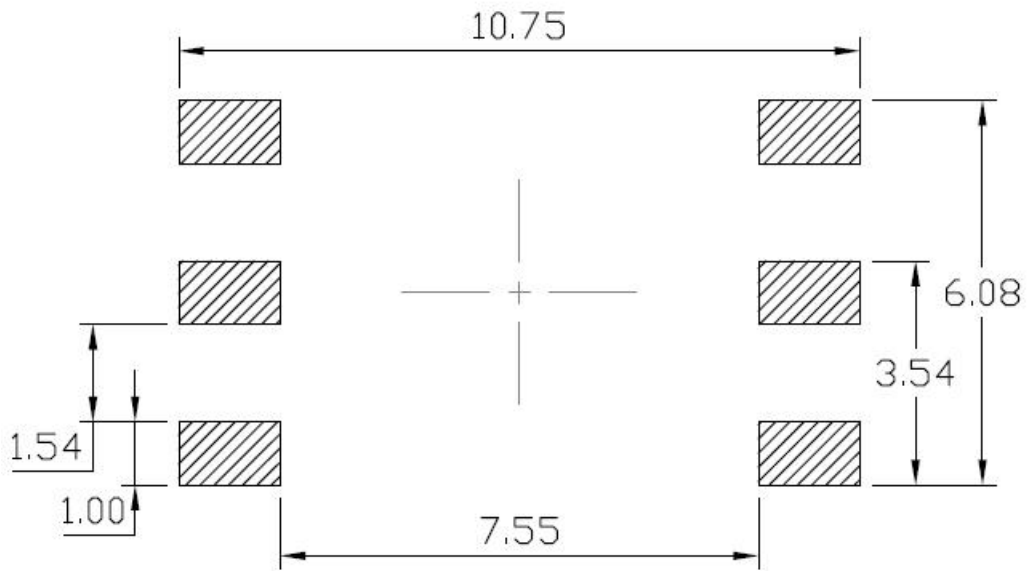
Surface Mount (Low Profile) Lead Forming (SL Type)



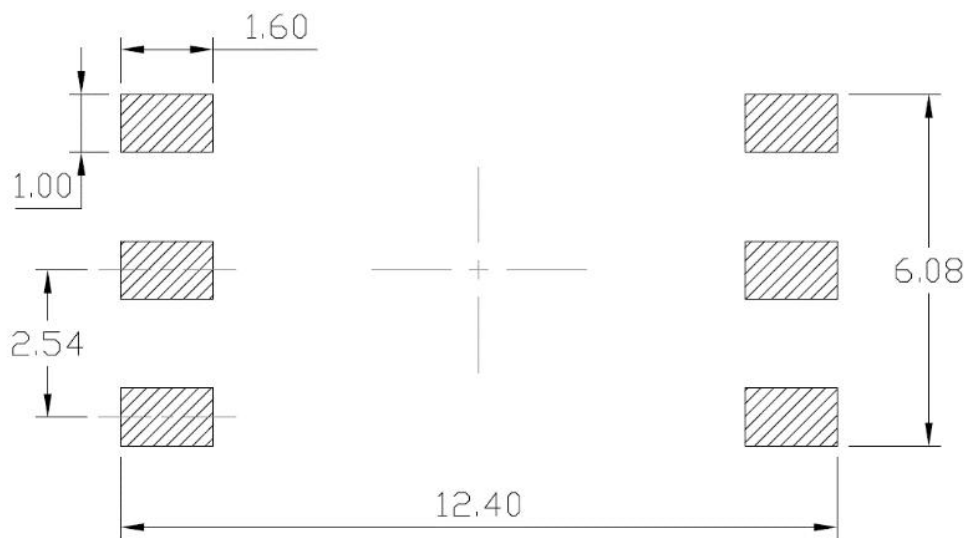
- **Dimensions in mm unless otherwise stated**

RECOMMENDED SOLDER MASK

Surface Mount (Low Profile) Lead Forming



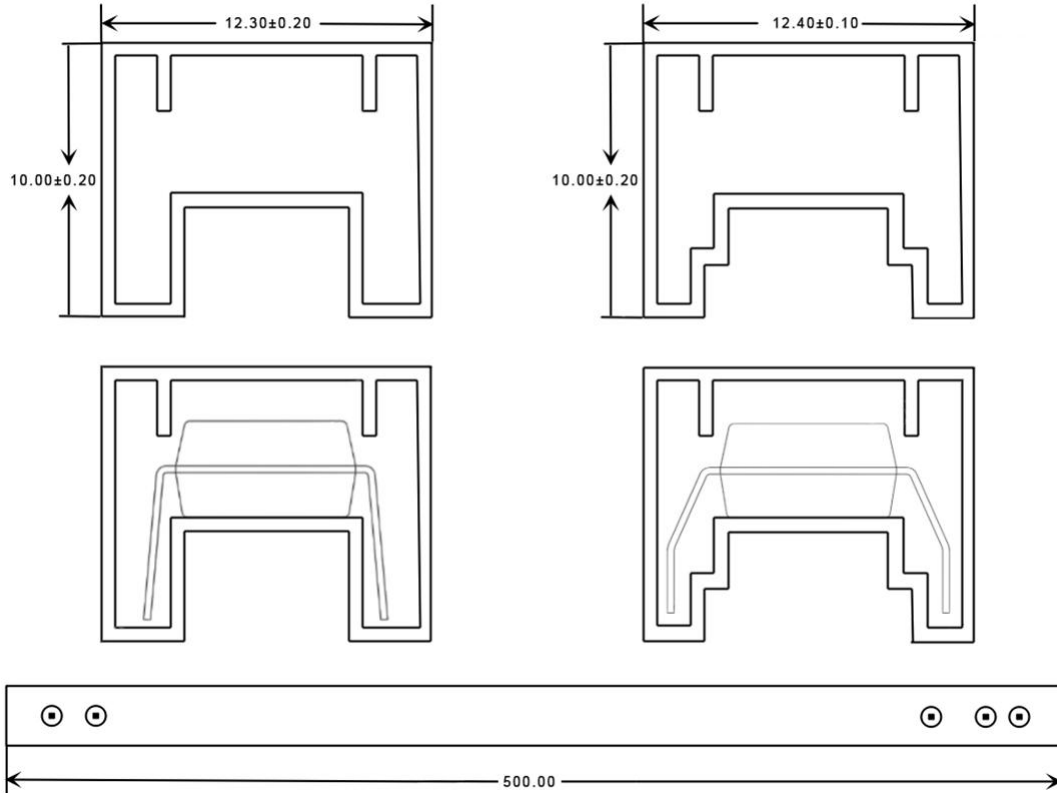
Surface Mount (Gullwing) Lead Forming



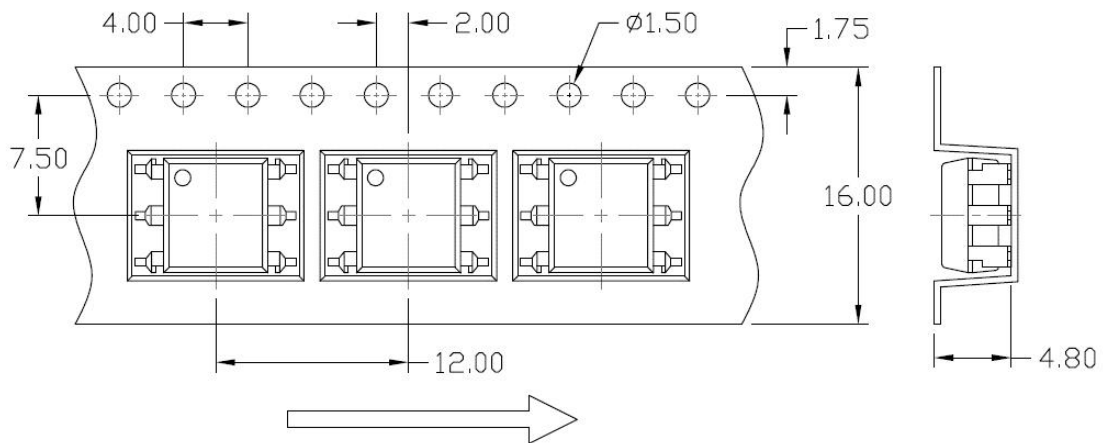
- Dimensions in mm unless otherwise stated

CARRIER TAPE SPECIFICATIONS

Option DIP6 & DIP6-M

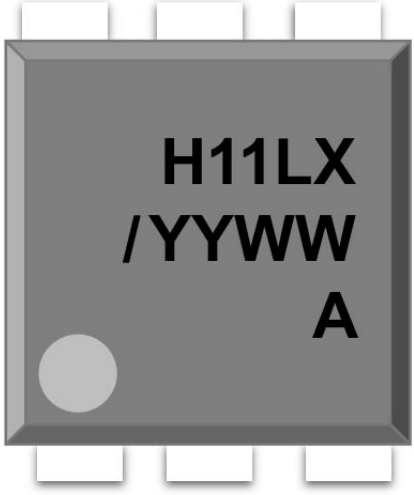


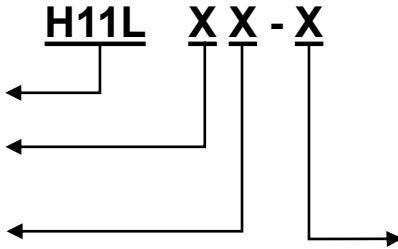
Option DIP6-SL



- Dimensions in mm unless otherwise stated

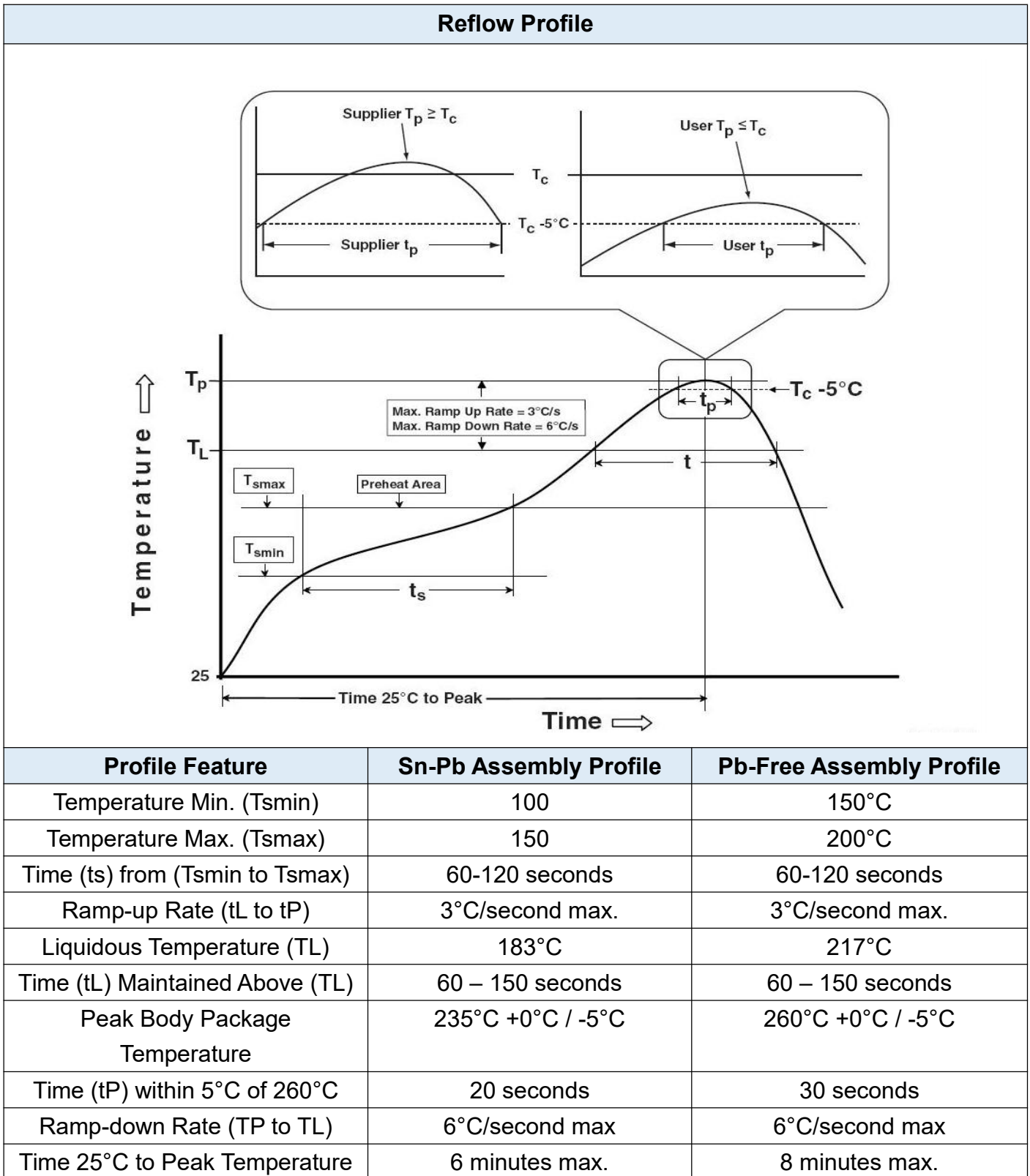
ORDERING AND MARKING INFORMATION

Marking Information	
	<p> H11L : Part Number X : CTR Rank / : ISOMICRON YY : Fiscal Year WW : Work Week A : Manufacturing Code </p>

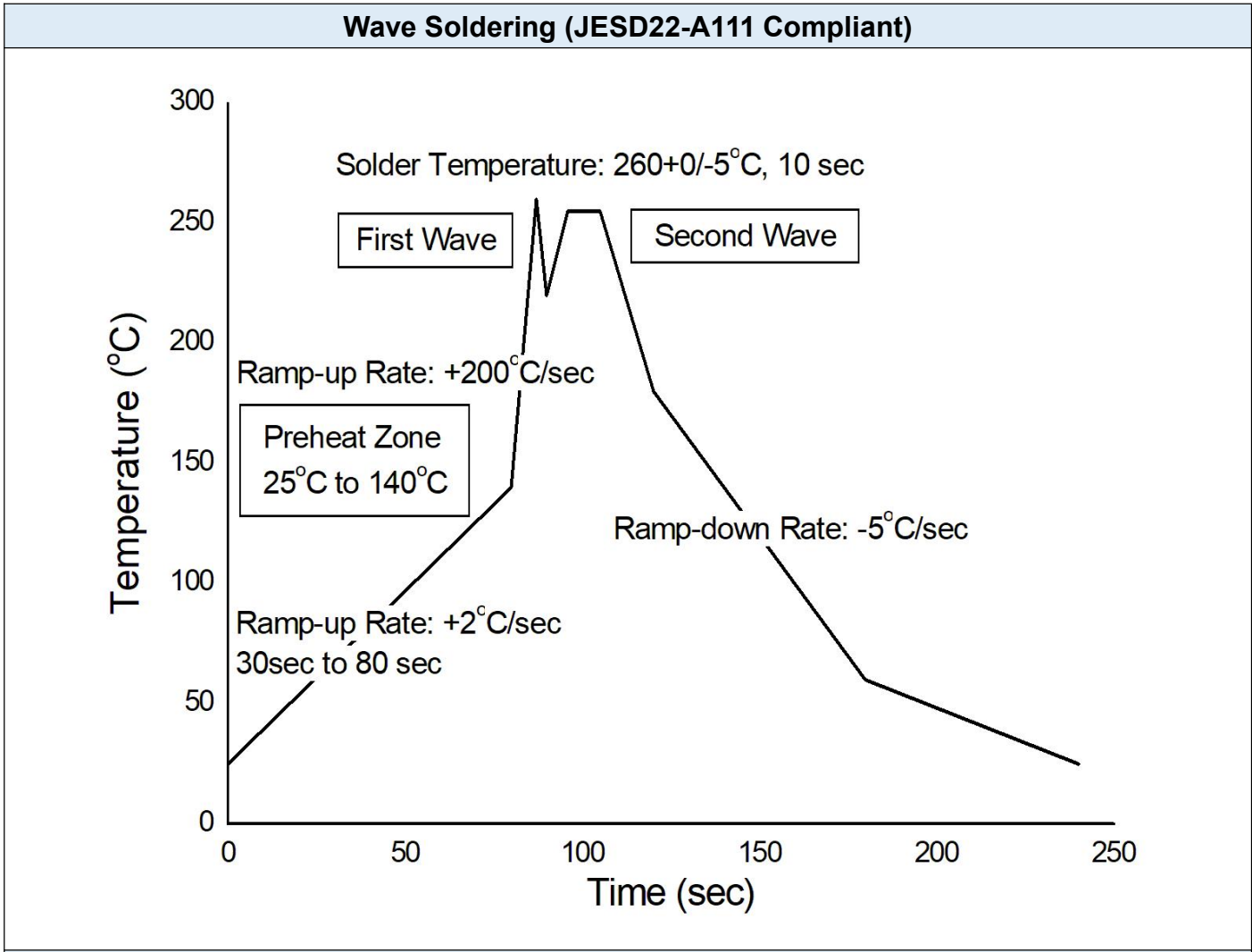
Order Code		
<p>Part Number</p> <p>Rank: 1/2/3</p> <p>Lead Forming: 0: DIP-Standard 1: DIP-M 5: SM-SL</p>	<p>H11L X X - X</p> 	<p>Halogen Free: E: Halogen-free, Lead-free Z: Halogen, Lead-free</p>

Packing Quantity			
Option	Quantity	Quantity – Inner box	Quantity – Outer box
DIP-Standard	50 Units/Tube	20 Tubes/Inner box	6 Inner box/Outer box = 6k Units
DIP-M	50 Units/Tube	20 Tubes/Inner box	6 Inner box/Outer box = 6k Units
SM-SL	1000 Units/Reel	2 Reels/Inner box	5 Inner box/Outer box = 10k Units

REFLOW INFORMATION



TEMPERATURE PROFILE OF SOLDERING



Hand Soldering By Soldering Iron	
Soldering Temperature	380+0/-5°C
Soldering Time	3 sec max.

- One time soldering is recommended for all soldering method.
- Do not solder more than three times for IR reflow soldering.

DISCLAIMER

- ISOMICRON is continually improving the quality, reliability, function and design. ISOMICRON reserves the right to make changes without further notices.
- The characteristic curves shown in this datasheet are representing typical performance which are not guaranteed.
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- This product is not intended to be used for military, aircraft, automotive, medical, life sustaining or lifesaving applications or any other application which can result in human injury or death.
- Please contact ISOMICRON sales agent for special application request.
- Immerge unit's body in solder paste is not recommended.
- Parameters provided in datasheets may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated in each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify ISOMICRON's terms and conditions of purchase, including but not limited to the warranty expressed therein.
- Discoloration might be occurred on the package surface after soldering, reflow or long-time use. It neither impacts the performance nor reliability.