

DESCRIPTION:

The products are 2MBd high-speed opto-couplers. The device is a small-outline coupler suitable for surface-mount assembly. It consists of a high-output-power infrared LED optically coupled to a high-speed photodiode-transistor chip. It is housed in a plastic DIP8 package with different lead forming options package and guarantees a creepage distance of ≥ 5 mm, a clearance of ≥ 5 mm and an insulation thickness of ≥ 0.4 mm. Therefore, it meets the reinforced insulation class requirements of international safety standards. The products are widely used in programmable controllers, industrial inverters and switching power supplies.

MAIN FEATURES

High isolation 5000 VRMS

High speed – 2MBd typical

Operating temperature range -40°C to 110°C

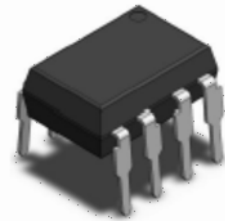
REACH & RoHS compliance

HBM: H3A; MM: M4; CDM: C3

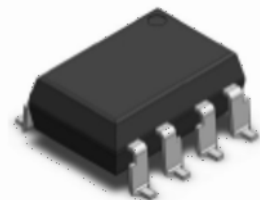
CQC approved

VDE approved

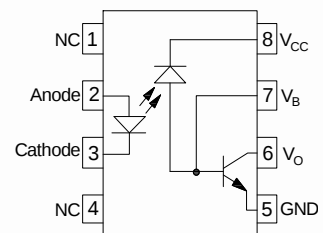
UL approved



JOCHA22B-D8P



JOCHA22B-D8S



Truth Table

LED	Output
ON	L
OFF	H

ABSOLUTE MAXIMUM RATINGS (Temperature=25°C)

Parameter		Symbol	Value	Unit
Input	Forward Current	I_F	50	mA
	Peak Forward Current	I_{FP}	1 ⁷	A
	Reverse Voltage	V_R	6	V
	Input Power Dissipation	P_D	100	mW

Output	Supply Voltage	V_{CC}	35	V
	Output Voltage	V_O	20	V
	Output Current	I_O	8	mA
	Output Power Dissipation	P_O	100	mW
Total Power Dissipation		P_{tot}	200	mW
Isolation Voltage		V_{iso}	5000 ⁸	Vrms
Operating Temperature		T_{opr}	-40~110	
Junction Temperature		T_j	125	
Storage Temperature		T_{stg}	-55~125	
Soldering Temperature		T_{sol}	260	

NOTE1 100 μ s pulse, 100Hz frequency

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

ELECTRICAL CHARACTERISTICS (Temperature=25°C)

Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit
Input	Forward Voltage	V_F	$I_F=10mA$	-	1.35	1.6	V
	Reverse Current	I_R	$V_R=6V$	-	-	1	μA

Switching Characteristics	LED Trigger Current	I_{FT}	$I_O=0.75mA$, $V_O \geq 0.8V$	-	-	5	mA
	Propagation Delay Time to Logic Low	TPHL	$I_F=0$ 10mA, $R_L=20k\Omega$, $C_L=100pF$	30	150	400	ns
			$I_F=0$ 10mA, $R_L=20k\Omega$, $C_L=10pF$	-	70	-	ns
	Propagation Delay Time to Logic High	TPLH	$I_F=10$ 0mA, $R_L=20k\Omega$, $C_L=100pF$	150	350	550	ns
			$I_F=10$ 0mA, $R_L=20k\Omega$, $C_L=10pF$	-	110	-	ns
	Common Mode Transient Immunity at Logic High	CM_H	$I_F=0mA$, $V_{CM}=1500V_{pp}$, $R_L=20k\Omega$	± 20	± 25	-	kV/ μs
	Common Mode Transient Immunity at Logic Low	CM_L	$I_F=10mA$, $V_{CM}=1500V_{pp}$, $R_L=20k\Omega$	± 20	± 25	-	kV/ μs

ORDERING INFORMATION

_____ J OC H A 2 2 B -D8P/S /

Characteristics Curves

FIG.1: Forward Current vs. Forward Voltage

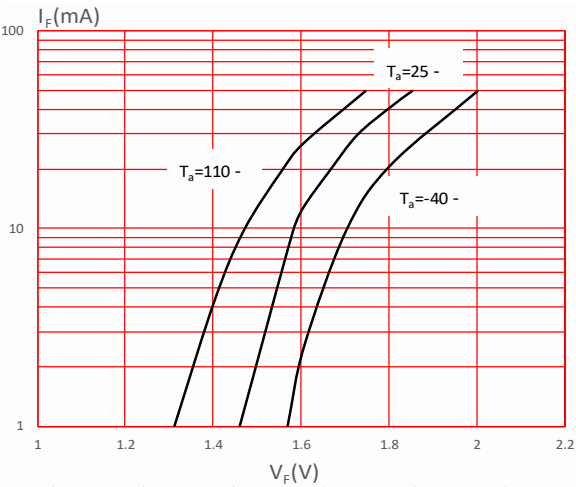


FIG.3: Output Current vs. Forward Current

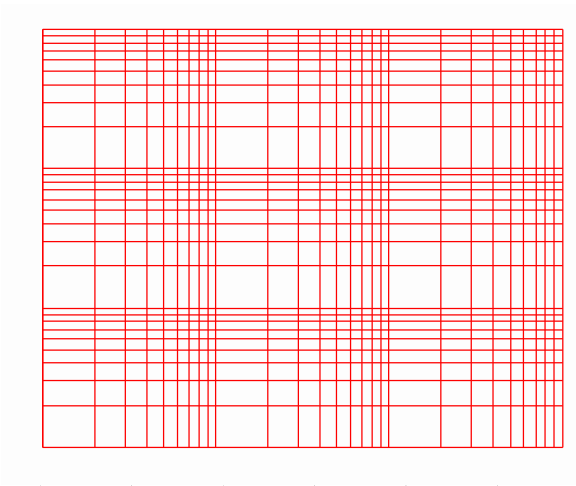


FIG.2: High Level Output Current vs. Ambient Temperature

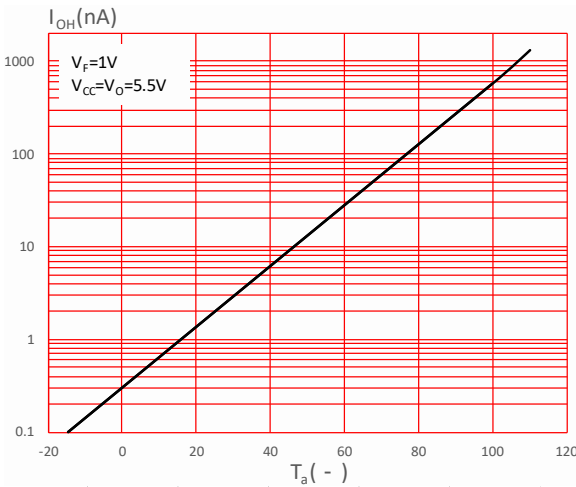


FIG.4: Threshold Input Current vs. Ambient Temperature

FIG.7: Propagation Delay vs. Load Resistance

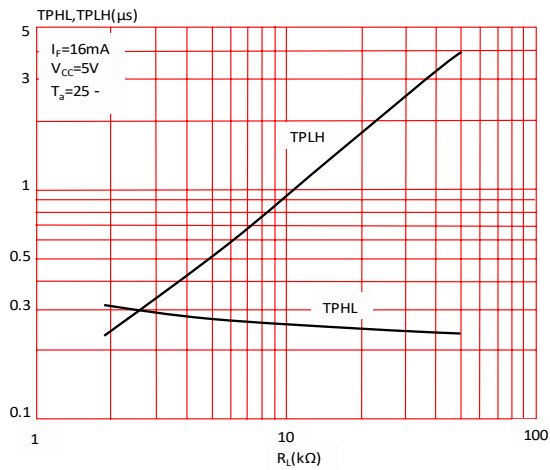
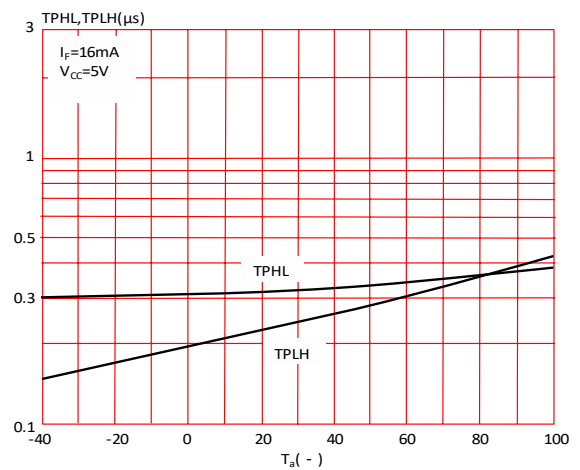


FIG.8: Propagation Delay vs. Ambient Temperature



TEST CIRCUITS

Fig.9: Switching Time Test Circuit and Waveform

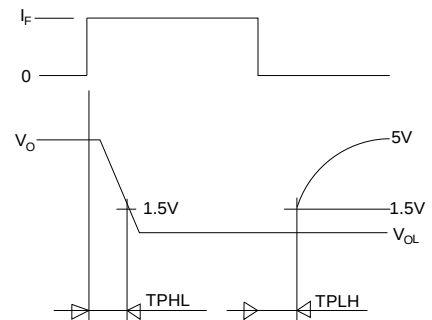
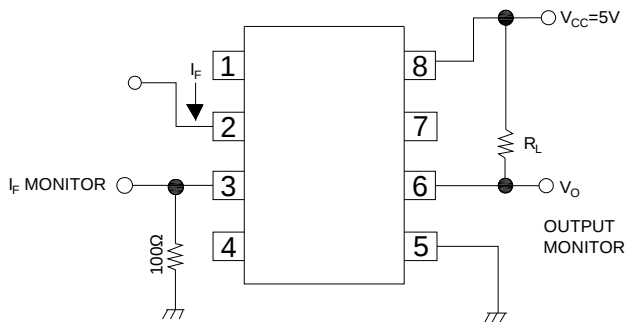
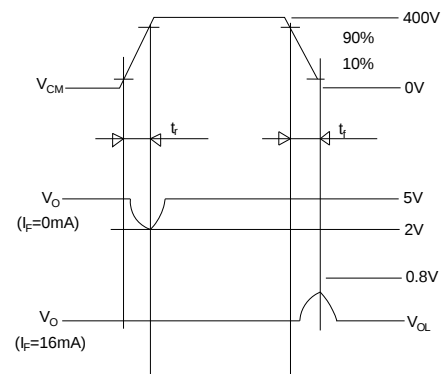
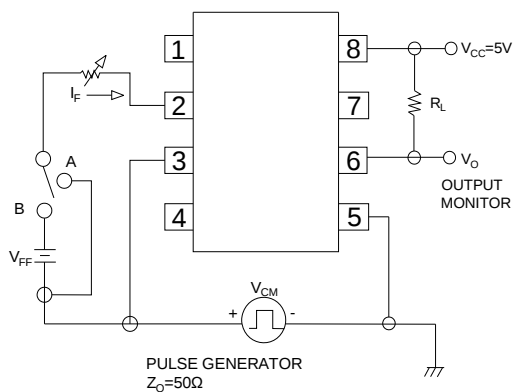
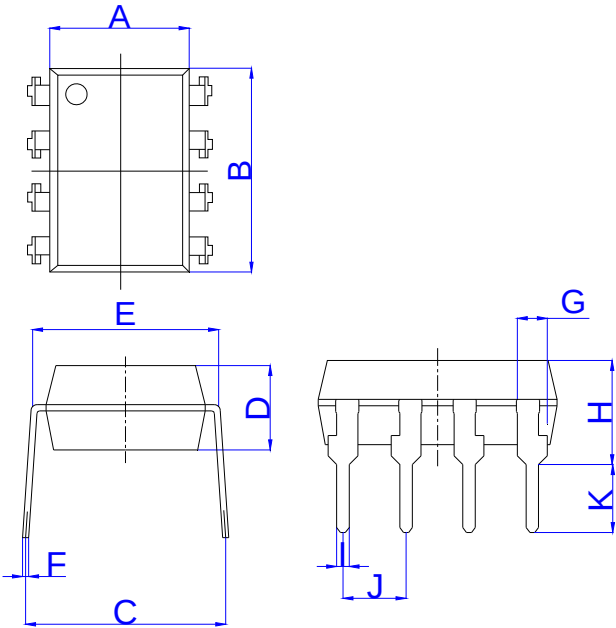


Fig.10: CMTI Test Circuit and Waveform



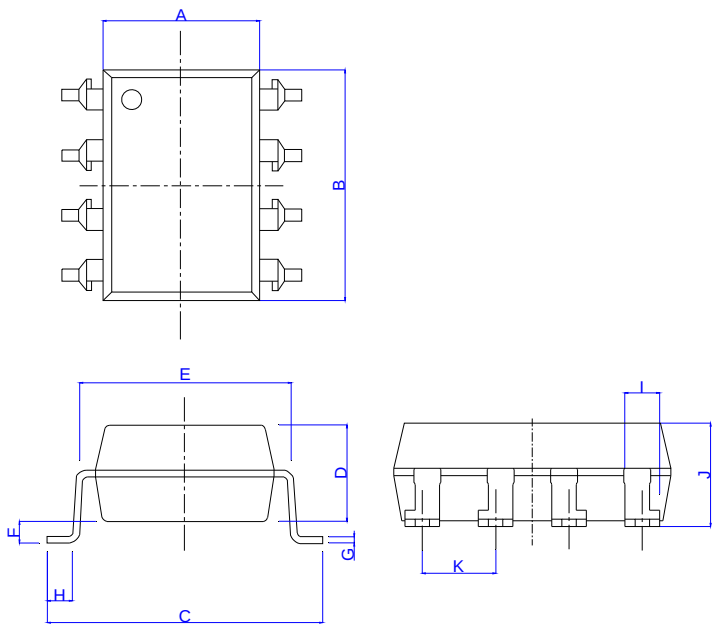
Package Dimension (Unit: mm)

Standard DIP Type:



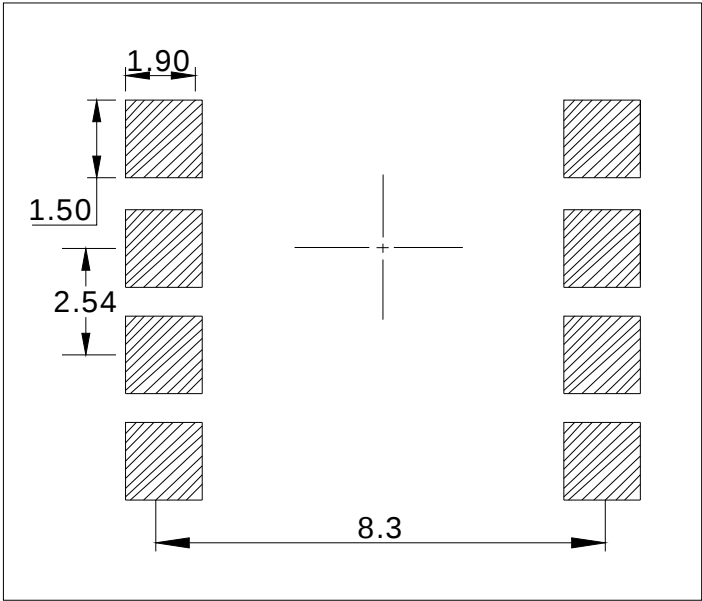
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	6.20		6.60	0.244		0.260
B	9.40		9.80	0.370		0.386
C	7.15		8.95	0.281		0.352
D	3.20		3.60	0.126		0.142
E	7.32		7.92	0.288		0.312
F	0.15		0.35	0.006		0.014
G	0.90		1.50	0.035		0.059
H	3.90		4.50	0.154		0.177
I	0.40		0.60	0.016		0.024
J	2.29		2.79	0.090		0.110
K	2.24		3.24	0.088		0.128

Option SMD Type:



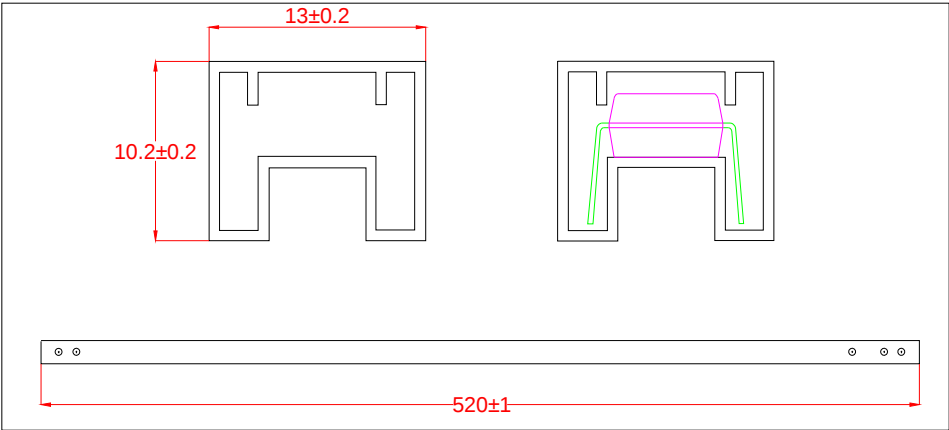
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	6.20		6.60	0.244		0.260
B	9.40		9.80	0.370		0.386
C	9.50		10.50	0.374		0.413
D	3.20		3.60	0.126		0.142
E	7.32		7.92	0.288		0.312
F	0.05		0.35	0.002		0.014
G	0.16		0.36	0.006		0.014
H	0.60		1.40	0.024		0.055
I	0.90		1.50	0.035		0.059
J	3.30		3.90	0.130		0.154
K	2.29		2.79	0.090		0.110

RECOMMENDED SOLDER MASK (Dimensions in mm unless otherwise stated)



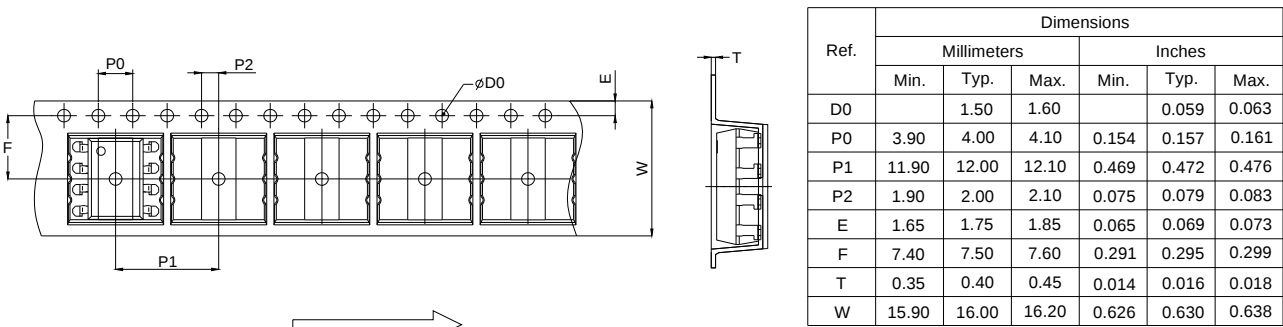
TUBE SPECIFICATIONS (Dimensions in mm unless otherwise stated)

Standard DIP

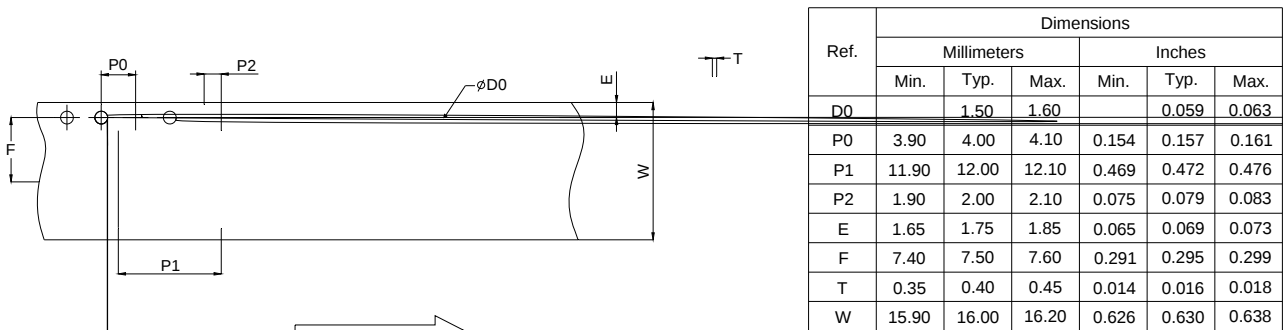


CARRIER TAPE SPECIFICATIONS (Dimensions in mm unless otherwise stated)

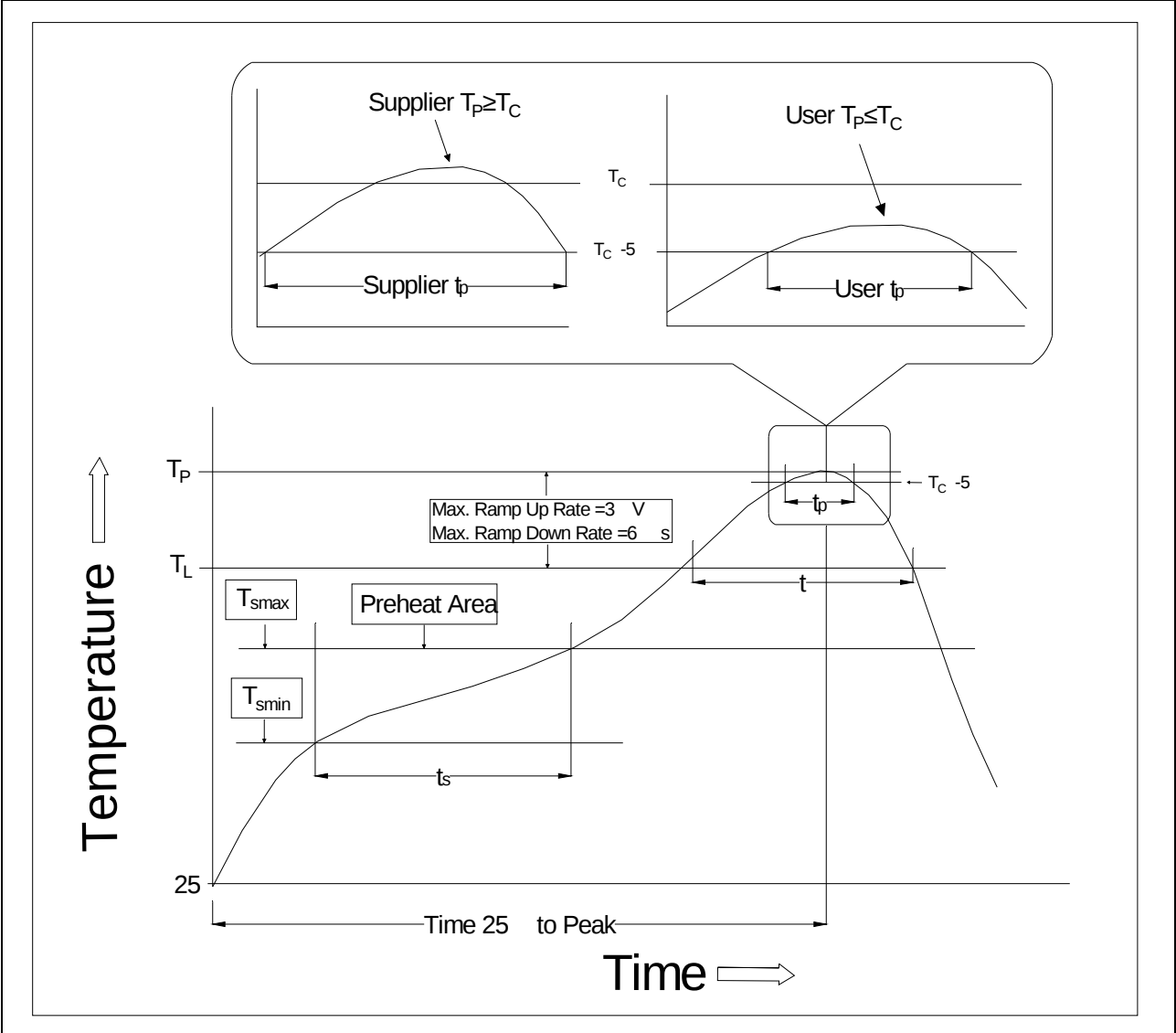
Option S



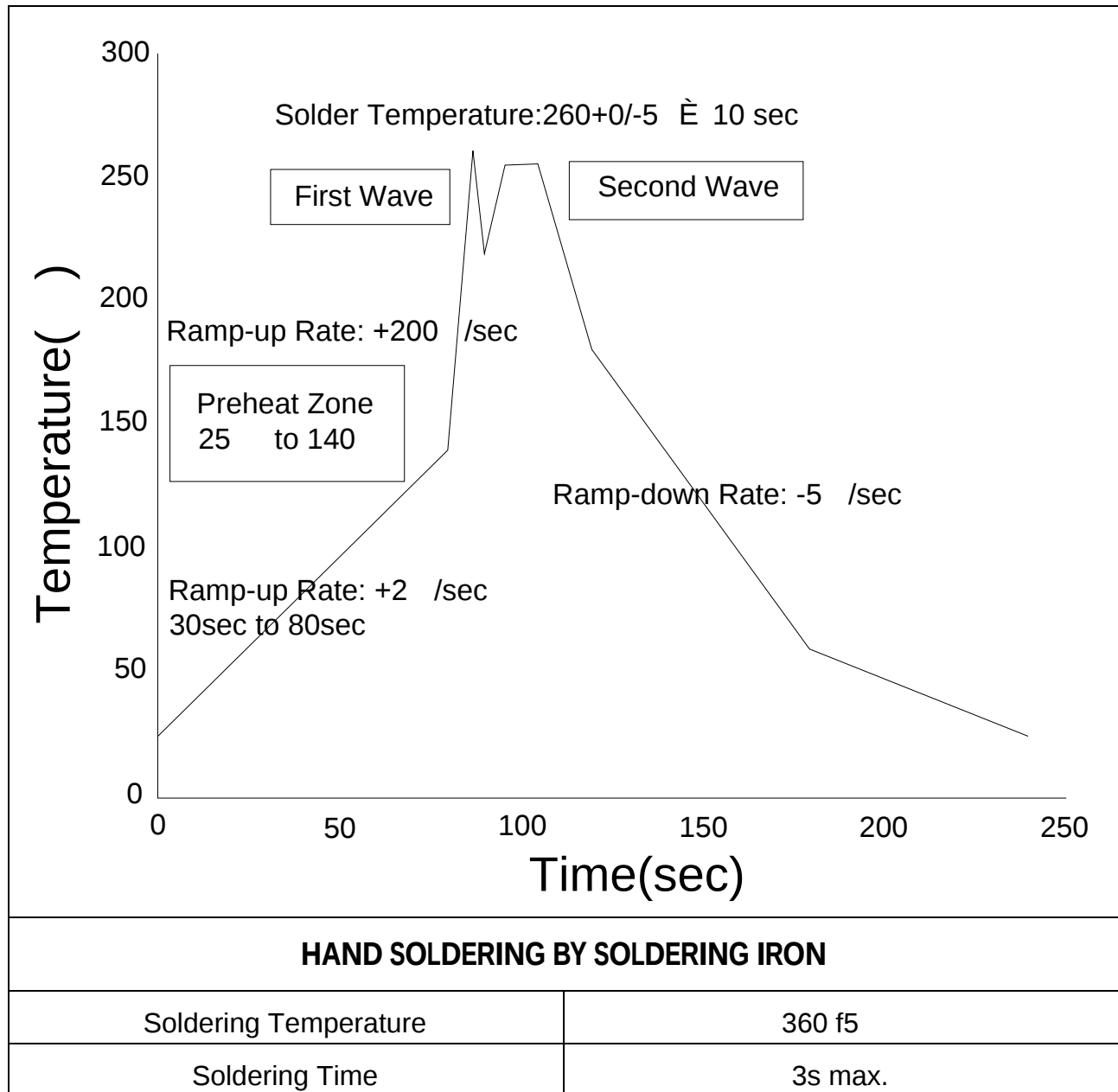
Option L



REFLOW INFORMATION



Profile Feature	Sn-Pb Assembly Profile	Pb-Free Assembly Profile
Temperature Min. (T_{smin})	100	150
Temperature Max. (T_{smax})	150	200
Time (t_s) from (T_{smin} to T_{smax})	60-120 seconds	60-120 seconds
Ramp-up Rate (t_L to t_P)	3 °C/second max.	3 °C/second max.
Liquidus Temperature (T_L)	183	217
Time (t_L) Maintained Above (T_L)	60-150 seconds	60-150 seconds
Peak Body Package Temperature	235 +0 /-5	260 +0 /-5
Time (t_P) within 5 °C of 260	10 seconds	10 seconds
Ramp-down Rate (T_P to T_L)	3-6 °C/second	3-6 °C/second
Time 25 °C to Peak Temperature	6 minutes max.	8 minutes max.

WAVE SOLDERING

Note:

1. Reflow soldering is recommended at the temperatures and times shown, no more than three times.
2. Avoid direct contact between the epoxy body and any tools or surfaces exceeding its maximum storage temperature.
3. Application of pressure on the epoxy body is prohibited at elevated temperatures. In specific scenarios, any applied force must not exceed 2.5N.
4. Ensure the component has cooled to ambient temperature before proceeding with any subsequent manufacturing steps.
5. The component has a shelf life of one year when stored under standard conditions.
6. Recommend storage Temp.: 0~40°C;
Recommend storage humidity: <60%;
MSL level: MSL 1

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