



## JOCV2B23X-D8P/S Series

Rev.A.1.0

### DESCRIPTION:

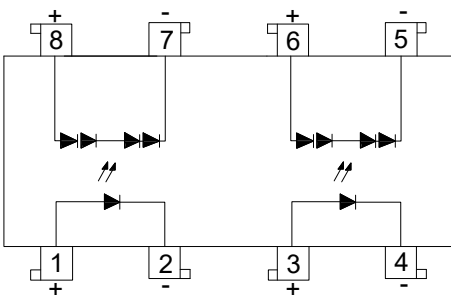
The products are voltage opto-couplers in a plastic DIP8 package with different lead forming options. The device consists of a high-voltage output detector circuit. It is capable of directly driving gates of power MOSFETs or IGBTs. The products are widely used in supply for electronic circuit and drive solid state relay.

### MAIN FEATURES

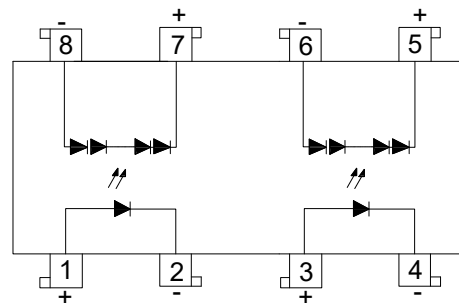
- High isolation 5000 VRMS
- Operating temperature range -40°C to 110°C
- RoHS & REACH Compliance
- HBM: H3A; MM: M4; CDM: C3
- CQC approved
- VDE approved
- UL approved



### Schematic



JOCV2B23-D8P/S



JOCV2B23R-D8P/S

### ABSOLUTE MAXIMUM RATINGS (Temperature=25°C)

Parameter		Symbol	Value	Unit
Input	Forward Current	$I_F$	50	mA
	Peak Forward Current	$I_{FP}$	1 <sup>①</sup>	A
	Reverse Voltage	$V_R$	6	V
	Power Dissipation	$P_D$	75	mW
Isolation Voltage		$V_{iso}$	5000 <sup>②</sup>	Vrms
Operating Temperature		$T_{opr}$	-40~+110	°C

Junction Temperature	$T_j$	125	°C
Storage Temperature	$T_{stg}$	-55~+125	°C
Soldering Temperature	$T_{sol}$	260	°C

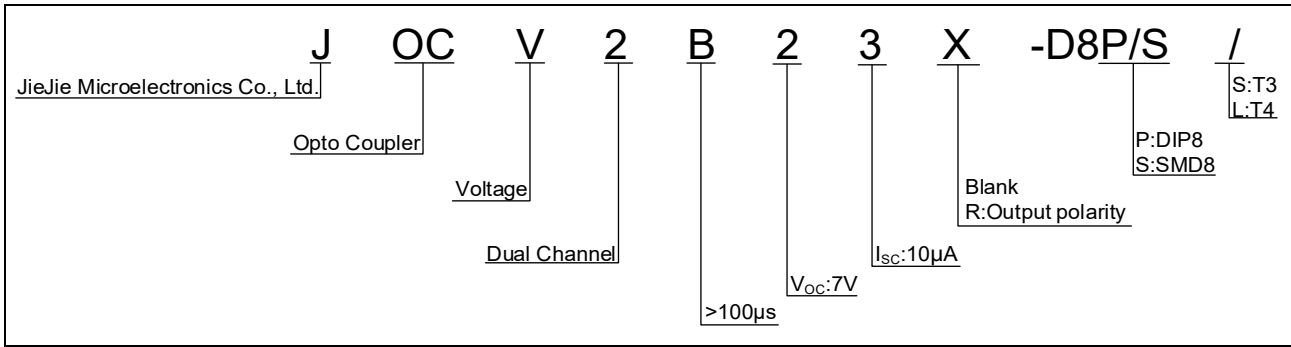
**NOTE1** : 100μs pulse, 100Hz frequency

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

**ELECTRICAL CHARACTERISTICS** (Temperature=25°C)

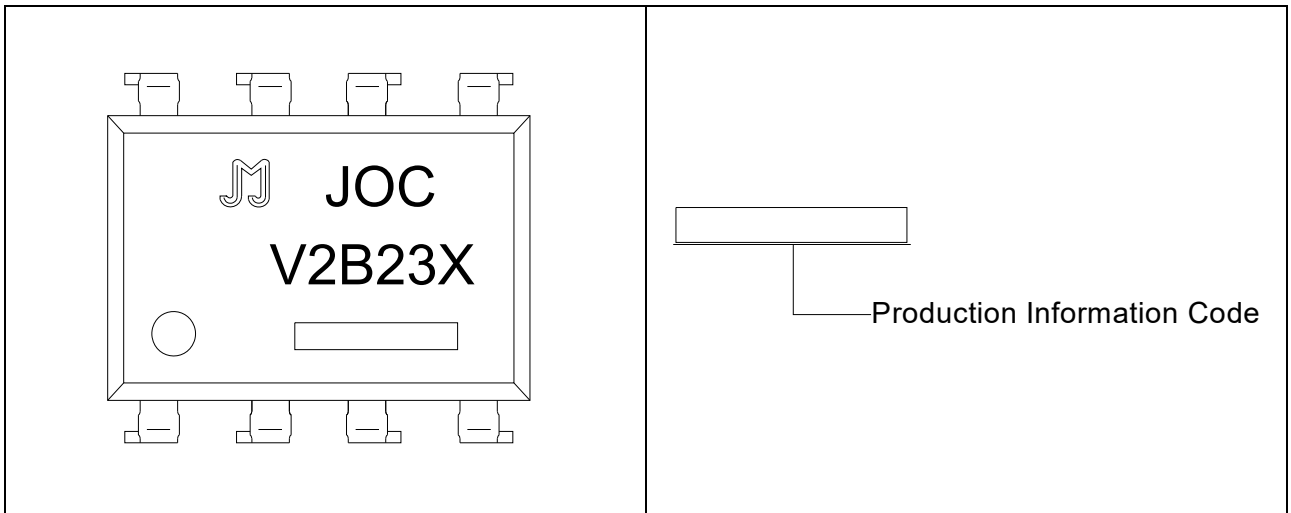
Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit
Input	Forward Voltage	$V_F$	$I_F=10mA$	-	1.2	1.5	V
	Reverse Current	$I_R$	$V_R=6V$	-	-	1	μA
Output	Open Circuit Voltage	$V_{OC}$	$I_F=10mA$ $I_O=0mA$	7	-	-	V
	Short Circuit Current	$I_{SC}$	$I_F=10mA$ $V_O=0V$	10	-	-	μA
Transfer Characteristics	Isolation resistance	$R_{IO}$	DC500V 40~60%R.H.	$10^{12}$	-	-	Ω
	Response Time	$t_{on}$	$I_F=10mA$	-	100	-	μs
		$t_{off}$		-	50	-	μs

**ORDERING INFORMATION**



Packing Quantity			
Option	Quantity	Quantity – Inner box	Quantity – Outer box
DIP	50 Units/Tube	40 Tubes/Inner box	5 Inner box/Outer box =10k Units
SMD	1200 Units/Reel	2 Reels/Inner box	5 Inner box/Outer box =12k Units

**MARKING**



Characteristics Curves

FIG.1: Max. Allowable LED Forward Current vs. Ambient Temperature

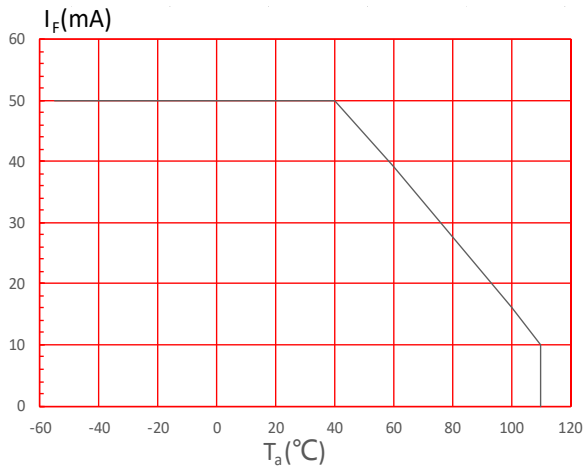


FIG.2: Forward Current vs. Forward Voltage

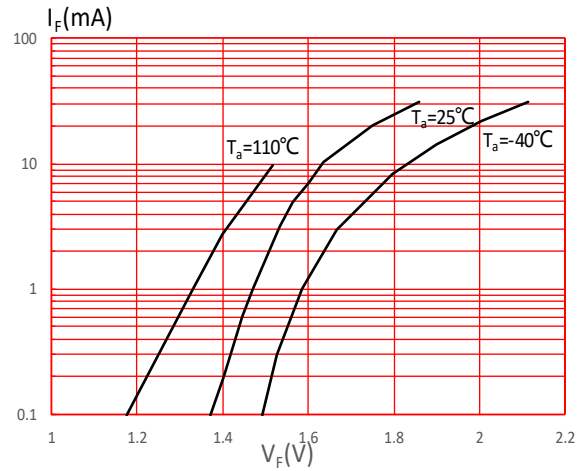


FIG.3: Open Circuit Voltage vs. Forward Current

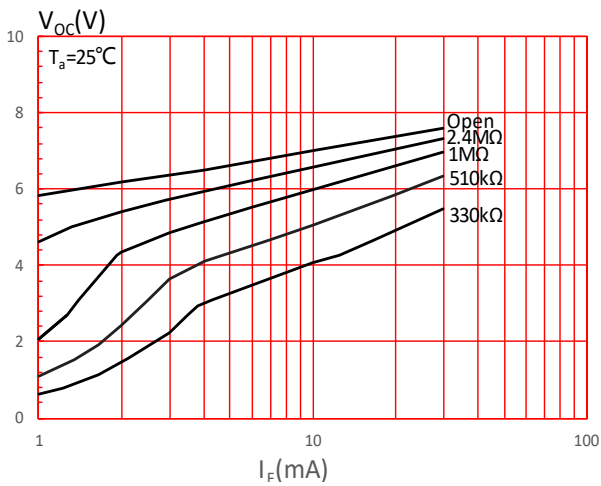


FIG.4: Short Circuit Current vs. Forward Current

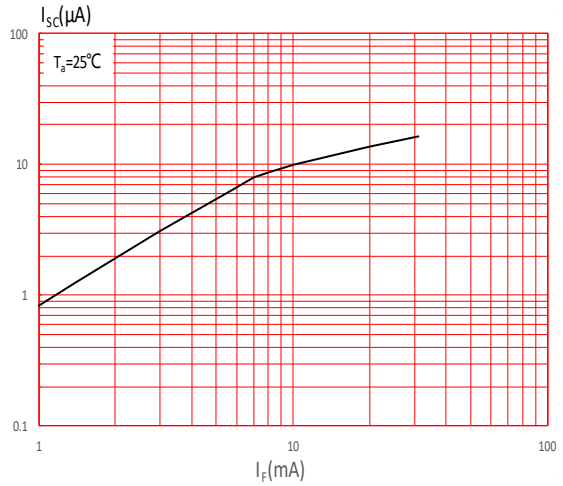


FIG.5: Open Circuit Voltage vs. Ambient Temperature

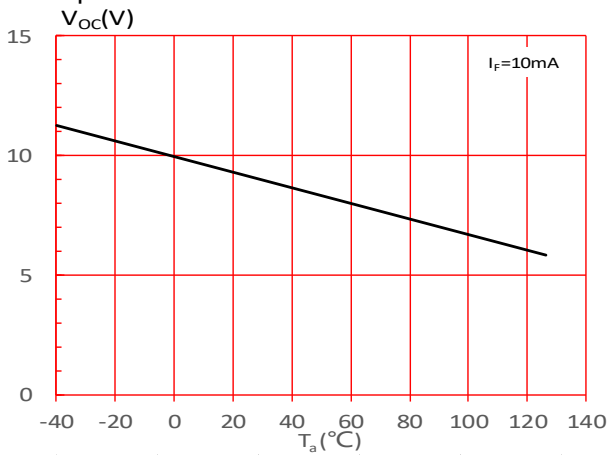
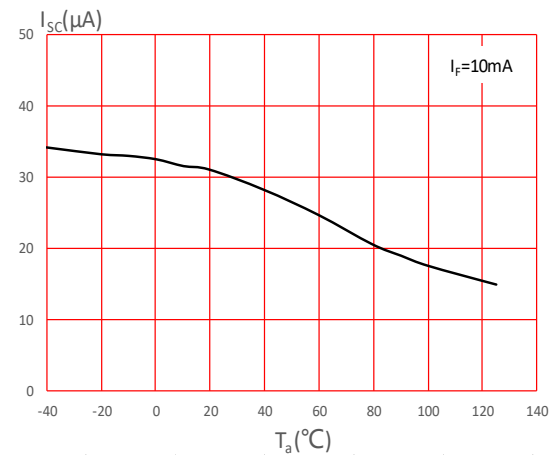
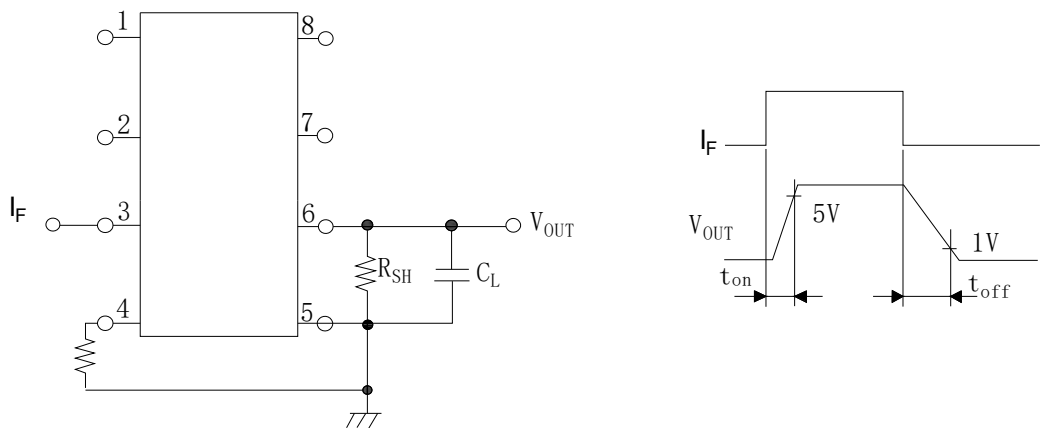


FIG.6: Short Circuit Current vs. Ambient Temperature



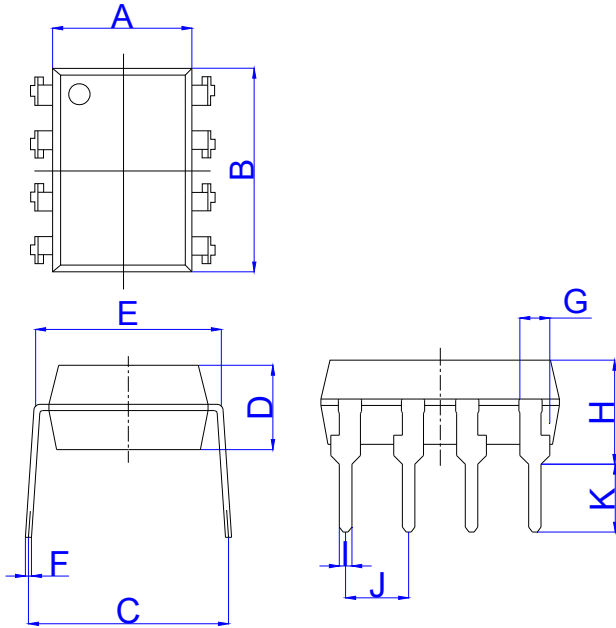
Test Circuits

FIG.7: Response Time Test Circuit, Waveform



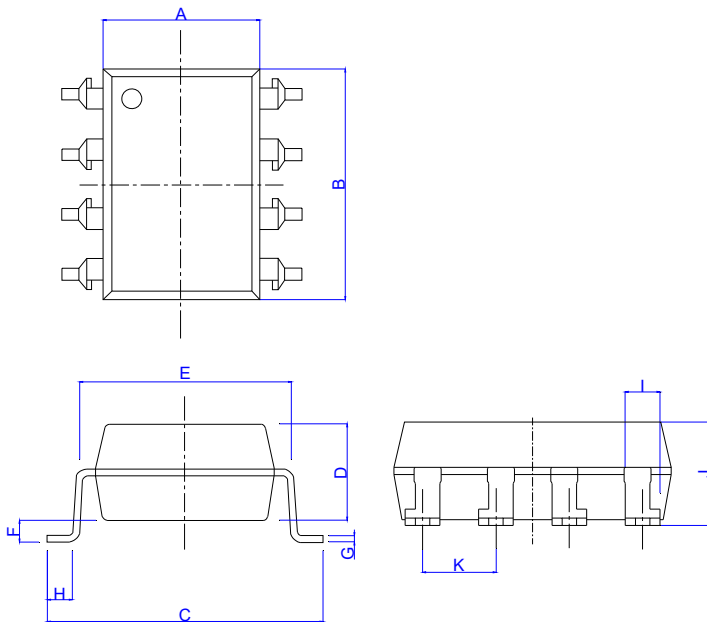
Package Dimension (Unit: mm)

Standard DIP Type:



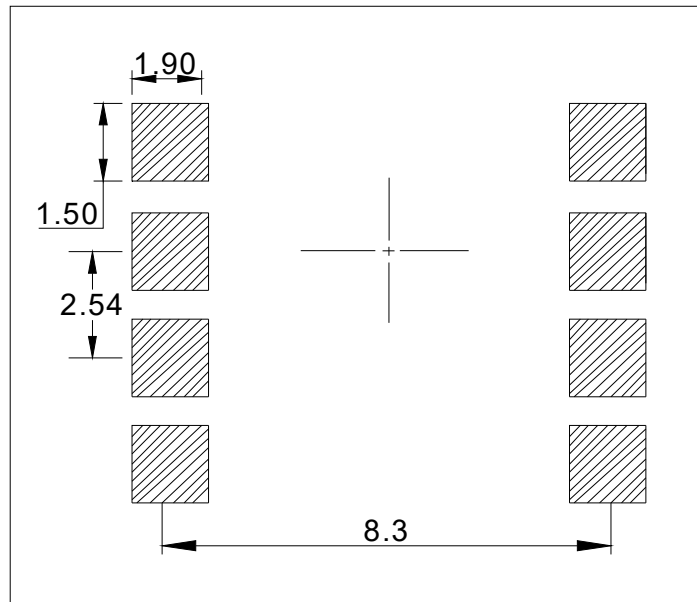
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	6.20		6.60	0.244		0.260
B	9.40		9.80	0.370		0.386
C	7.15		8.95	0.281		0.352
D	3.20		3.60	0.126		0.142
E	7.32		7.92	0.288		0.312
F	0.15		0.35	0.006		0.014
G	0.90		1.50	0.035		0.059
H	3.90		4.50	0.154		0.177
I	0.40		0.60	0.016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

Option SMD Type:



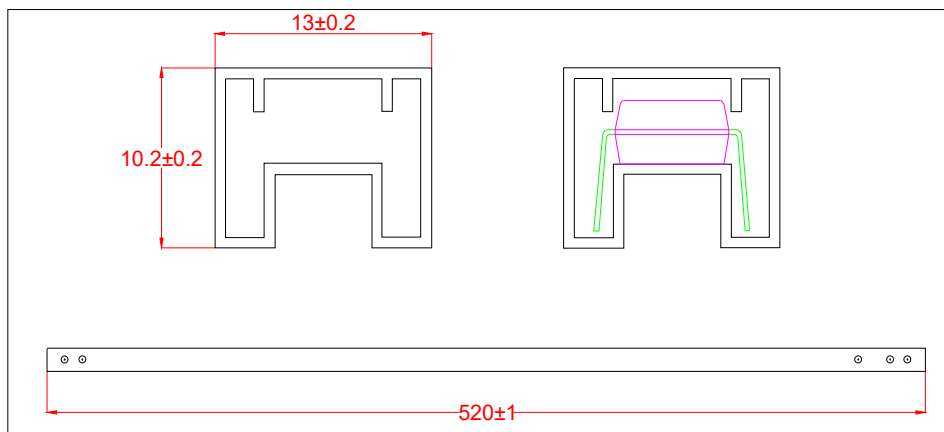
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	6.20		6.60	0.244		0.260
B	9.40		9.80	0.370		0.386
C	9.50		10.50	0.374		0.413
D	3.20		3.60	0.126		0.142
E	7.32		7.92	0.288		0.312
F	0.05		0.35	0.002		0.014
G	0.16		0.36	0.006		0.014
H	0.60		1.40	0.024		0.055
I	0.90		1.50	0.035		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)**



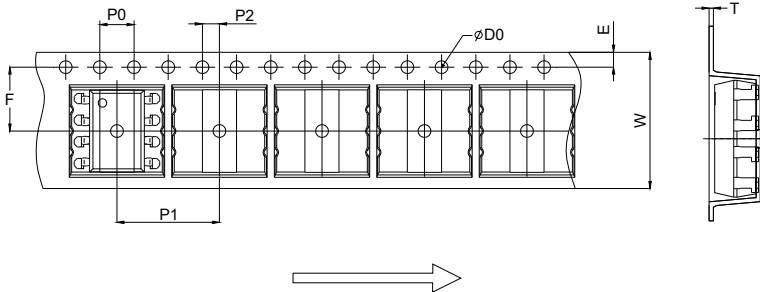
**TUBE SPECIFICATIONS (Dimensions in mm unless otherwise stated)**

**Standard DIP**



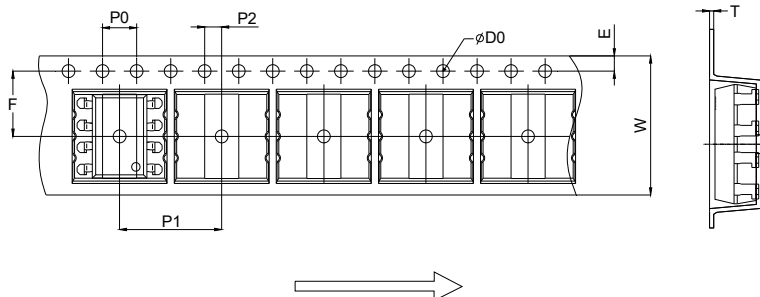
**CARRIER TAPE SPECIFICATIONS (Dimensions in mm unless otherwise stated)**

**Option S**



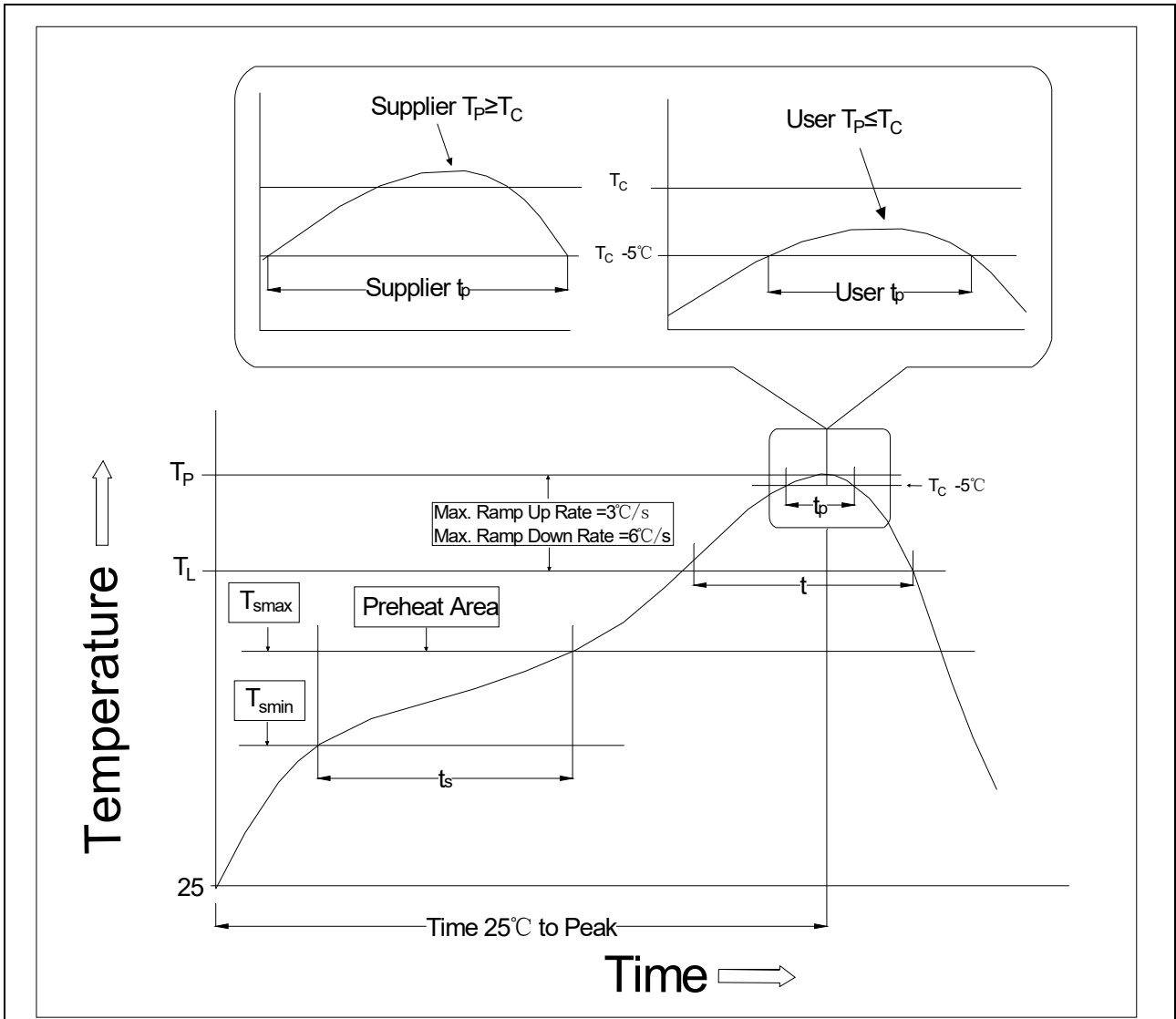
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
D0		1.50	1.60		0.059	0.063
P0	3.90	4.00	4.10	0.154	0.157	0.161
P1	11.90	12.00	12.10	0.469	0.472	0.476
P2	1.90	2.00	2.10	0.075	0.079	0.083
E	1.65	1.75	1.85	0.065	0.069	0.073
F	7.40	7.50	7.60	0.291	0.295	0.299
T	0.35	0.40	0.45	0.014	0.016	0.018
W	15.90	16.00	16.20	0.626	0.630	0.638

**Option L**



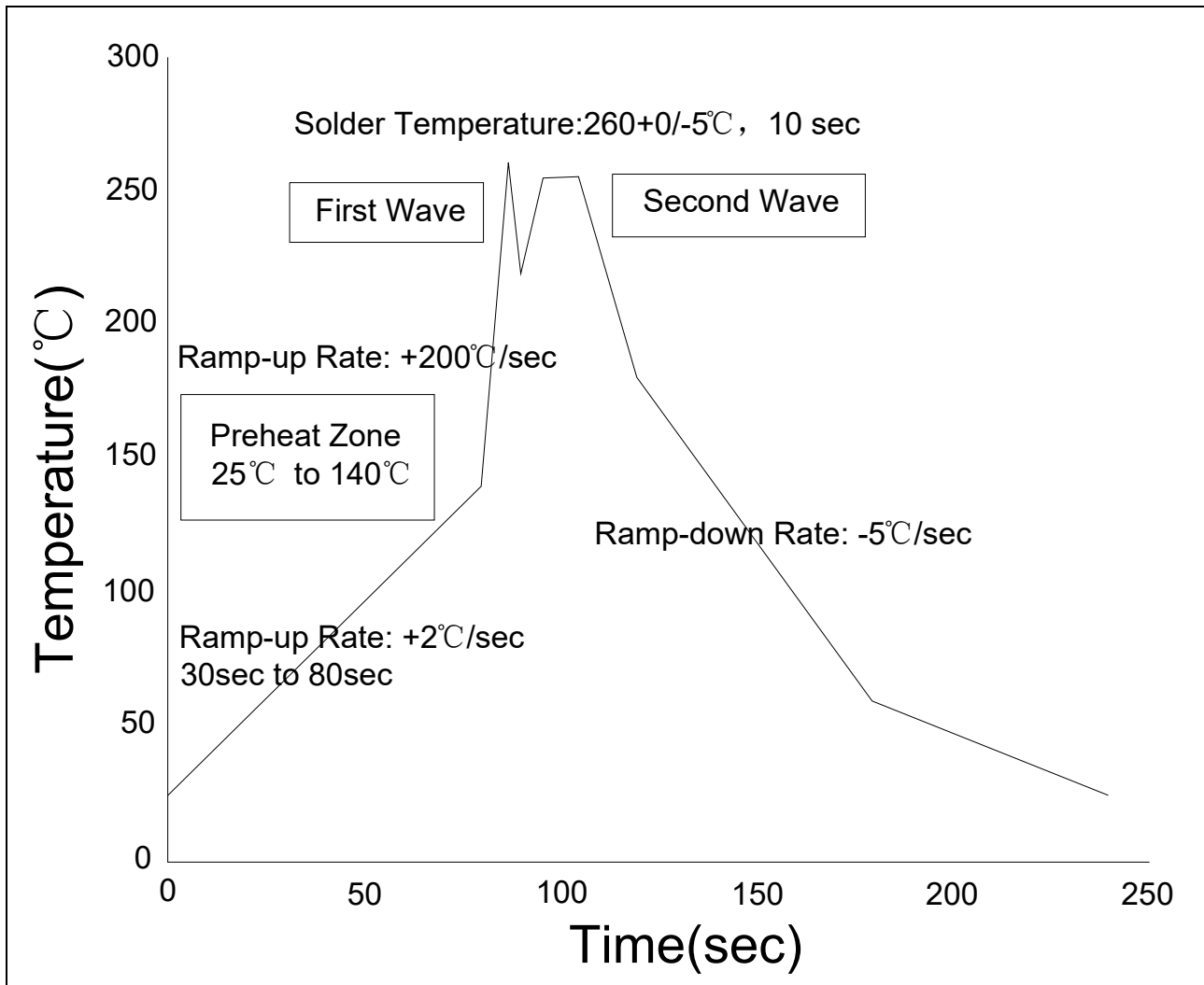
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
D0		1.50	1.60		0.059	0.063
P0	3.90	4.00	4.10	0.154	0.157	0.161
P1	11.90	12.00	12.10	0.469	0.472	0.476
P2	1.90	2.00	2.10	0.075	0.079	0.083
E	1.65	1.75	1.85	0.065	0.069	0.073
F	7.40	7.50	7.60	0.291	0.295	0.299
T	0.35	0.40	0.45	0.014	0.016	0.018
W	15.90	16.00	16.20	0.626	0.630	0.638

REFLOW INFORMATION



Profile Feature	Sn-Pb Assembly Profile	Pb-Free Assembly Profile
Temperature Min. (T <sub>smin</sub> )	100°C	150°C
Temperature Max. (T <sub>smax</sub> )	150°C	200°C
Time (t <sub>s</sub> ) from (T <sub>smin</sub> to T <sub>smax</sub> )	60-120 seconds	60-120 seconds
Ramp-up Rate (t <sub>L</sub> to t <sub>P</sub> )	3°C/second max.	3°C/second max.
Liquidus Temperature (T <sub>L</sub> )	183°C	217°C
Time (t <sub>L</sub> ) Maintained Above (T <sub>L</sub> )	60-150 seconds	60-150 seconds
Peak Body Package Temperature	235°C+0°C/-5°C	260°C+0°C/-5°C
Time (t <sub>P</sub> ) within 5°C of 260°C	10 seconds	10 seconds
Ramp-down Rate (T <sub>P</sub> to T <sub>L</sub> )	3-6°C/second	3-6°C/second
Time 25°C to Peak Temperature	6 minutes max.	8 minutes max.

**WAVE SOLDERING**



**HAND SOLDERING BY SOLDERING IRON**


Soldering Temperature	$360 \pm 5^{\circ}\text{C}$
Soldering Time	3s max.

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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