



JOCHG20B-D6P/S Series

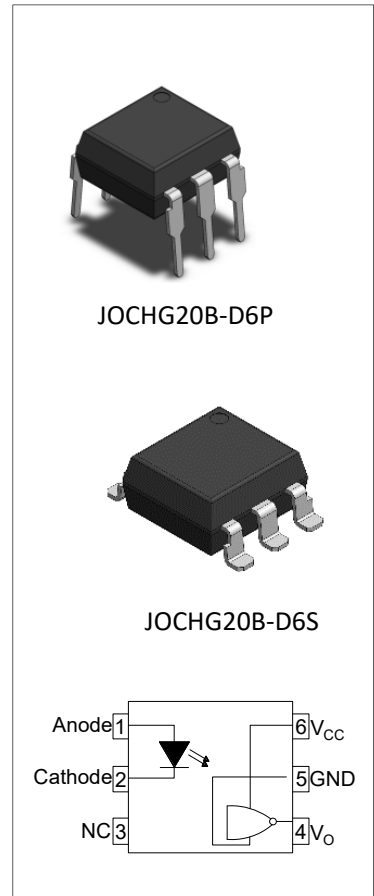
Rev.A.1.0

DESCRIPTION:

The products are 0.5MBd high-speed opto-couplers in a plastic DIP6 package with different lead forming options. The device combines an AlGaAs infrared emitting diode as the emitter which is optically coupled to a Schmitt Trigger detector. The products are widely used in 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 and interfaces computers with peripherals.

MAIN FEATURES

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



ABSOLUTE MAXIMUM RATINGS (Temperature=25°C)

Parameter		Symbol	Value	Unit
Input	Forward Current	I_F	50	mA
	Peak Forward Current	I_{FP}	1 ^①	A
	Reverse Voltage	V_R	6	V
	Input Power Dissipation	P_D	100	mW
Output	Supply Voltage	V_{CC}	16	V
	Output Voltage	V_O	16	V
	Output Current	I_O	50	mA
	Output Power Dissipation	P_O	150	mW
Total Power Dissipation		P_{tot}	250	mW
Isolation Voltage		V_{iso}	5000 ^②	Vrms
Operating Temperature		T_{opr}	-40~110	°C

Junction Temperature	T_j	125	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-55~150	$^{\circ}\text{C}$
Soldering Temperature	T_{sol}	260	$^{\circ}\text{C}$

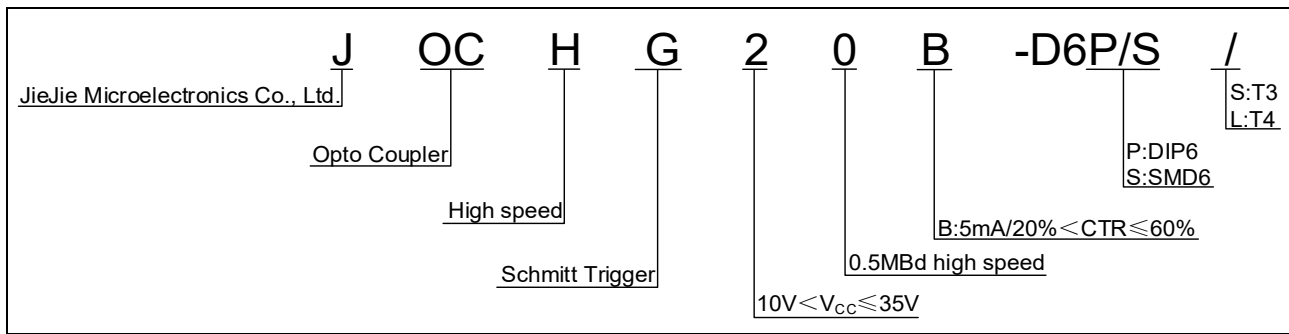
NOTE1 : 100 μs pulse, 100Hz frequency

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

ELECTRICAL CHARACTERISTICS (Temperature=25 $^{\circ}\text{C}$)

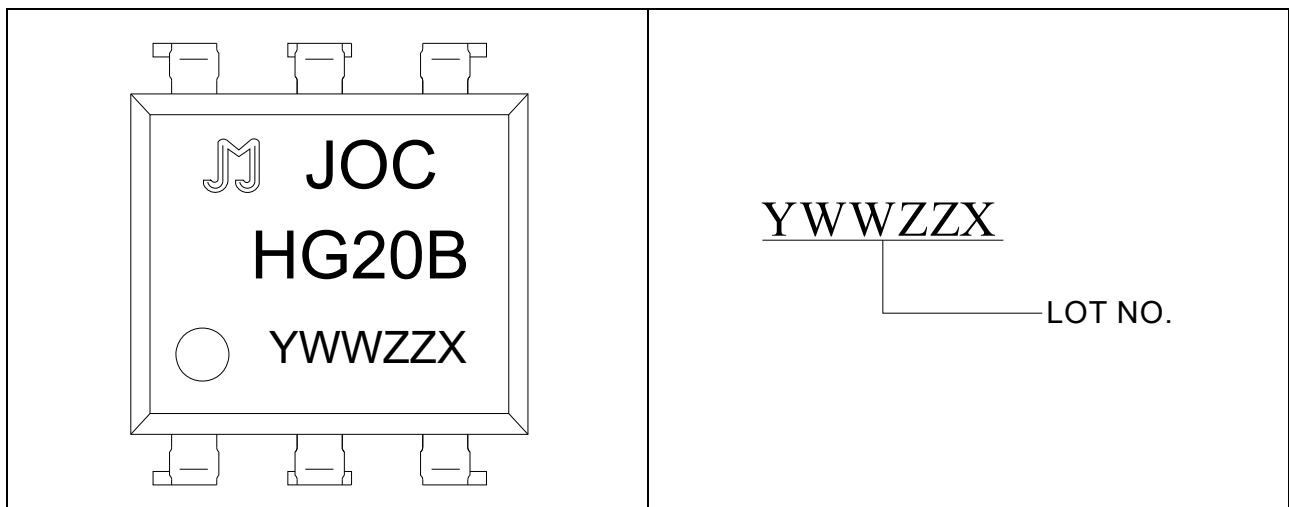
Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit
Input	Forward Voltage	V_F	$I_F=10\text{mA}$	-	1.35	1.6	V
	Reverse Current	I_R	$V_R=6\text{V}$	-	-	1	μA
	Input Capacitance	C_{in}	$V=0, f=1\text{MHz}$	-	60	-	pF
Output	Operation Voltage Range	V_{CC}	-	3	-	15	V
	Off State Supply Current	$I_{\text{CC(off)}}$	$I_F=0\text{mA}, V_{\text{CC}}=5\text{V}$	-	1.6	5	mA
	On State Supply Current	$I_{\text{CC(on)}}$	$I_F=10\text{mA}, V_{\text{CC}}=5\text{V}$	-	1.6	5	mA
	High Level Output Current	I_{OH}	$I_F=0\text{mA}, V_{\text{CC}}=15\text{V}, V_O=15\text{V}$	-	-	100	μA
Transfer Characteristics	Low Level Output Voltage	V_{OL}	$I_F=5\text{mA}, V_{\text{CC}}=5.5\text{V}, R_L=270\Omega$	-	0.35	0.6	V
	Turn On Threshold Current	I_{Fon}	$V_{\text{CC}}=5\text{V}, R_L=270\Omega$	-	-	5	mA
	Turn Off Threshold Current	I_{Foff}	$V_{\text{CC}}=5\text{V}, R_L=270\Omega$	0.3	1	-	mA
	Turn On Time	t_{on}	$V_{\text{CC}}=5\text{V}, I_F=I_{\text{Fon}}, R_L=270\Omega$	-	-	4	μs
	Turn Off Time	t_{off}		-	-	4	
	Rise Time	t_r		-	0.1	-	
	Fall Time	t_f		-	0.1	-	
	Common Mode Transient Immunity at Logic High	CM_H	$I_F=0\text{mA}, V_{\text{CM}}=1\text{kV}, R_L=270\Omega, V_{\text{CC}}=5\text{V}$	10	-	-	kV/ μs
	Common Mode Transient Immunity at Logic Low	CM_L	$I_F=I_{\text{Fon}}, V_{\text{CM}}=1\text{kV}, R_L=270\Omega, V_{\text{CC}}=5\text{V}$	10	-	-	kV/ μs
	Isolation Resistance	R_{ISO}	DC500V 40~60%R.H.	10^{12}	10^{14}	-	Ω
Floating Capacitance	C_{IO}	$V=0, f=1\text{MHz}$	-	0.3	1	pF	

ORDERING INFORMATION



Packing Quantity	
Option	Quantity
DIP	60 Units/Tube
SMD	1200 Units/Reel

MARKING



Characteristics Curves

FIG.1: Forward Current vs. Forward Voltage

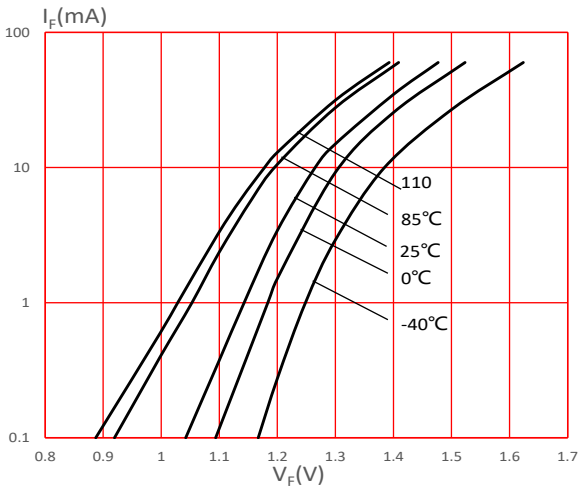


FIG.2: Output Voltage vs. Forward Current

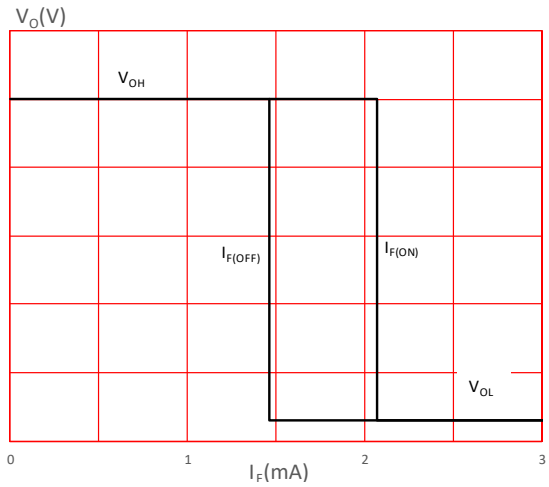


FIG.3: Normalized Turn On Threshold Current vs. Supply Voltage

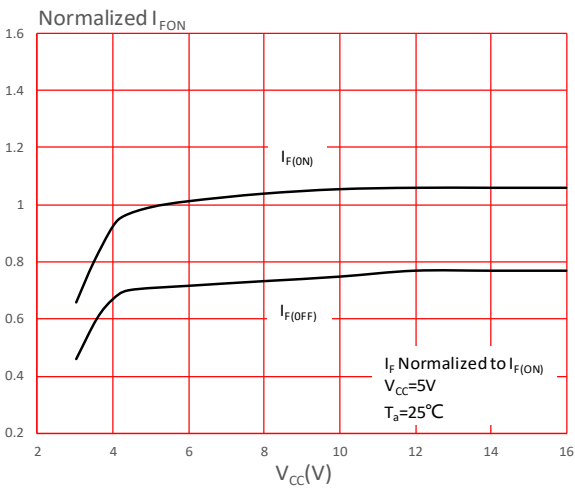


FIG.4: Normalized Turn On Threshold Current vs. Ambient Temperature

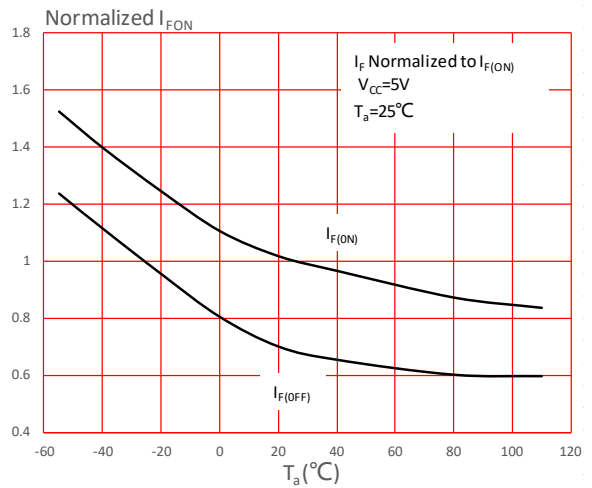


FIG.5: Low Level Output Voltage vs. Load Current

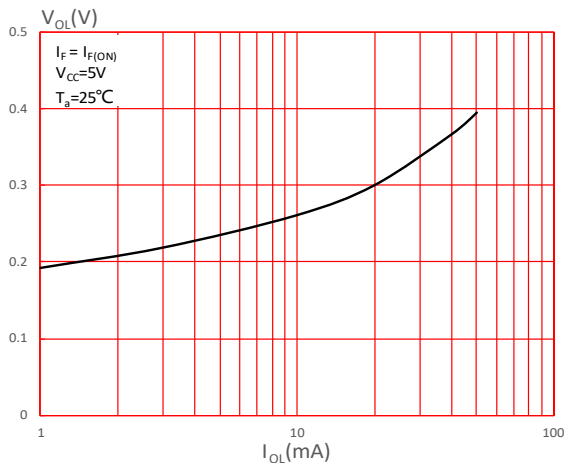
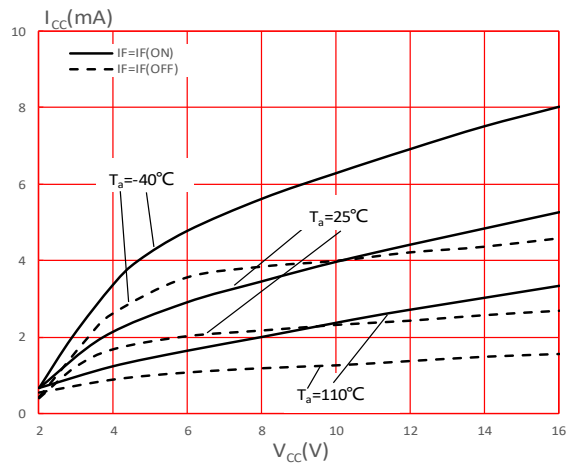
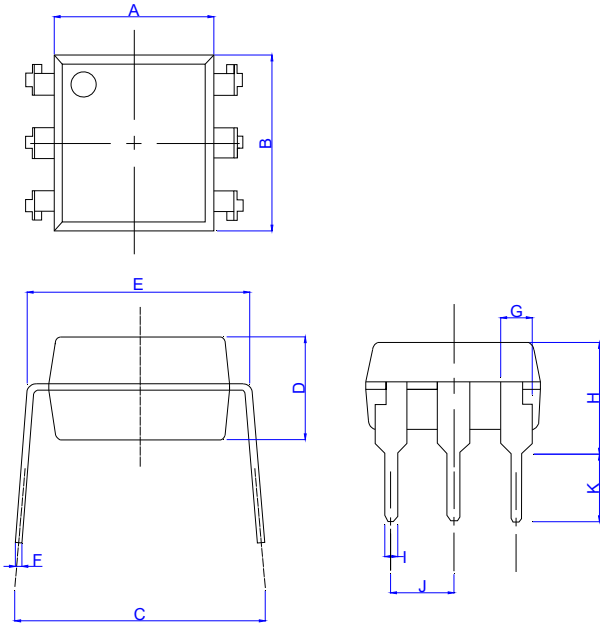


FIG.6: Supply Current vs. Supply Voltage



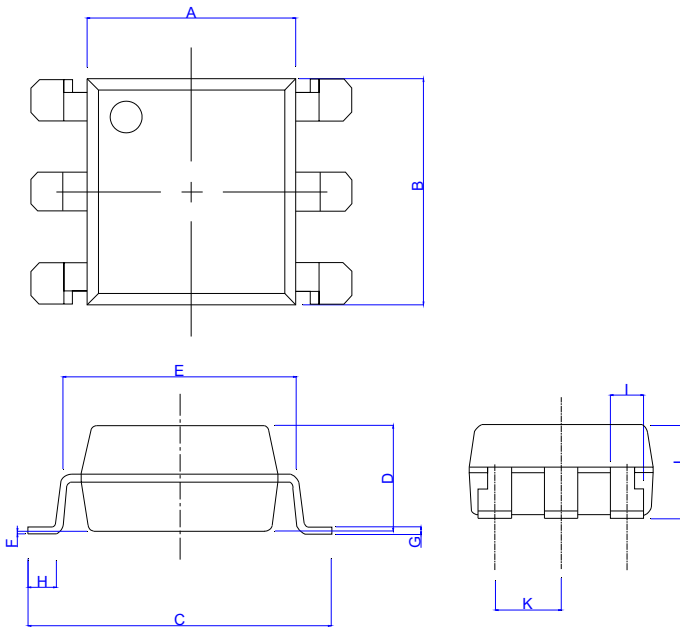
Package Dimension (Unit: mm)

Standard DIP Type:



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	6.20		6.60	0.244		0.260
B	6.92		7.32	0.272		0.288
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	1.15		1.35	0.045		0.053
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

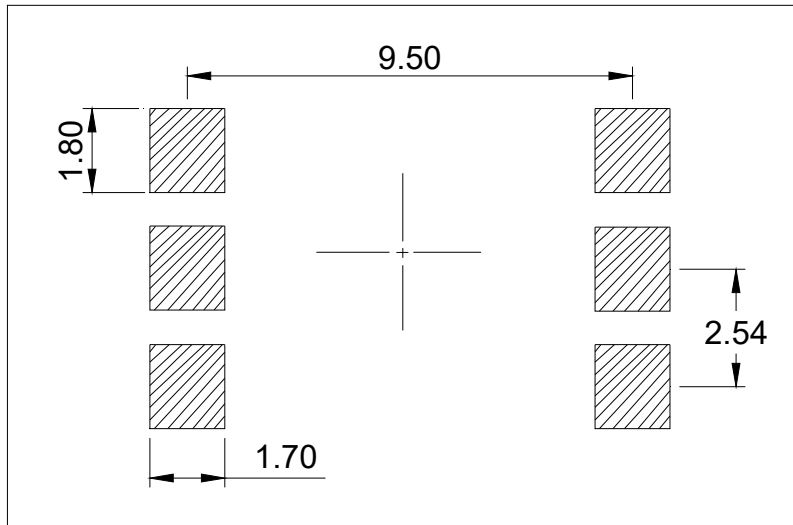
Option SMD Type:



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	6.20		6.60	0.244		0.260
B	6.92		7.32	0.272		0.288
C	9.50		10.50	0.375		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

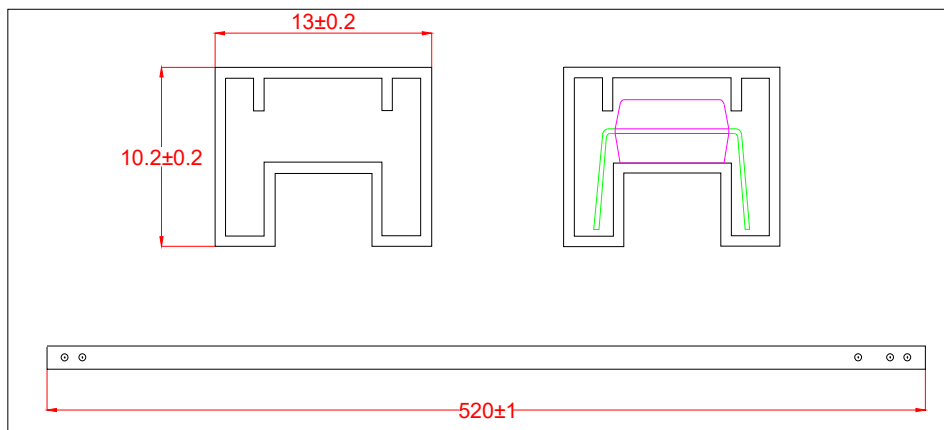
RECOMMENDED SOLDER MASK (Dimensions in mm unless otherwise stated)

Option SMD



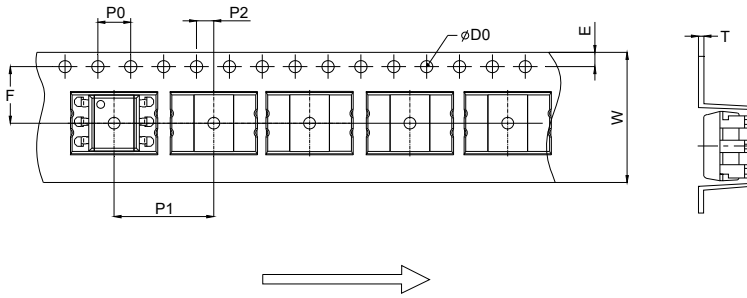
TUBE SPECIFICATIONS (Dimensions in mm unless otherwise stated)

Standard DIP



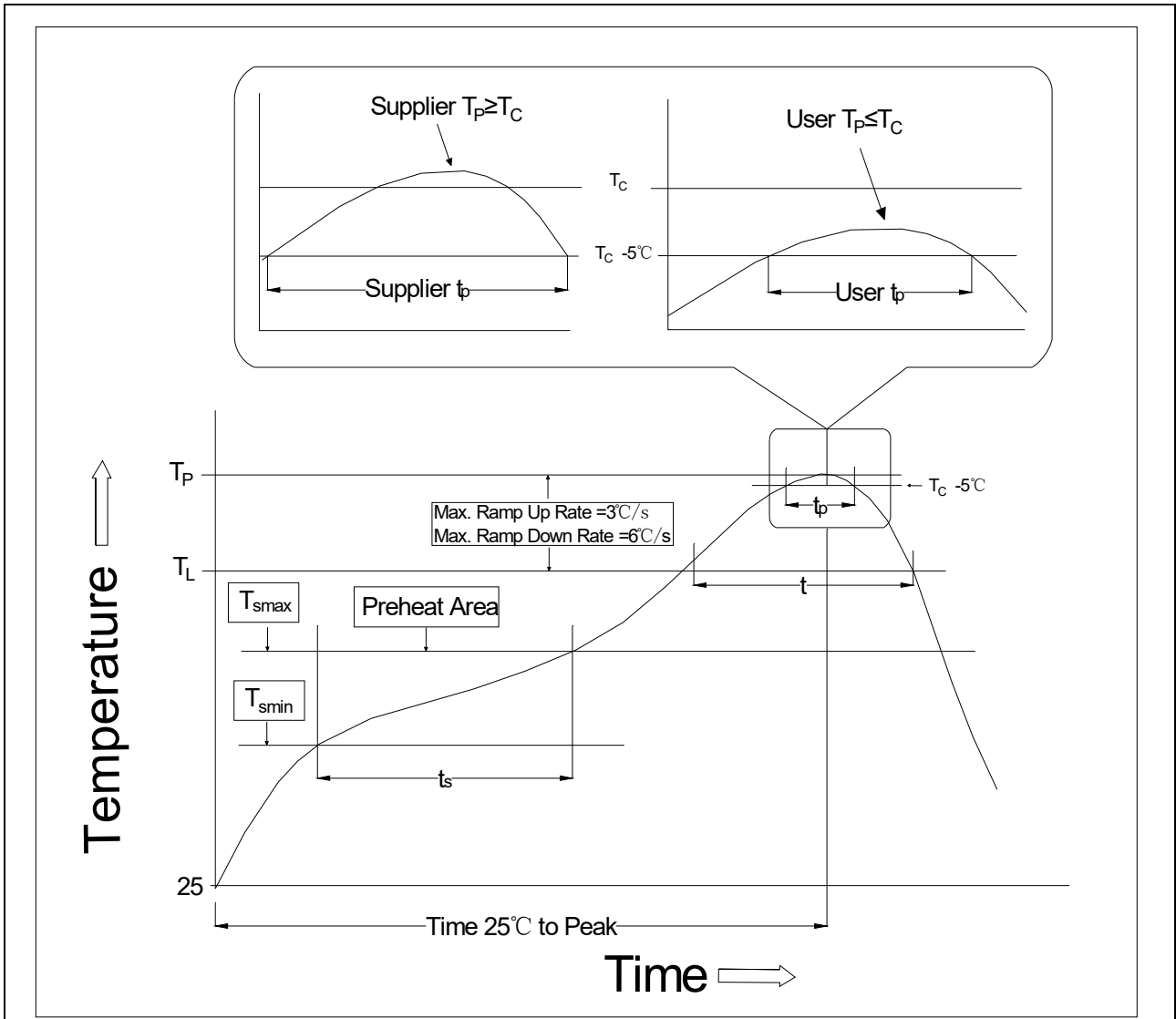
CARRIER TAPE SPECIFICATIONS (Dimensions in mm unless otherwise stated)

Option S/L



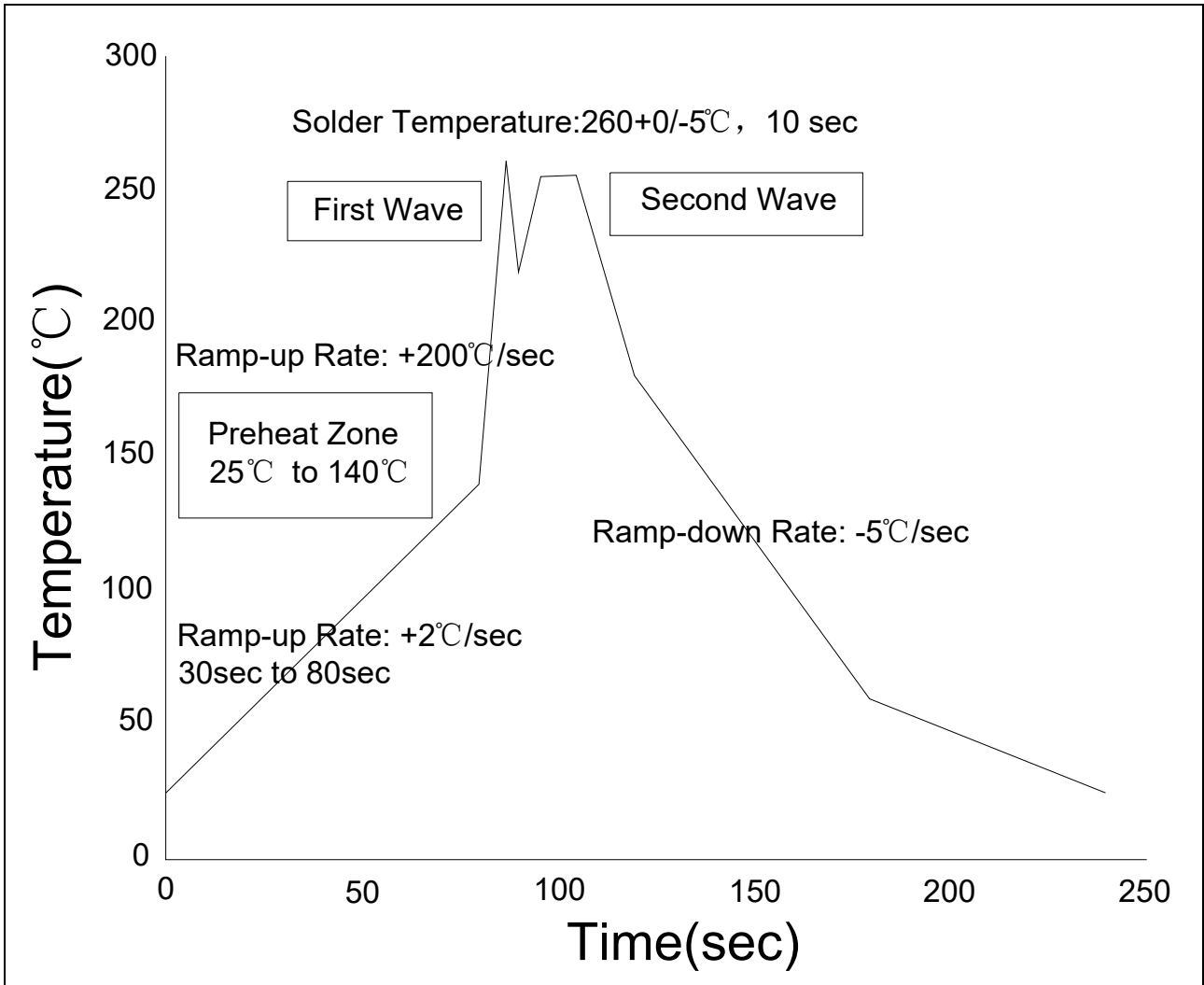
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
D0		1.50	1.60	0.059	0.063	
P0	3.90	4.00	4.10	0.154	0.157	0.161
P1	11.90	12.00	12.10	0.469	0.472	0.476
P2	1.90	2.00	2.10	0.075	0.079	0.083
E	1.65	1.75	1.85	0.065	0.069	0.073
F	7.40	7.50	7.60	0.291	0.295	0.299
T	0.35	0.40	0.45	0.014	0.016	0.018
W	15.70	16.00	16.30	0.618	0.630	0.642

REFLOW INFORMATION



Profile Feature	Sn-Pb Assembly Profile	Pb-Free Assembly Profile
Temperature Min. (T _{smin})	100	150°C
Temperature Max. (T _{smax})	150	200°C
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°C	217°C
Time (t _L) Maintained Above (T _L)	60-150 seconds	60-150 seconds
Peak Body Package Temperature	235°C+0°C/-5°C	260°C+0°C/-5°C
Time (t _P) within 5°C of 260°C	20 seconds	30 seconds
Ramp-down Rate (T _P to T _L)	6°C/second max.	6°C/second max.
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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