



The products are 6-pin solid-state relay opto-couplers. The device combines an AlGaAs infrared emitting diode as the emitter which is optically coupled to a monolithic silicon random-phase photo triac to drive a power triac in a plastic DIP6 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.

High isolation 5000 Vrms

DC input with triac output

Operating temperature range - 40°C to 110 °C

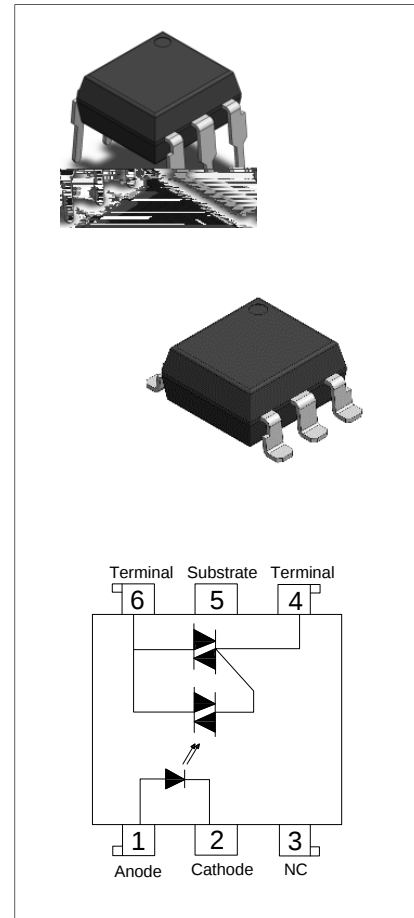
REACH & RoHS compliance

HBM: H3B; MM: M4; CDM: C3

CQC approved

VDE approved

UL approved



(Temperature=25°C)

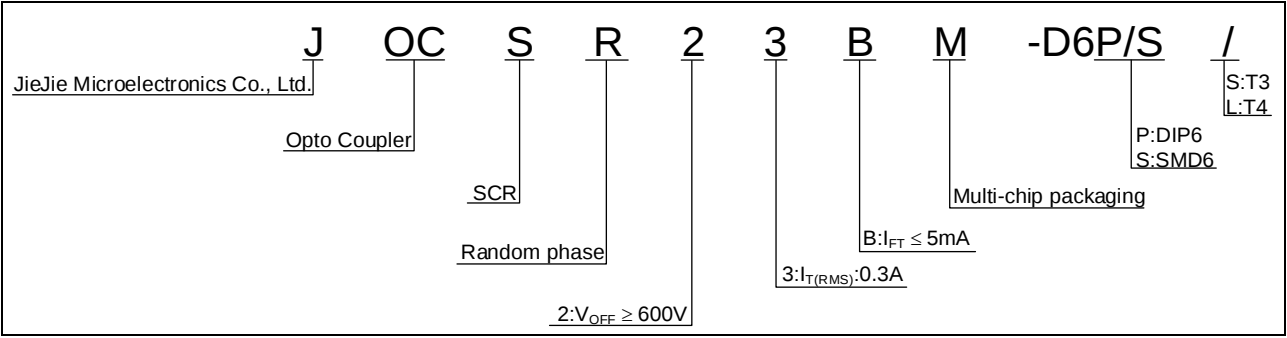
Parameter		Symbol	Value	Unit
Input	Forward Current	I _F	50	mA
	Peak Forward Current	I _{FP}	1	A
	Reverse Voltage	V _R	6	V
	Power Dissipation	P _D	75	mW
Output	Repetitive peak off-state voltage	V _{DRM}	600	V
	Repetitive peak off-state voltage	V _{RRM}	600	V
	Critical rate of rise of on-state current	di/dt	100	A/μs
	On-state RMS Current (T _a ≤80	I _{T(RMS)}	0.3	A
	Non repetitive surge peak on-state current (full cycle , t _p =20ms)	I _{TSM}	3	A
	junction to case (AC)	R _{th(j-c)}	65	/W

Isolation Voltage	V_{iso}	5000	Vrms
Operating Temperature	T_{opr}	-40~110	
Junction Temperature	T_j	125	
Storage Temperature	T_{stg}	-40~125	
Soldering Temperature	T_{sol}	260	
Peak pulse voltage ($T_j=25$; non-repetitive, off-state)	V_{pp}	3	kV

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(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	Peak Off-state Current, Either Direction	I_{DRM}	$V_{DRM} / V_{RRM} = 600V, I_F=0$	-	-	5	μA
		I_{RRM}		-	-	5	
	Peak On-state Voltage, Either Direction	V_{TM}	$I_{TM}=I_{TM}^{Rated}$	-	-	1.5	V
	Critical Rate of Rise of Off-state voltage	dV/dt	$V_D=400V$, Gate Open $I_F=0$, $T_j=125$	1000	-	-	V/ μs
	Critical Rate of Rise of Commutating Voltage	$(dV/dt)_c$	$(dI/dt)_c = 1.5A/ms$, $T_j=125$	10	-	-	V/ μs
Transfer Characteristics	LED Trigger Current	I_{FT}	Terminal Voltage=6V $R_L=100\Omega$	-	-	5	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



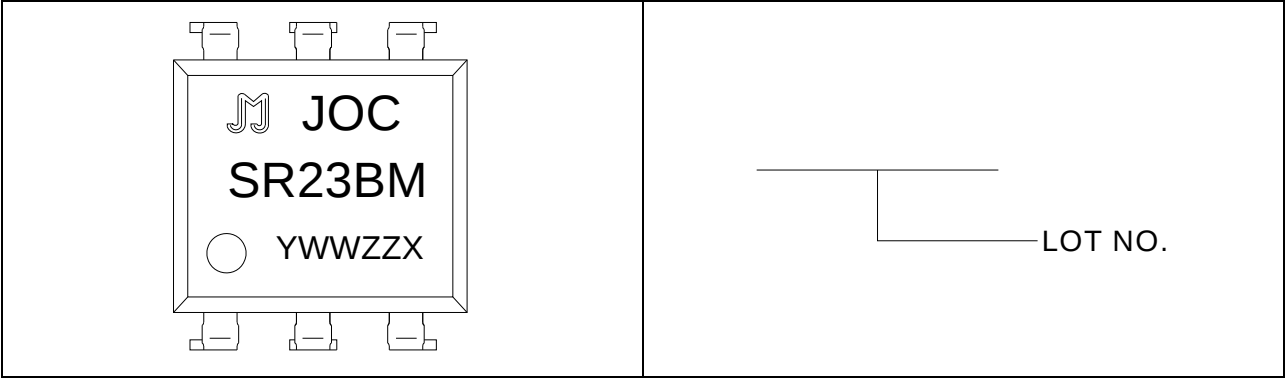


FIG.1: Max. Allowable LED Forward Current vs. Ambient Temperature

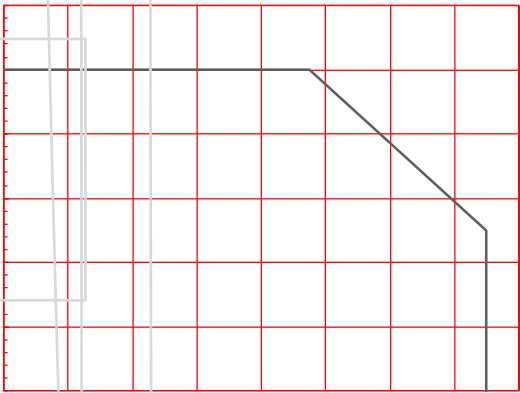


FIG.2: On-state Terminal Current vs. Ambient Temperature

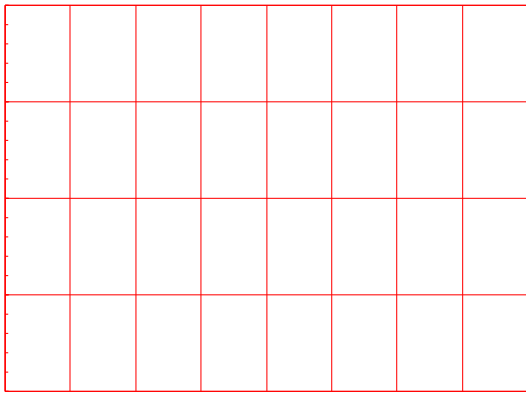


FIG.7: On-state characteristics

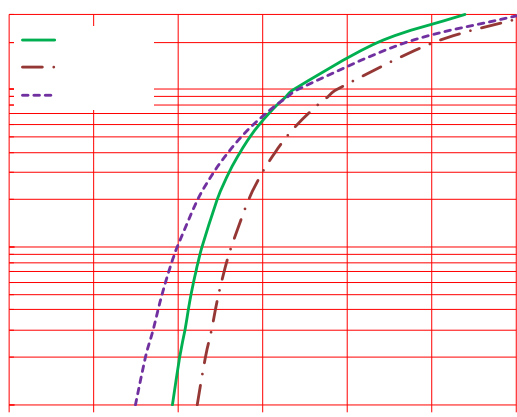


FIG.8: Normalized Holding Current vs. Ambient Temperature

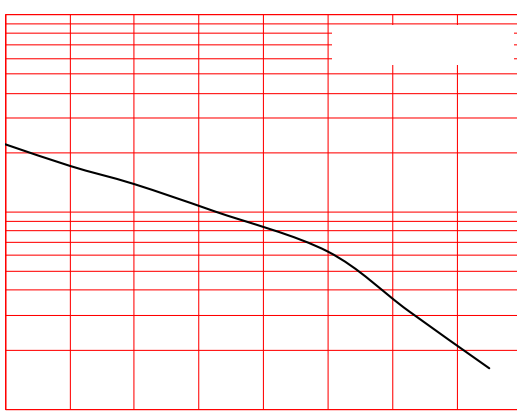


FIG.9: Turn On Time vs. Forward Current

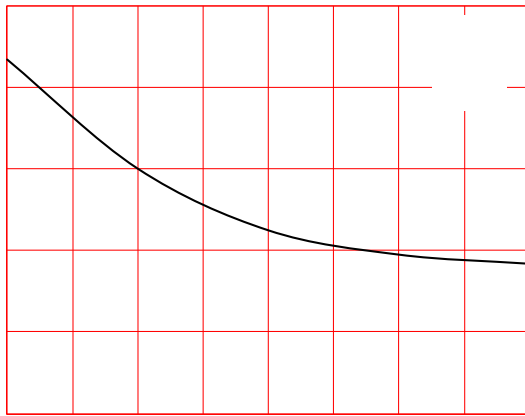


FIG.10: Test Circuits of Turn On Time

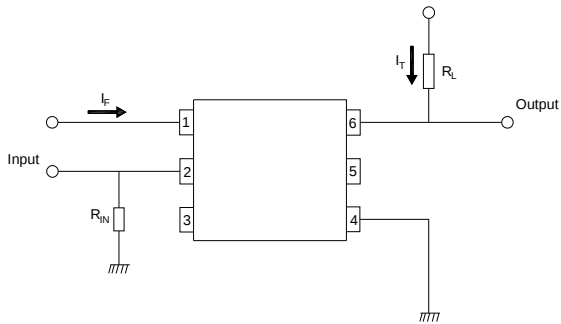
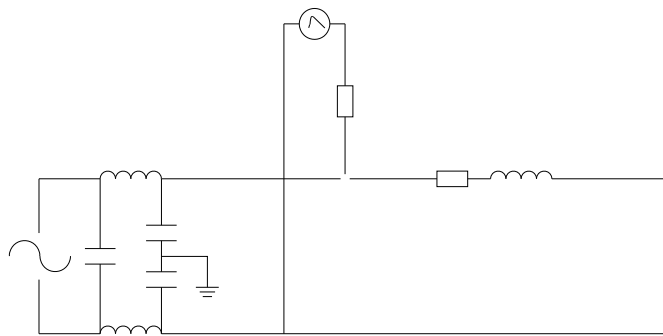
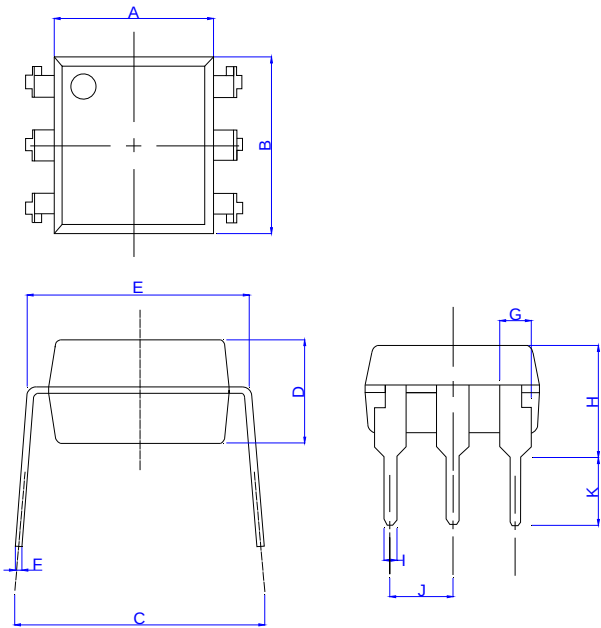


FIG.11: Waveforms of Turn On Time

FIG.12: Test circuit for inductive and resistive loads to IEC-61000-4-5 standards

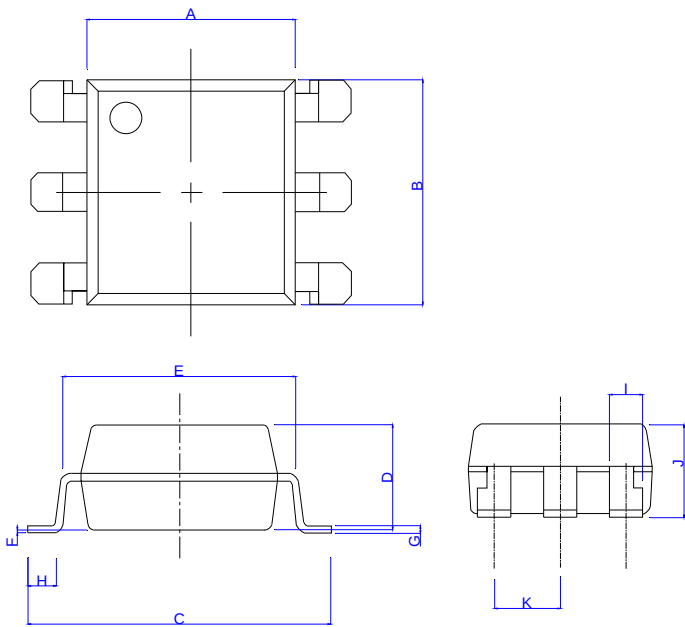


Standard DIP Type:



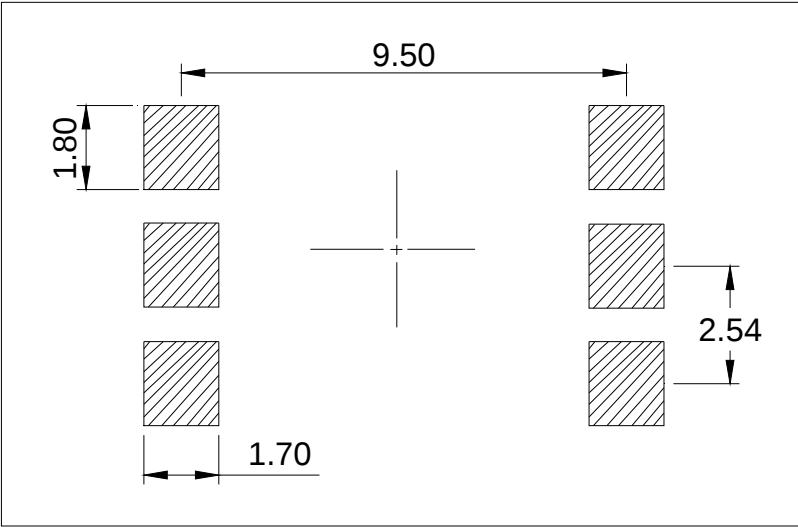
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	6.20		6.60	0.244		0.260
B	6.92		7.32	0.272		0.288
C	7.15		8.95	0.281		0.352
D	3.20		3.60	0.126		0.142
E	7.32		7.92	0.288		0.312
F	0.15		0.35	0.006		0.014
G	1.15		1.35	0.045		0.053
H	3.90		4.50	0.154		0.177
I	0.40		0.60	0.016		0.024
J	2.29		2.79	0.090		0.110
K	2.24		3.24	0.088		0.128

Option SMD Type:

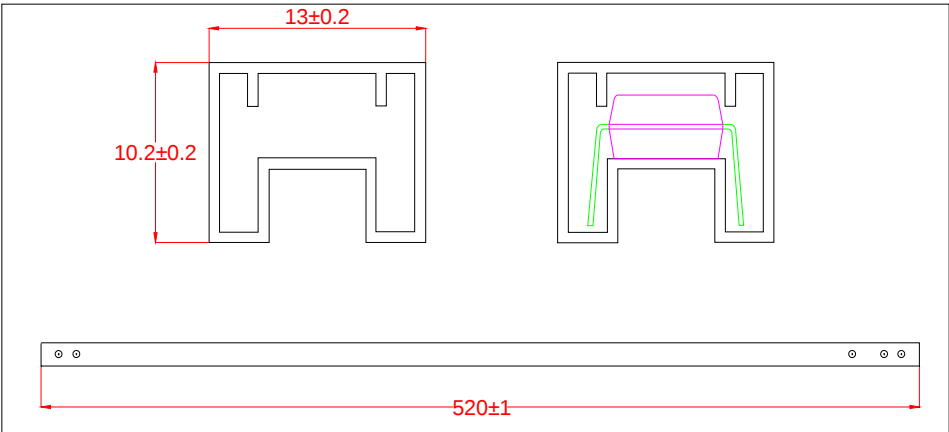


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	6.20		6.60	0.244		0.260
B	6.92		7.32	0.272		0.288
C	9.50		10.50	0.375		0.413
D	3.20		3.60	0.126		0.142
E	7.32		7.92	0.288		0.312
F	0.05		0.35	0.002		0.014
G	0.16		0.36	0.006		0.014
H	0.60		1.40	0.024		0.055
I	0.90		1.50	0.035		0.059
J	3.30		3.90	0.130		0.154
K	2.29		2.79	0.090		0.110

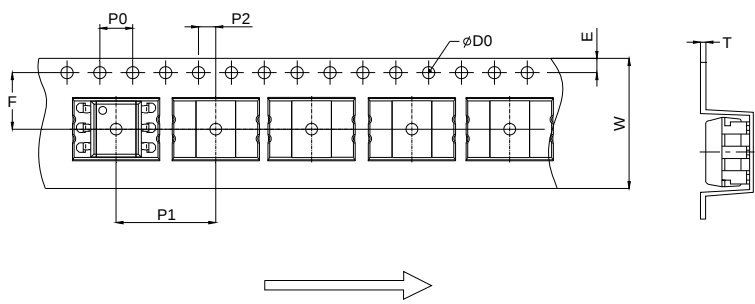
Option SMD



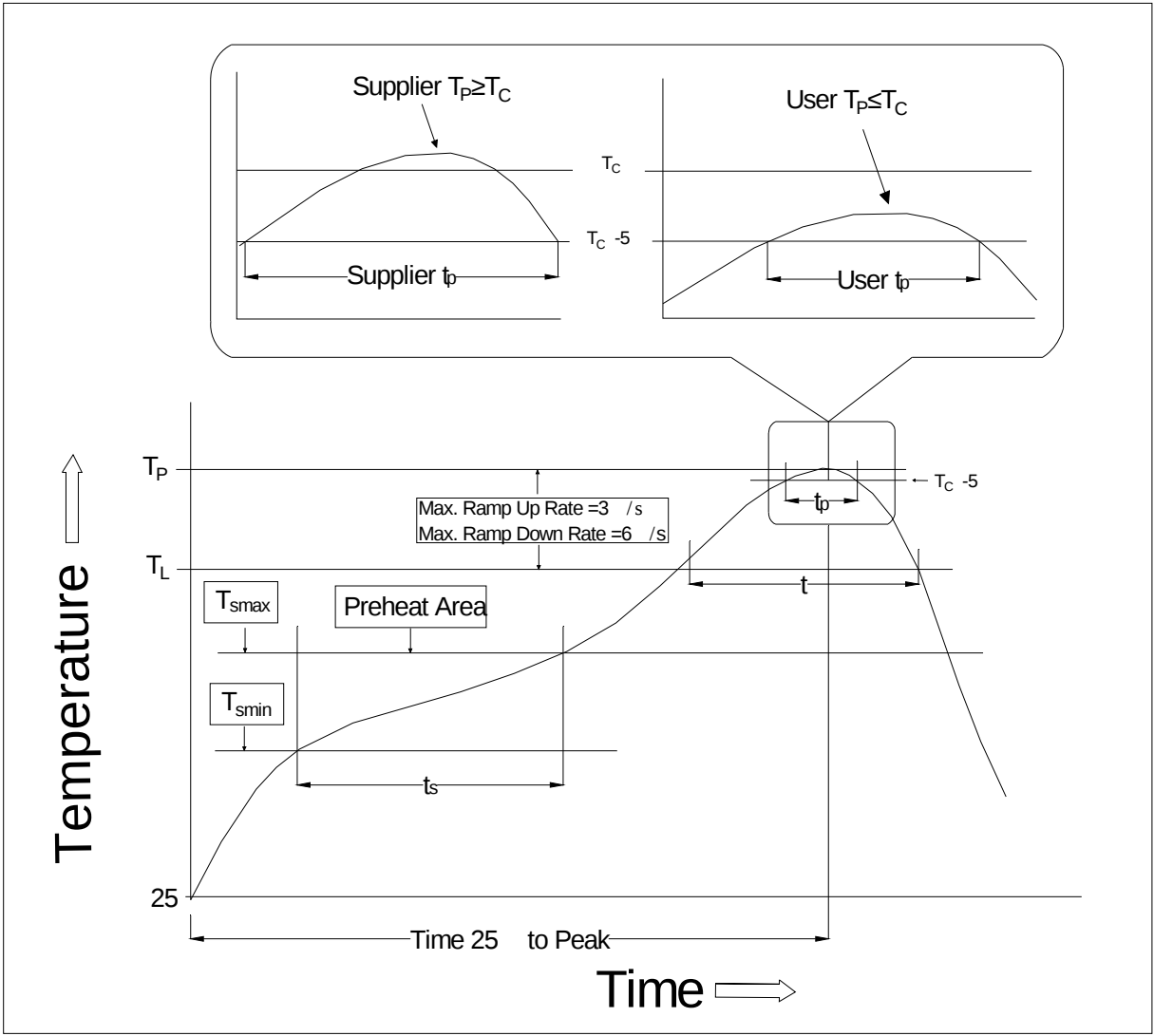
Standard DIP



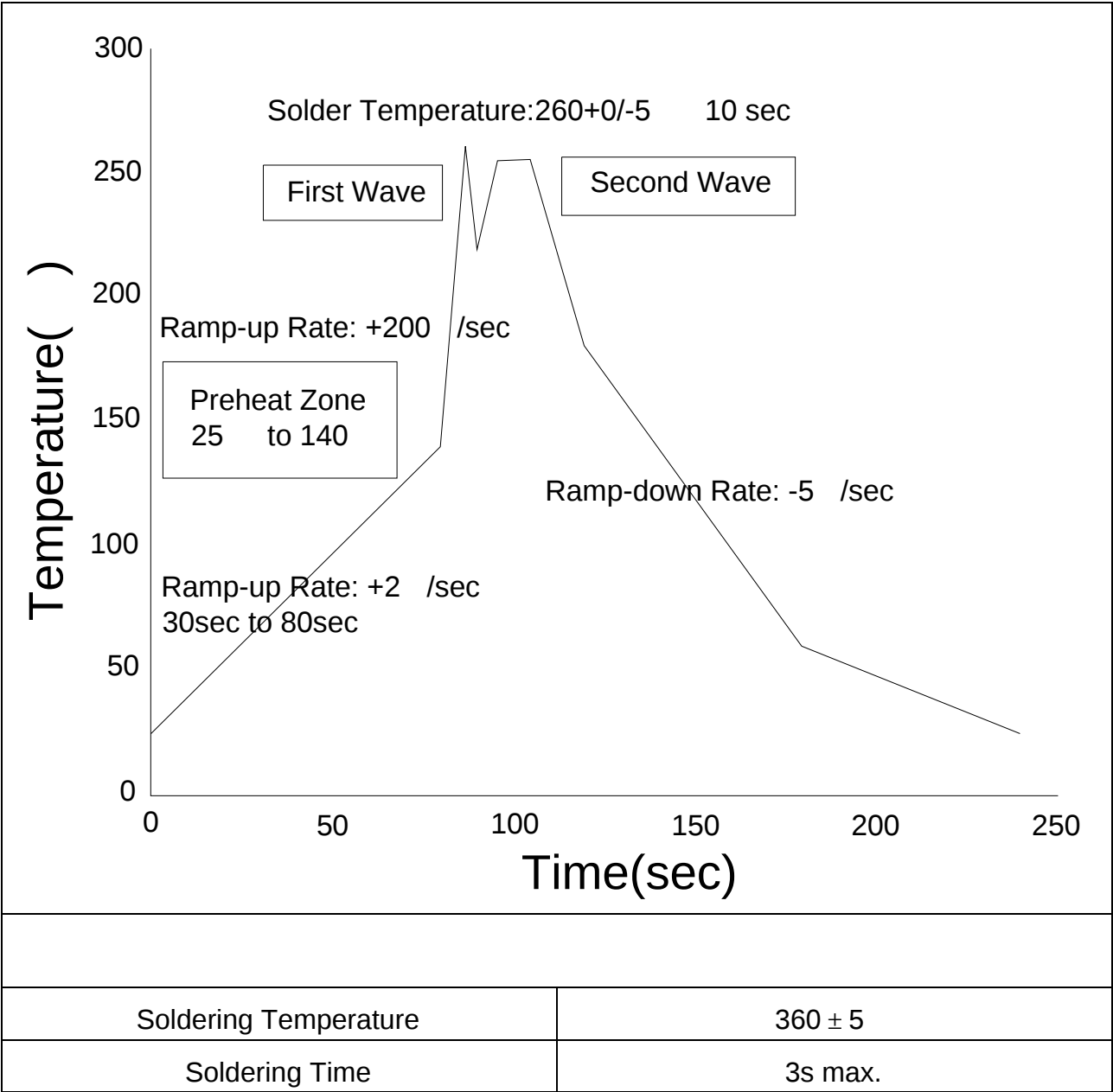
Option S/L



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



Temperature Min. (Tsmin)	150
Temperature Max. (Tsmax)	200
Time (ts) from (Tsmin to Tsmax)	60-120 seconds
Ramp-up Rate (tL to tP)	3 °C/second max.
Liquidus Temperature (TL)	217
Time (tL) Maintained Above (TL)	60-120 seconds
Peak Body Package Temperature	260 +0 °C/-5
Time (tP) within 5 °C of 260	10 seconds
Ramp-down Rate (TP to TL)	6 °C/second 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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