

JOCMB83Ch-D8P/S Series

Rev.A.1.0

DESCRIPTION:

The products are 8-pin optical relays. The device consists of an AlGaAs infrared emitting diode input stage optically coupled to a high-voltage output detector circuit in a plastic DIP8 package with different lead forming options. The detector consists of a high-speed photovoltaic diode array and driver circuitry. The products are widely used in isolation in high-speed inspection machines, telephones equipment and computers.

MAIN FEATURES

High isolation 5000 Vrms

Operating temperature range -40°C to 125°C

REACH & RoHS compliance

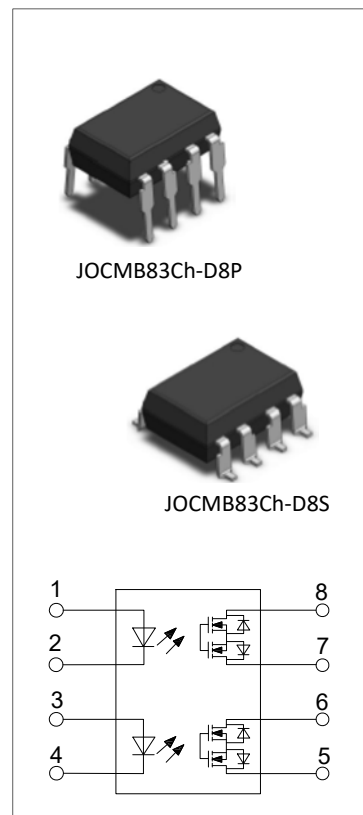
HBM: H3A; MM: M4; CDM: C3

CQC approved

VDE approved

UL approved

AECQ101 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	75	mW
Output	Load Voltage	V_O	600	V
	Continuous load current	I_O	0.05	A
	Output Power Dissipation	P_O	600	mW
Total Power Dissipation		P_{tot}	675	mW
Isolation Voltage		V_{iso}	5000 ^②	Vrms
Operating Temperature		T_{opr}	-40~125	°C
Junction Temperature		T_j	135	°C
Storage Temperature		T_{stg}	-40~125	°C

Soldering Temperature	T_{sol}	260	°C
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NOTE1 : 100 μ s pulse, 100Hz frequency

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

ELECTRICAL CHARACTERISTICS (Temperature=25°C)

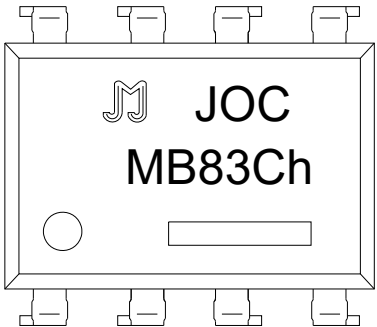
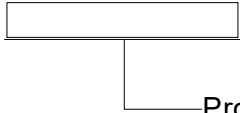
Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit
Input	Forward Voltage	V_F	$I_F=10mA$	-	1.3	1.5	V
	Reverse Current	I_R	$V_R=6V$	-	-	1	μA
	Action Current	$I_{F(ON)}$	$I_O=I_{O(MAX)}$	-	1.5	3	mA
	Reset Current	$I_{F(OFF)}$	$I_O=I_{O(MAX)}$	0.4	0.8	-	mA
Output	On Resistance	R_{on}	$I_F=5mA$ $I_O=Max.$ Within 1s on time	-	30	40	Ω
	Off State Leakage Current	I_{Leak}	$I_F=0mA$, $V_O=Max.$	-	-	1	μA
	Output Capacitance	C_{OFF}	$V_{OFF}=0V$, $f_o=1MHz$	10	-	1000	pF
Switching Characteristics	Isolation Resistance	R_{ISO}	DC500V 40~60%R.H.	10^{12}	-	-	Ω
	Floating Capacitance	C_{IO}	$V=0$, $f=1MHz$	-	1.5	-	pF
	Turn On Time	t_{on}	$I_F=5mA$, $I_O=Max.$	-	0.18	0.5	ms
	Turn Off Time	t_{off}	$I_F=5mA$, $I_O=Max.$	-	0.2	1	ms

ORDERING INFORMATION

J	OC	M	B	8	3	C	h	-D8P/S	/
JieJie Microelectronics Co., Ltd.	Opto Coupler	MOS	B:2NO	$V_O:600V$	$I_O:0.05A$	$C:I_{FT}\leq 3mA$	h:Automotive-grade	P:DIP8 S:SMD8	S:T3 L:T4

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

	 Production Information Code
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Characteristics Curves

FIG.1: LED Dropout Voltage vs. Ambient Temperature

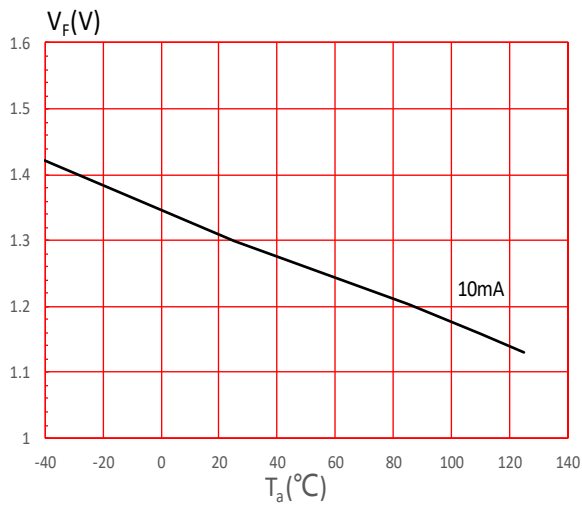


FIG.3: On Resistance vs. Ambient Temperature

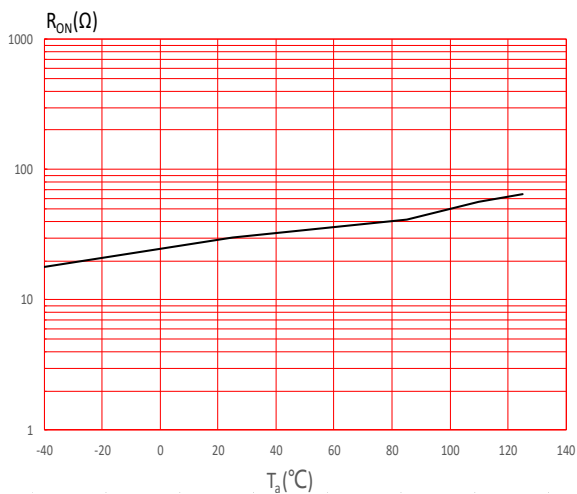


FIG.5: LED Operate Current vs. Ambient Temperature

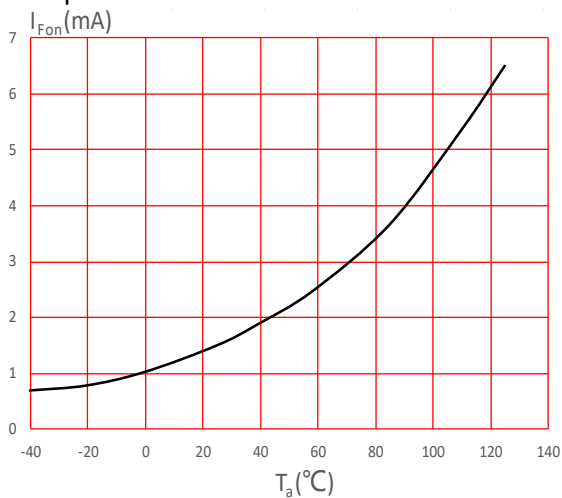


FIG.2: Output Current vs. Output Voltage

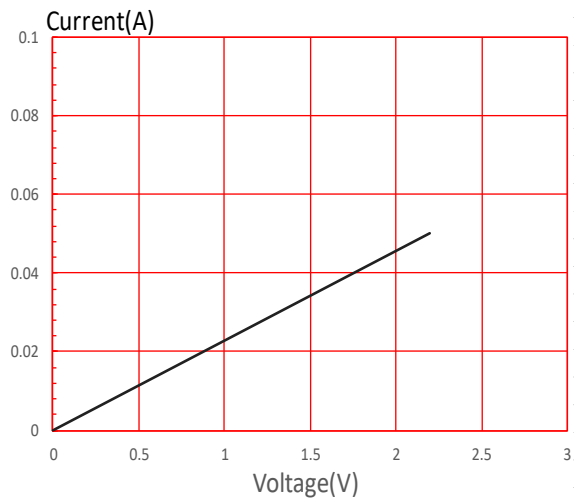


FIG.4: Load Current vs. Ambient Temperature

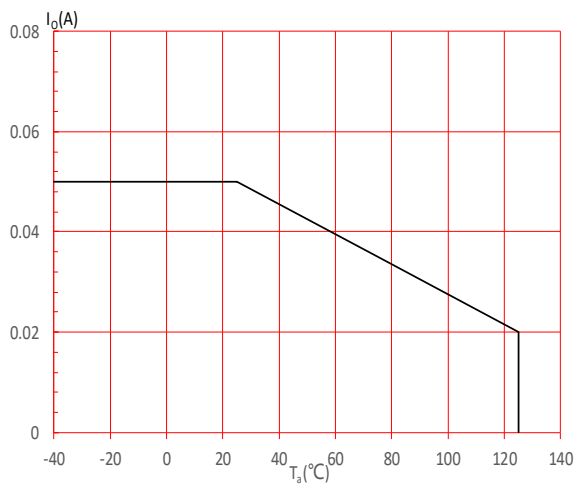


FIG.6: LED Turn Off Current vs. Ambient Temperature

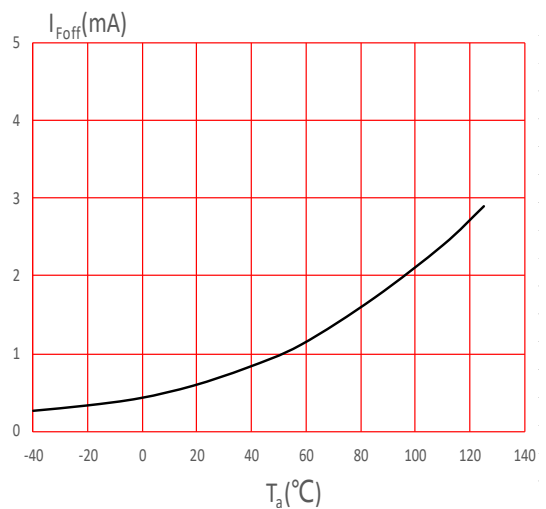


FIG.7: Turn On Time vs. Ambient Temperature

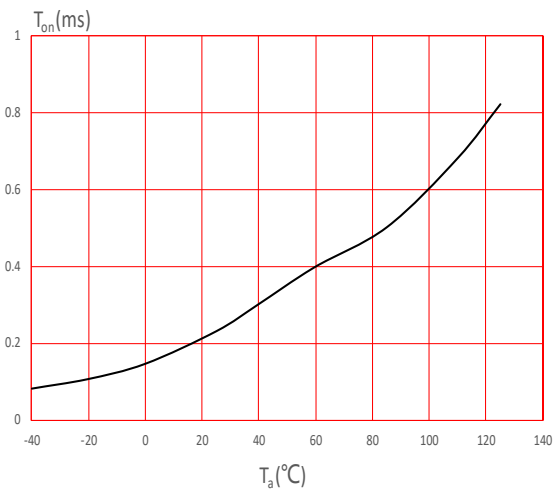


FIG.8: Turn Off Time vs. Ambient Temperature

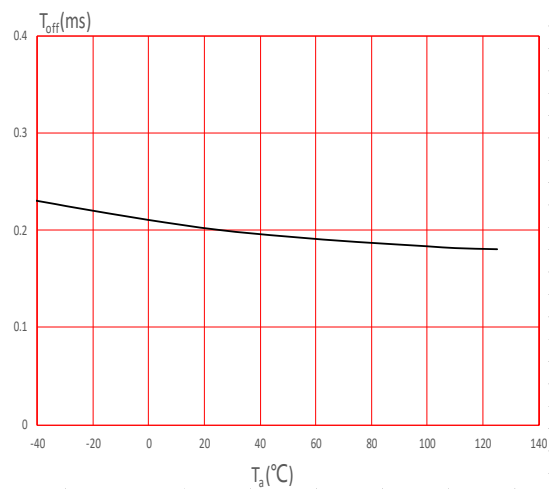


FIG.9: Turn On Time vs. LED Forward Current

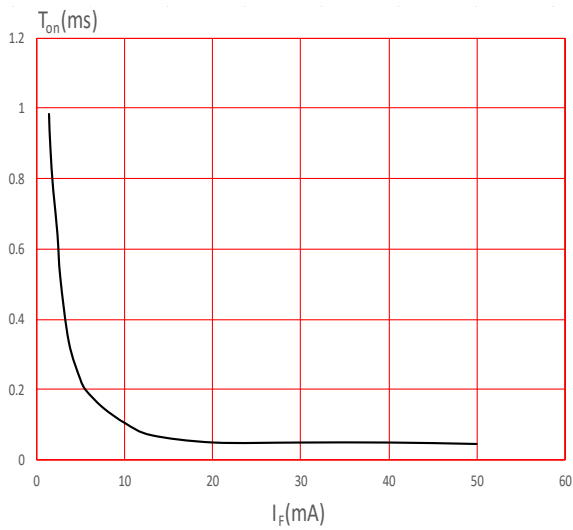


FIG.10: Turn Off Time vs. LED Forward Current

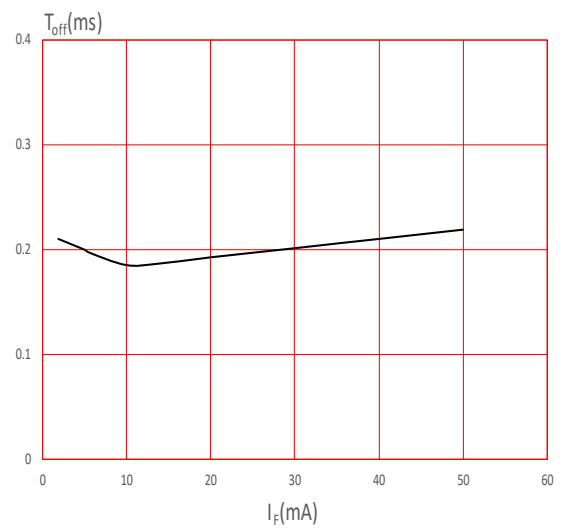


FIG.11: Off State Leakage Current vs. Load Voltage

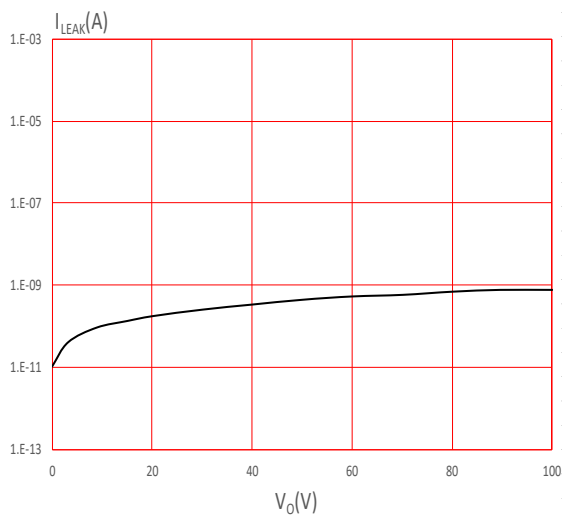
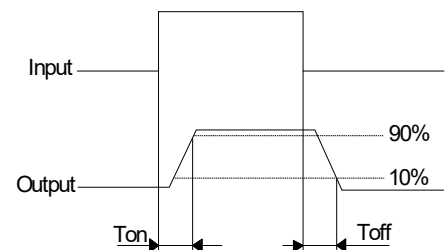
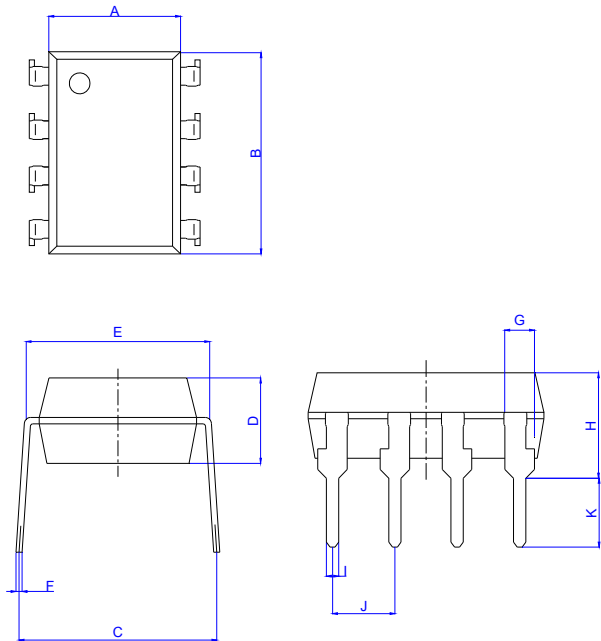


Fig.12: Turn on/Turn off time



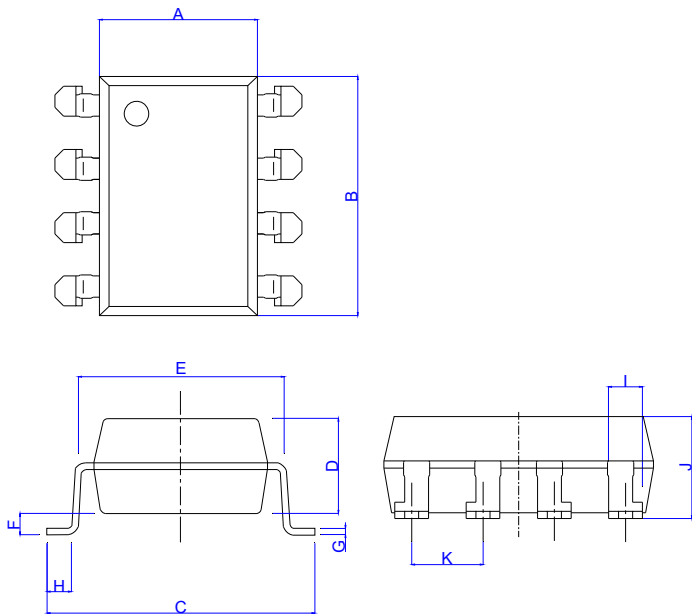
Package Dimension (Unit: mm)

Standard DIP Type:



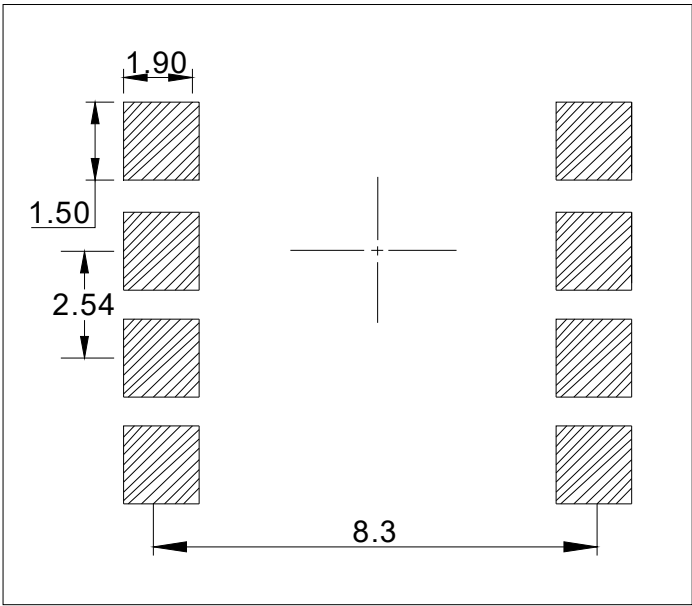
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	6.20		6.60	0.244		0.260
B	9.40		9.80	0.370		0.386
C	7.15		8.95	0.281		0.352
D	3.20		3.60	0.126		0.142
E	7.32		7.92	0.288		0.312
F	0.15		0.35	0.006		0.014
G	0.90		1.50	0.035		0.059
H	3.90		4.50	0.154		0.177
I	0.40		0.60	0.016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

Option SMD Type:



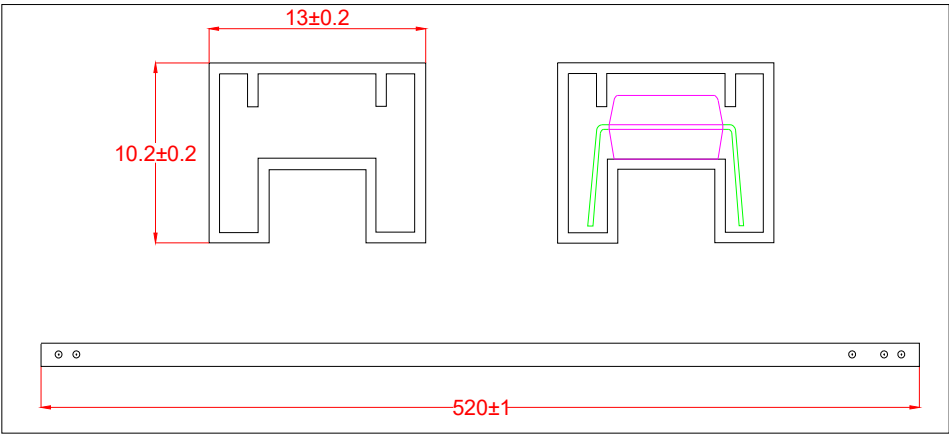
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	6.20		6.60	0.244		0.260
B	9.40		9.80	0.370		0.386
C	9.50		10.50	0.374		0.413
D	3.20		3.60	0.126		0.142
E	7.32		7.92	0.288		0.312
F	0.05		0.35	0.002		0.014
G	0.16		0.36	0.006		0.014
H	0.60		1.40	0.024		0.055
I	0.90		1.50	0.035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



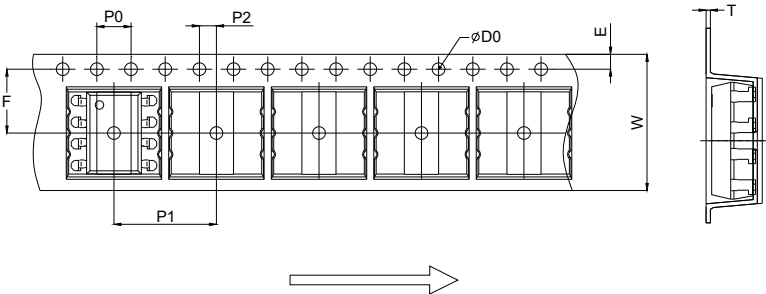
TUBE SPECIFICATIONS (Dimensions in mm unless otherwise stated)

Standard DIP



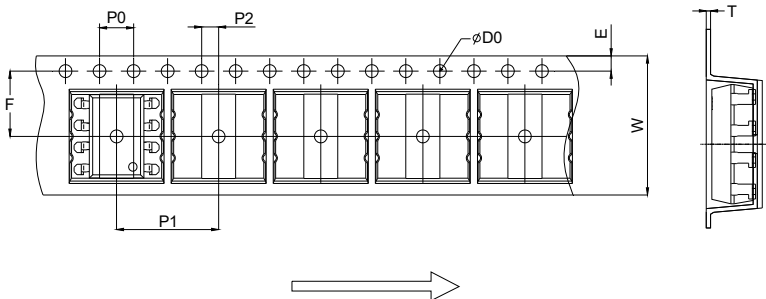
CARRIER TAPE SPECIFICATIONS (Dimensions in mm unless otherwise stated)

Option S



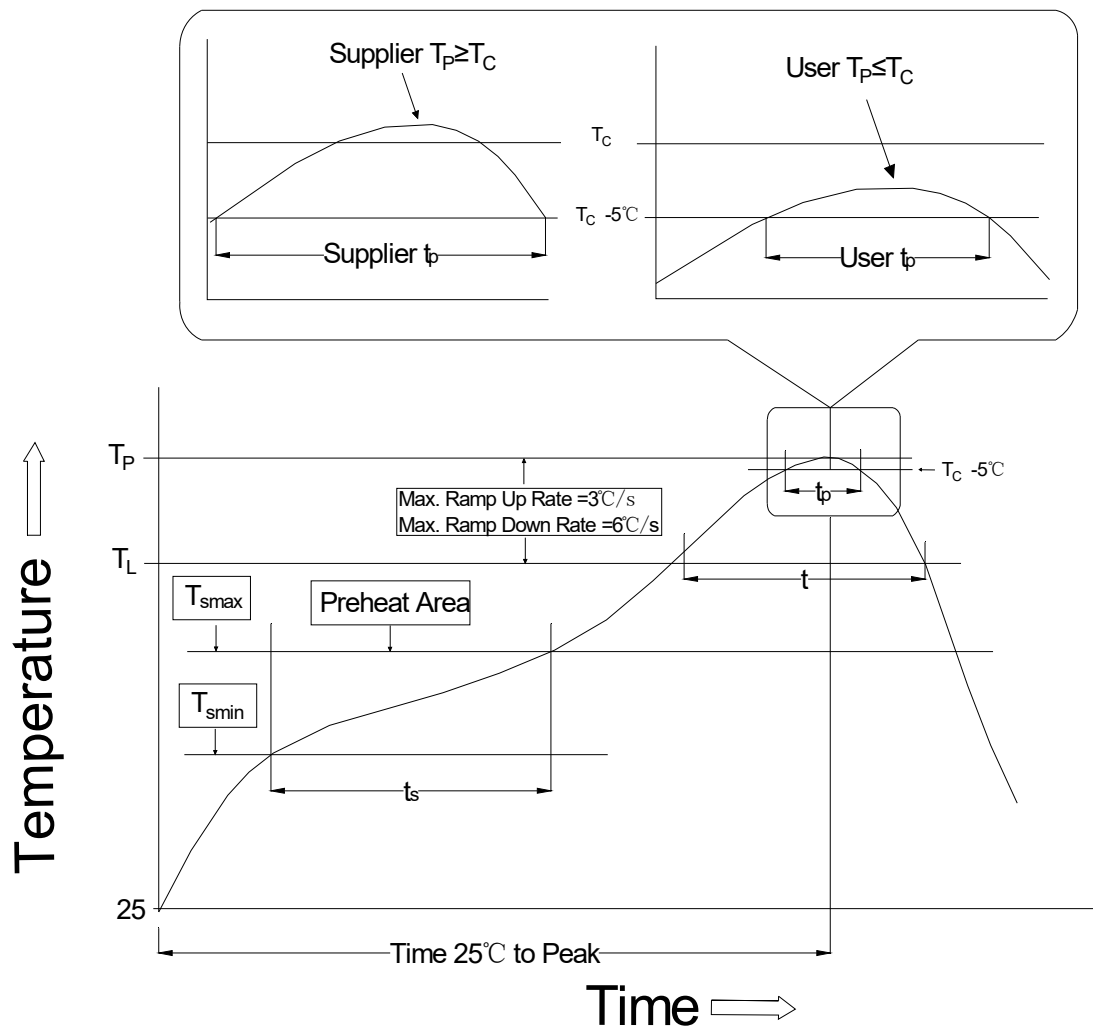
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
D0		1.50	1.60		0.059	0.063
P0	3.90	4.00	4.10	0.154	0.157	0.161
P1	11.90	12.00	12.10	0.469	0.472	0.476
P2	1.90	2.00	2.10	0.075	0.079	0.083
E	1.65	1.75	1.85	0.065	0.069	0.073
F	7.40	7.50	7.60	0.291	0.295	0.299
T	0.35	0.40	0.45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

Option L



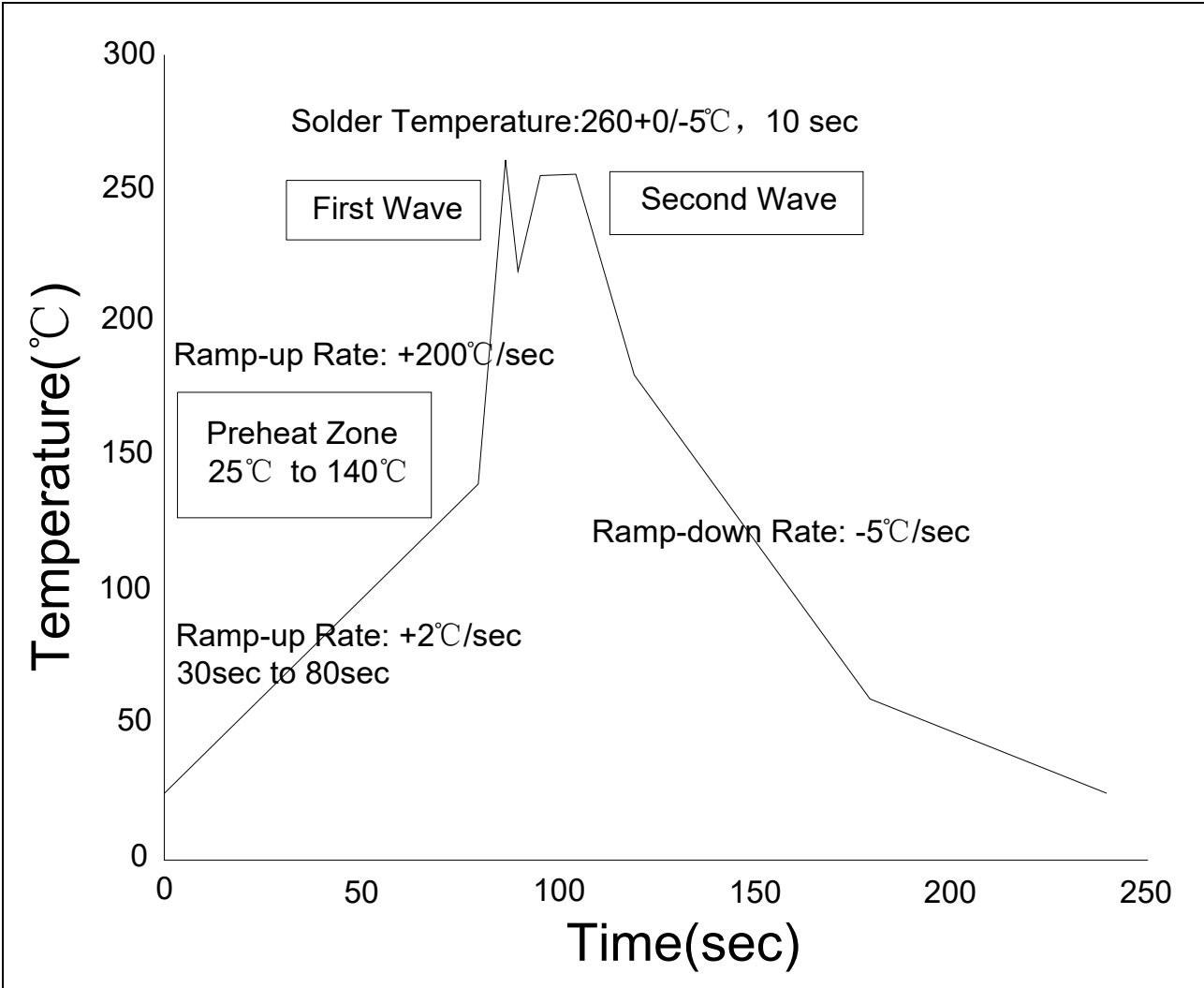
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
D0		1.50	1.60		0.059	0.063
P0	3.90	4.00	4.10	0.154	0.157	0.161
P1	11.90	12.00	12.10	0.469	0.472	0.476
P2	1.90	2.00	2.10	0.075	0.079	0.083
E	1.65	1.75	1.85	0.065	0.069	0.073
F	7.40	7.50	7.60	0.291	0.295	0.299
T	0.35	0.40	0.45	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_{smin})	100°C	150°C
Temperature Max. (T_{smax})	150°C	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)	$3^\circ\text{C/second max.}$	$3^\circ\text{C/second max.}$
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	$235^\circ\text{C} + 0^\circ\text{C} / -5^\circ\text{C}$	$260^\circ\text{C} + 0^\circ\text{C} / -5^\circ\text{C}$
Time (t_P) within 5°C of 260°C	10 seconds	10 seconds
Ramp-down Rate (T_P to T_L)	$3-6^\circ\text{C/second}$	$3-6^\circ\text{C/second}$
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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