



JOCMAXXC-D4P/S Series

Rev.A.1.0

DESCRIPTION:

The products are 4-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 DIP4 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 measuring and testing equipment, security and disaster prevention market, industrial machinery and equipment.

MAIN FEATURES

High isolation 5000 Vrms

Wide variation of load voltage 60V to 600V

Operating temperature range -40°C to 110°C

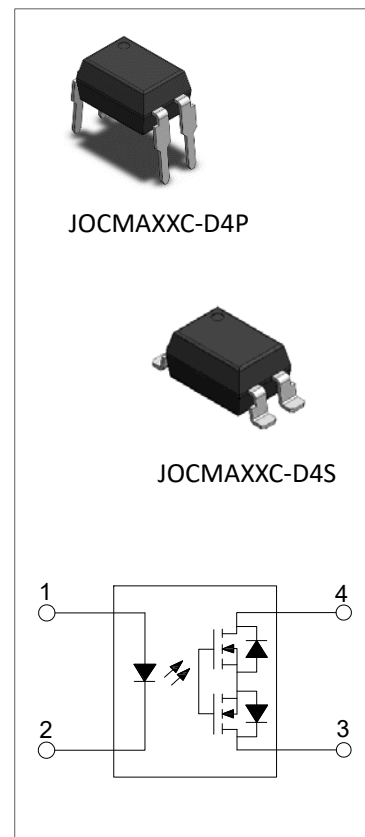
REACH & RoHS compliance

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	75	mW
Output	Load Voltage	JOCMA39C	60	V
		JOCMA38C	60	
		JOCMA58C	100	
		JOCMA67C	200	
		JOCMA66C	200	
		JOCMA75C	400	
		JOCMA74C	400	
		JOCMA83C	600	
	Continuous load current	JOCMA39C	2	A
		JOCMA38C	1.25	
		JOCMA58C	1.25	
		JOCMA67C	0.5	

		JOCMA66C		0.3	
		JOCMA75C		0.18	
		JOCMA74C		0.1	
		JOCMA83C		0.05	
		Output Power Dissipation		P _O	300
Total Power Dissipation			P _{tot}	375	mW
Isolation Voltage			V _{iso}	5000 ^②	V _{rms}
Operating Temperature			T _{opr}	-40~110	℃
Junction Temperature			T _j	125	℃
Storage Temperature			T _{stg}	-40~125	℃
Soldering Temperature			T _{sol}	260	℃

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	-	1.3	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	JOCMA39C	R _{on} I _F =5mA I _O =Max. Within 1s on time	-	0.05	0.1	Ω
		JOCMA38C		-	0.2	0.4	
		JOCMA58C		-	0.15	0.4	
		JOCMA67C		-	1.5	4	
		JOCMA66C		-	2	4	
		JOCMA75C		-	8	15	
		JOCMA74C		-	20	30	
		JOCMA83C		-	30	40	
	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	-	0.8	-	pF
	Turn On Time	JOCMA39C	I _F =5mA, I _O =Max.	-	1	2	ms
		JOCMA38C		-	0.6	2	
		JOCMA58C		-	0.6	2	
		JOCMA67C		-	0.25	0.5	

		JOCMA66C			-	0.25	0.5	
		JOCMA75C			-	0.23	0.5	
		JOCMA74C			-	0.21	0.5	
		JOCMA83C			-	0.18	0.5	
	Turn Off Time	JOCMA39C	t_{off}	$I_F=5mA,$ $I_O=Max.$	-	0.2	1	ms
		JOCMA38C			-	0.2	1	
		JOCMA58C			-	0.2	1	
		JOCMA67C			-	0.2	1	
		JOCMA66C			-	0.2	1	
		JOCMA75C			-	0.2	1	
		JOCMA74C			-	0.2	1	
		JOCMA83C			-	0.2	1	

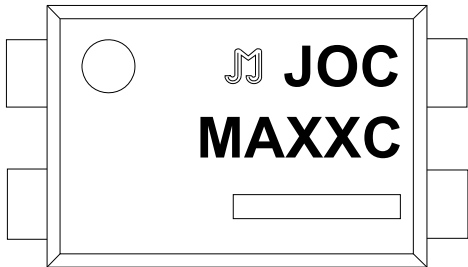
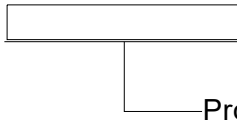
ORDERING INFORMATION

J	OC	M	A	3	8	C	-D4P/S	/
JieJie Microelectronics Co., Ltd.	Opto Coupler	MOS	A:1NO			C: $I_{FT} \leq 3mA$	P:DIP4 S:SMD4	None:T1 R:T2
			3:V _O :60V 5:V _O :100V 6:V _O :200V 7:V _O :400V 8:V _O :600V		9:I _O :2A 8:I _O :1.25A 7:I _O :0.5A 6:I _O :0.3A 5:I _O :0.18A 4:I _O :0.1A 3:I _O :0.05A			

Packing Quantity

Option	Quantity	Quantity – Inner box	Quantity –Outer box
DIP	100 Units/Tube	32 Tubes/Inner box	10 Inner box/Outer box =32k Units
SMD	1500 Units/Reel	3 Reels/Inner box	5 Inner box/Outer box =22.5k Units

MARKING

	 Production Information Code
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Characteristics Curves

FIG.1: LED Dropout Voltage vs. Ambient Temperature

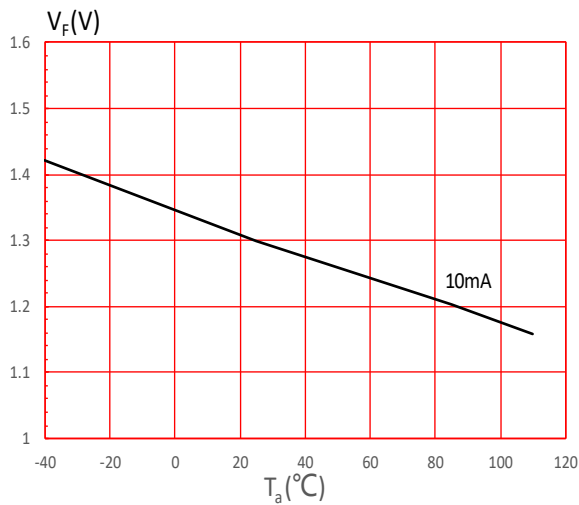


FIG.3: On Resistance vs. Ambient Temperature

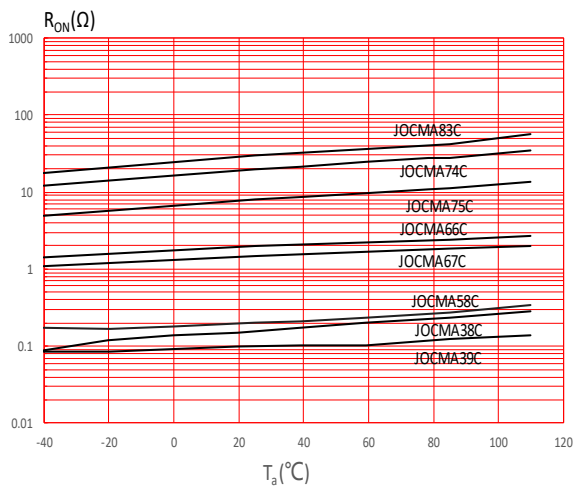


FIG.5: LED Operate Current vs. Ambient Temperature

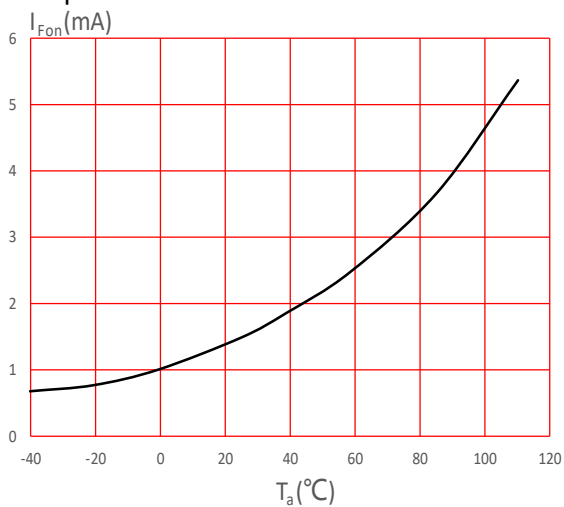


FIG.2: Output Current vs. Output Voltage

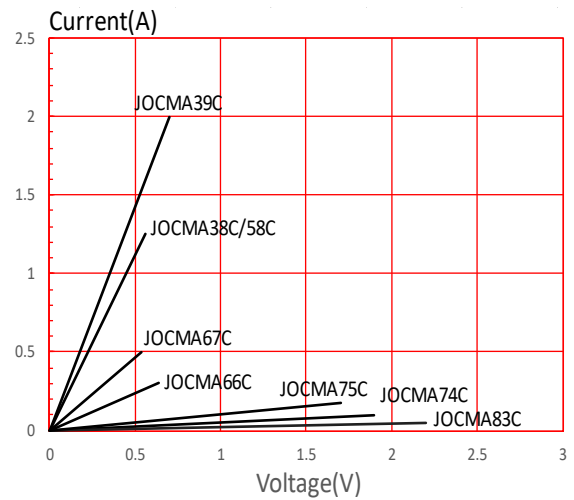


FIG.4: Load Current vs. Ambient Temperature

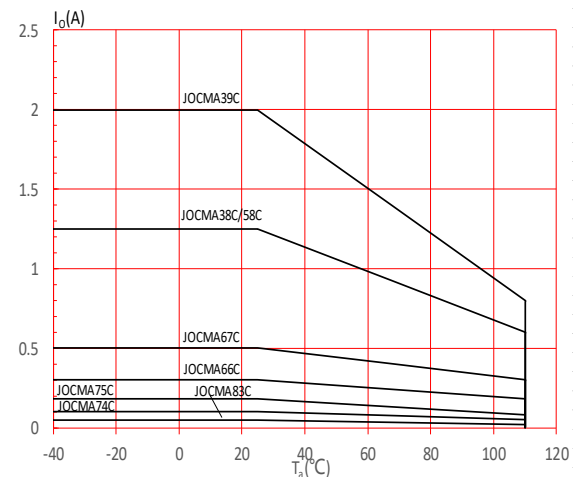


FIG.6: LED Turn Off Current vs. Ambient Temperature

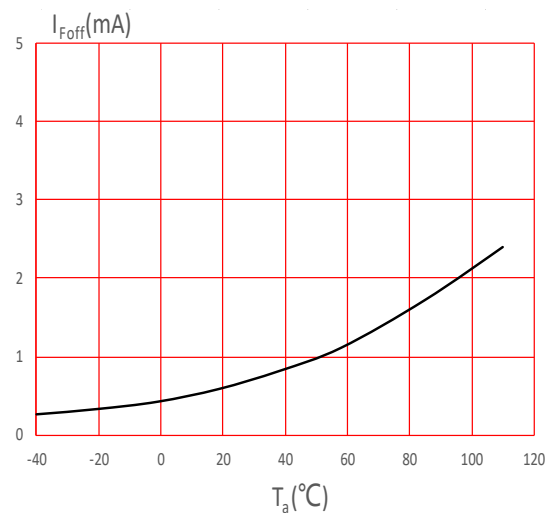


FIG.7: Turn On Time vs. Ambient Temperature

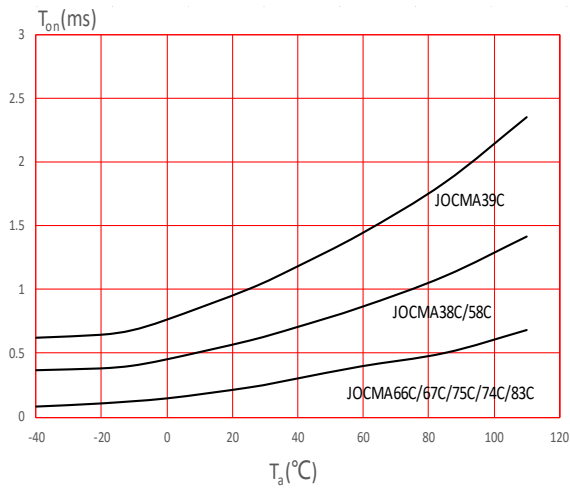


FIG.8: Turn Off Time vs. Ambient Temperature

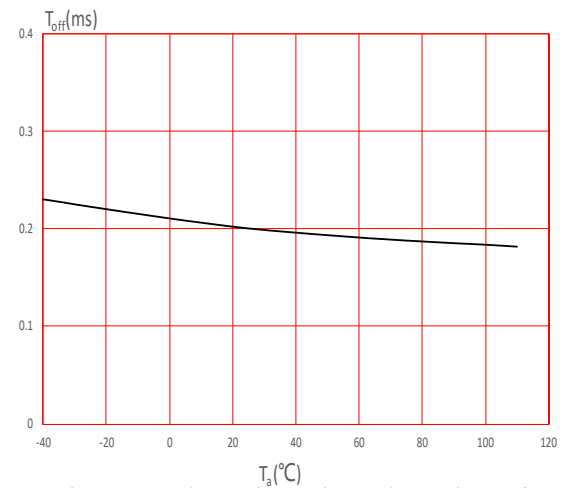


FIG.9: Turn On Time vs. LED Forward Current

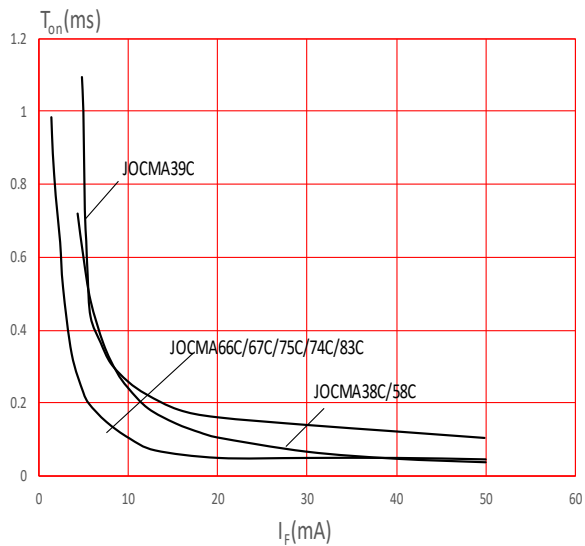


FIG.10: Turn Off Time vs. LED Forward Current

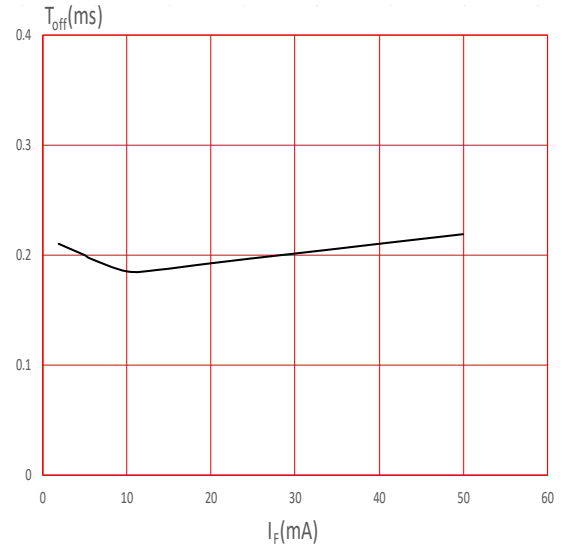


FIG.11: Off State Leakage Current vs. Load Voltage

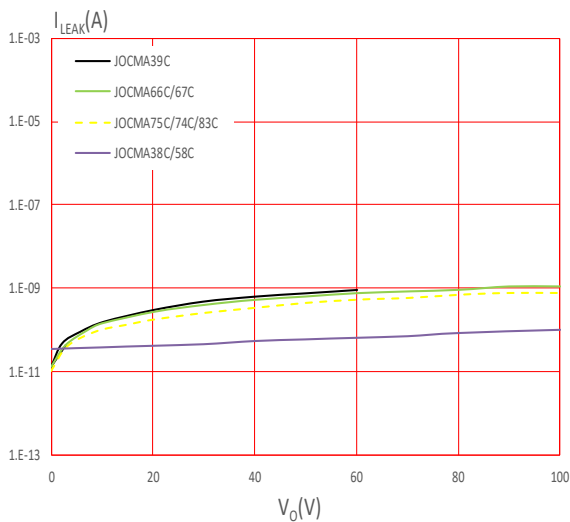
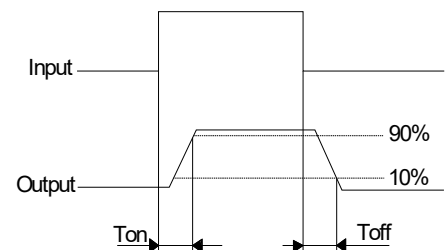
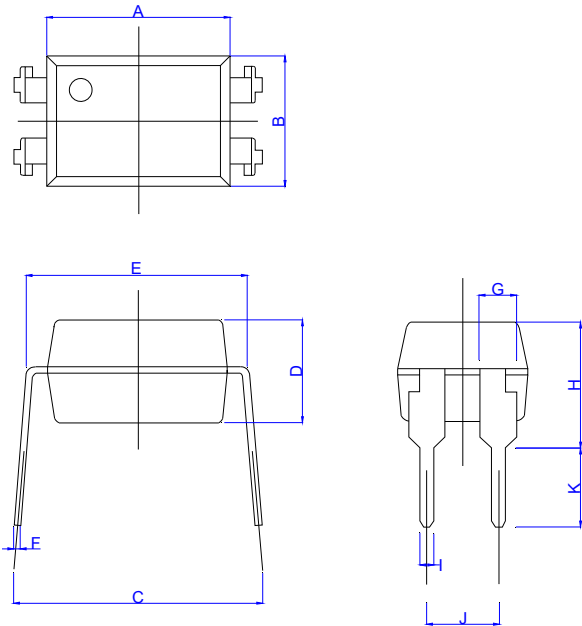


Fig.12: Turn on/Turn off time



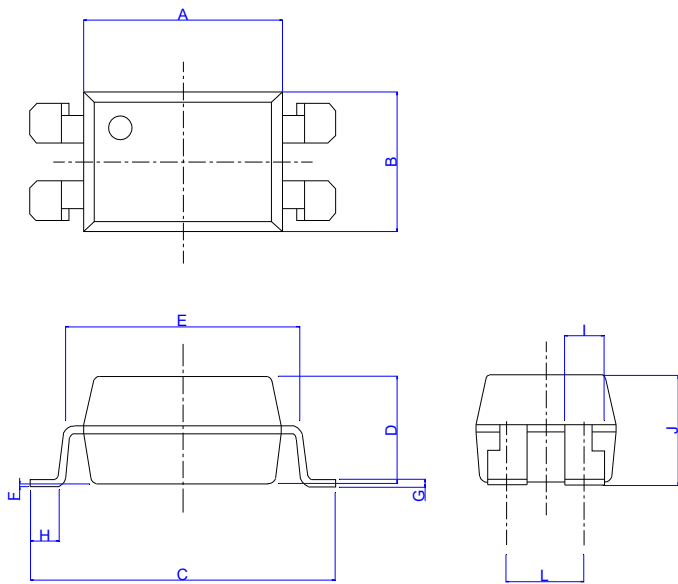
Package Dimension (Unit: mm)

Standard DIP Type:

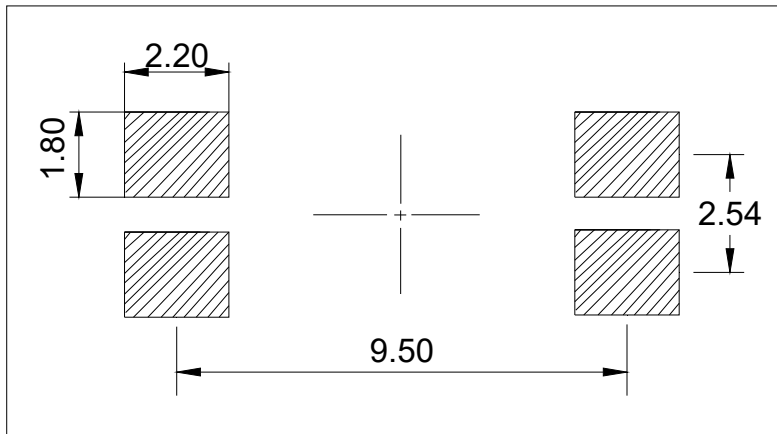
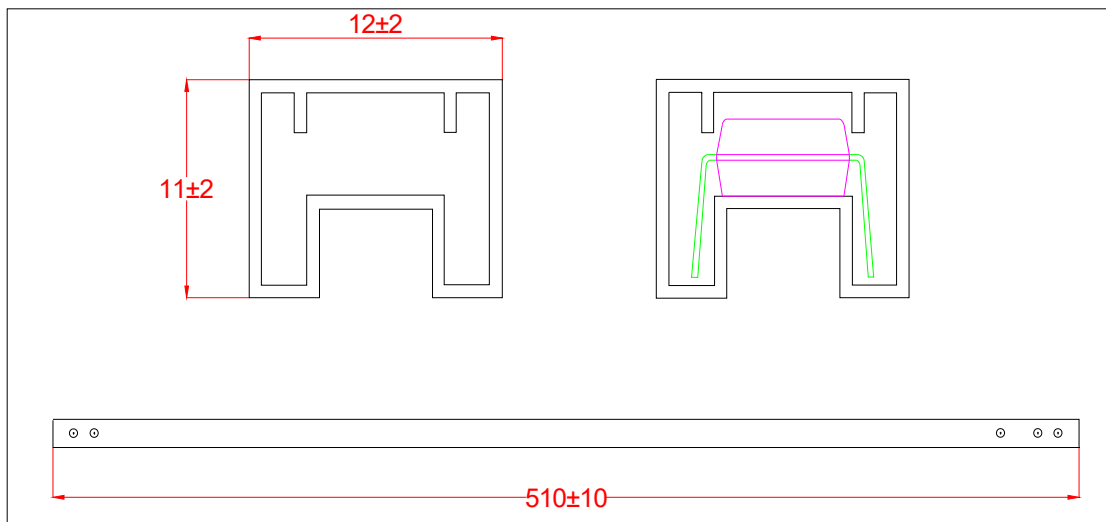


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	6.20		6.80	0.244		0.268
B	4.30		4.90	0.169		0.193
C	7.10		9.50	0.280		0.374
D	3.20		3.80	0.126		0.150
E	7.32		7.92	0.288		0.312
F	0.20		0.30	0.008		0.012
G	1.10		1.50	0.043		0.059
H	4.20		4.80	0.165		0.189
I	0.40		0.60	0.016		0.024
J	2.34		2.74	0.092		0.108
K	2.45		3.10	0.096		0.122

Option SMD Type:

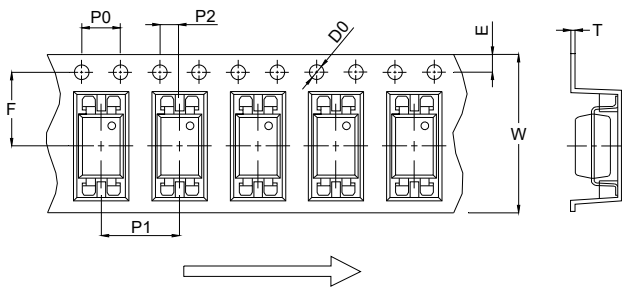


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	6.20		6.80	0.244		0.268
B	4.30		4.90	0.169		0.193
C	9.85		10.50	0.388		0.413
D	3.20		3.80	0.126		0.150
E	7.32		7.92	0.288		0.312
F	0.00		0.30	0.000		0.012
G	0.15		0.35	0.006		0.014
H	0.50		1.10	0.020		0.043
I	1.10		1.50	0.043		0.059
J	3.20		4.10	0.126		0.161
L	2.44		2.64	0.096		0.104

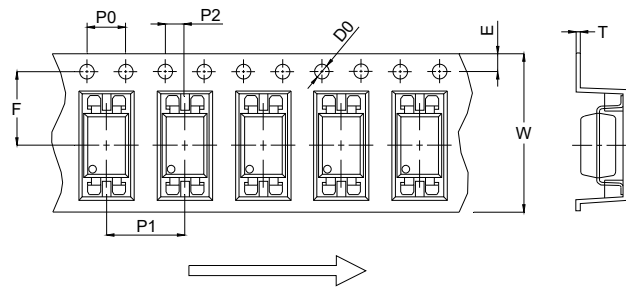
RECOMMENDED SOLDER MASK (Dimensions in mm unless otherwise stated)**Option SMD****TUBE SPECIFICATIONS (Dimensions in mm unless otherwise stated)****Standard DIP**

CARRIER TAPE SPECIFICATIONS (Dimensions in mm unless otherwise stated)

Option None

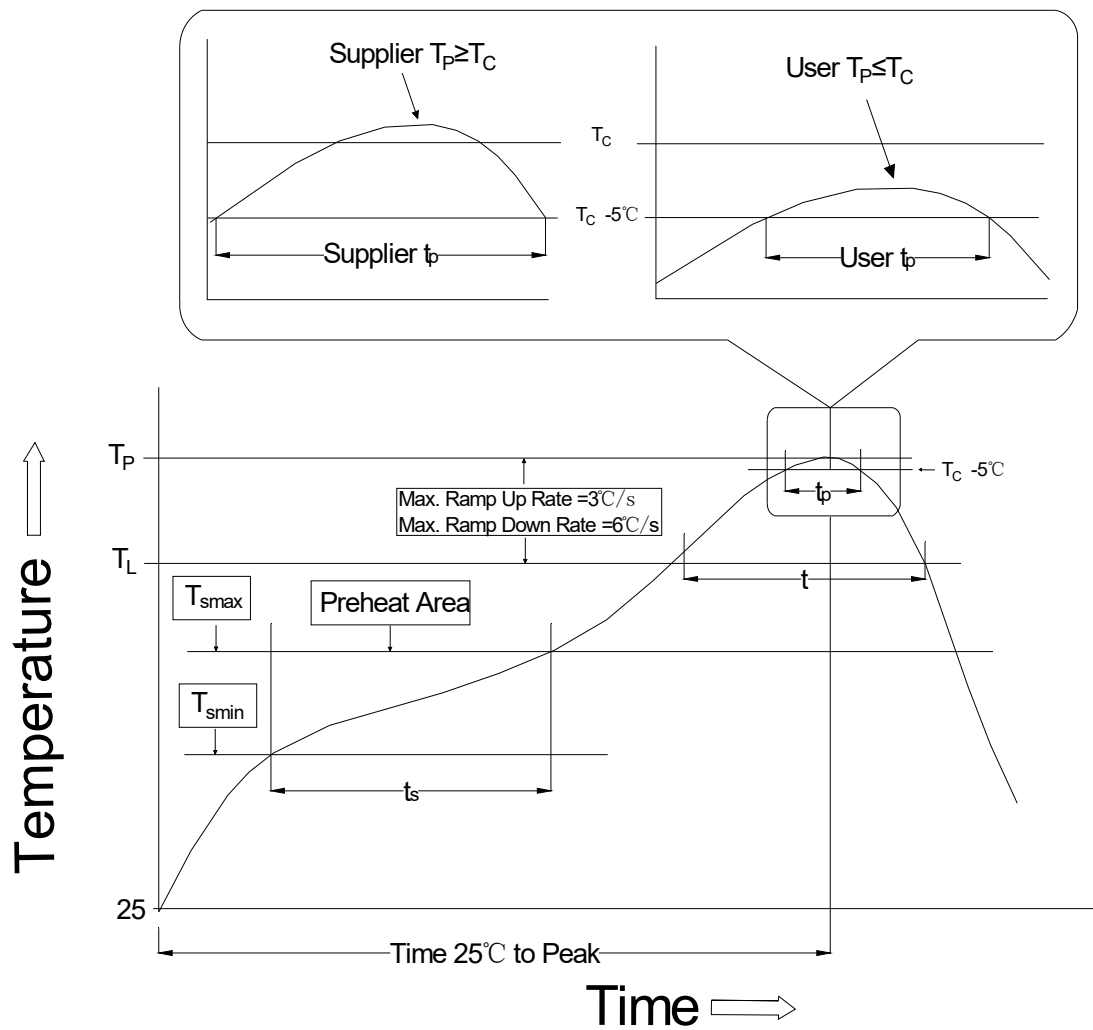


Option R



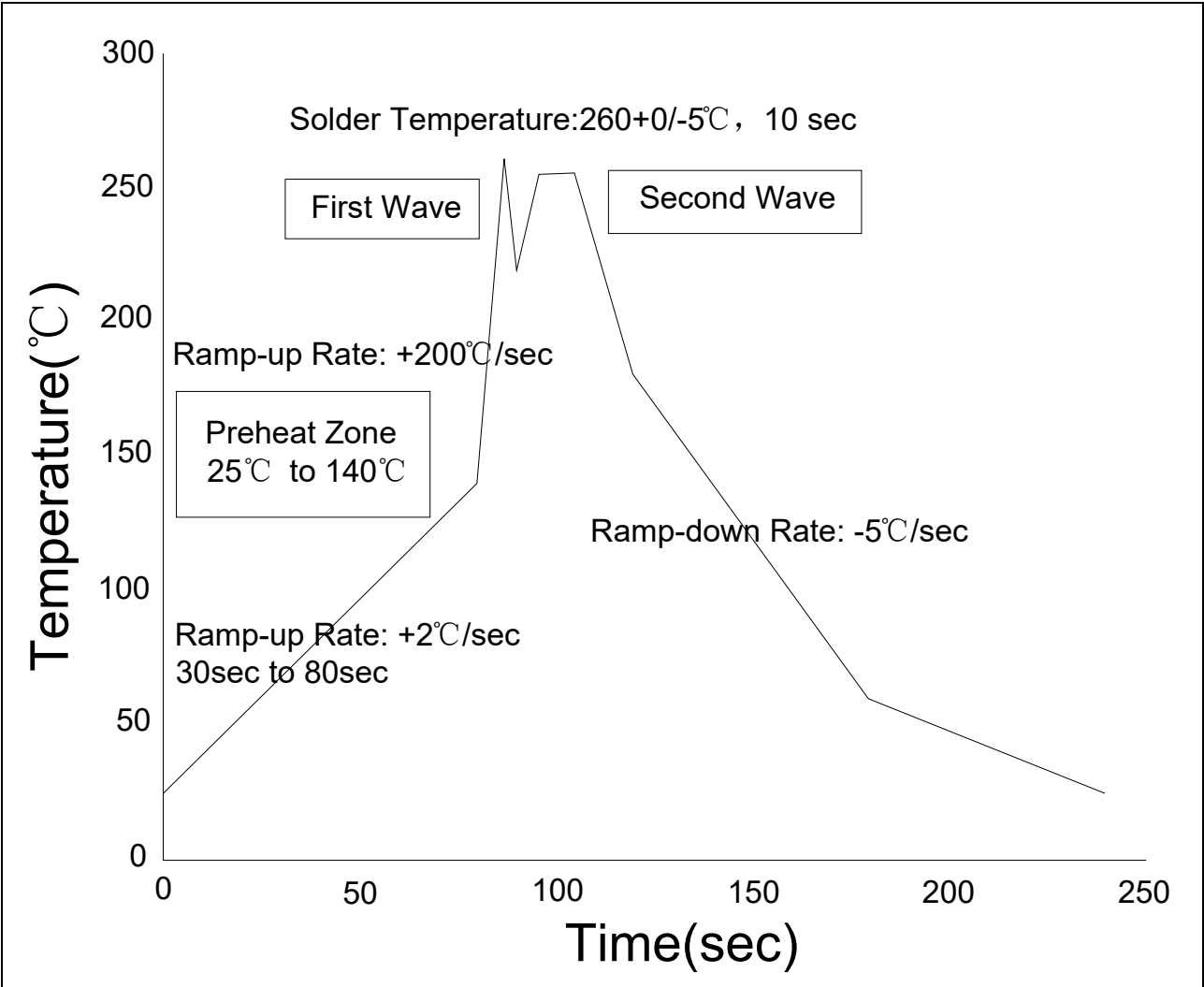
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
D0		1.50	1.60		0.059	0.065
P0	3.90	4.00	4.10	0.154	0.157	0.161
P1	7.90	8.00	8.10	0.311	0.315	0.319
P2	1.90	2.00	2.10	0.075	0.079	0.083
E	1.65	1.75	1.85	0.065	0.069	0.073
F	7.40	7.50	7.60	0.291	0.295	0.299
T	0.35	0.40	0.45	0.014	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°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°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	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



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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