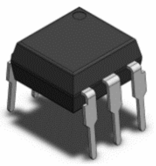
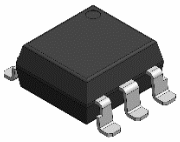
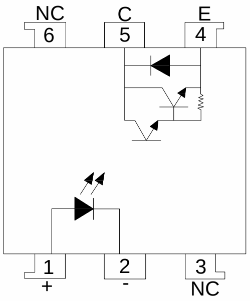
The products are Darlington transistor opto-couplers in a plastic DIP6 package with different lead forming options. The device combines an AlGaAs infrared emitting diodeas the emitter which is optically coupled to a silicon planar phototransistor detector. With the robust coplanar double mold structure, the device provides the most stable isolation feature. The products are widely used in switch mode power supplies, programmable controllers, household appliances and office equipment.



JOCTY12X-D6P



JOCTY12X-D6S



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

(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	Collector-emitter Voltage	V_{CEO}	300	V
	Emitter-collector Voltage	V_{ECO}	0.3	V
	Collector Current	I_C	150	mA
	Power Dissipation	P_C	150	mW
Total Power Dissipation		P_{tot}	225	mW
Isolation Voltage		V_{iso}	5000	Vrms
Operating Temperature		T_{opr}	-40~+110	
Junction Temperature		T_j	125	

Storage Temperature	T_{stg}	-55~+125	
Soldering Temperature	T_{sol}	260	

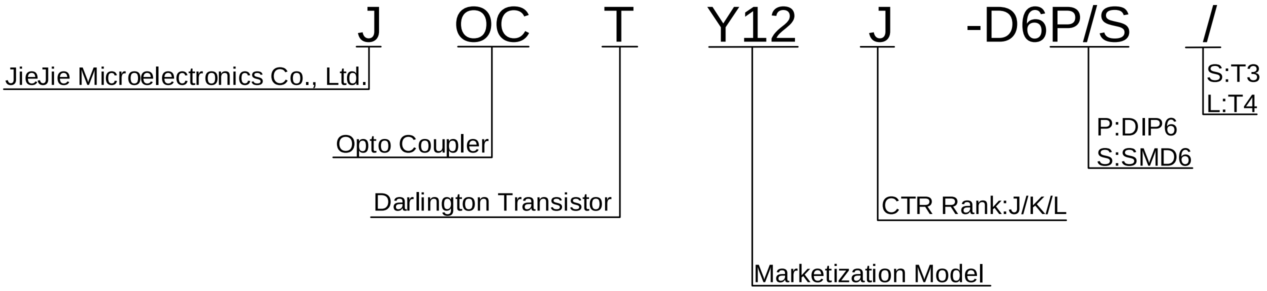
:100μs pulse, 100Hz frequency
:AC for 1minute, R.H.=40~60%

(Temperature=25°C)

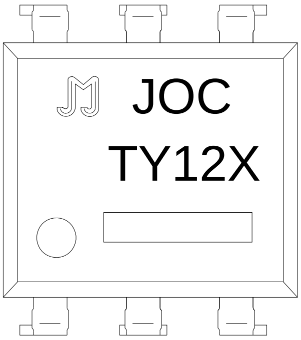
Parameter		**Symbol**	**Condition**	**Min.**	**Typ.**	**Max.**	**Unit**
Input	Forward Voltage	V_F	I_F=10mA	-	1.2	1.5	V
	Reverse Current	I_R	V_R=6V	-	-	1	μA
	Terminal Capacitance	C_t	V=0, f=1MHz	-	10	-	pF
Output	Collector-Emitter dark current	I_{CEO}	V_{CE}=200V, I_F=0	-	-	200	nA
	Collector-Emitter breakdown voltage	BV_{CEO}	I_C=0.1mA I_F=0	300	-	-	V
	Emitter-Collector breakdown voltage	BV_{ECO}	I_E=0.1mA I_F=0	0.3	-	-	V
Transfer Characteristics	Current transfer ratio	CTR	I_F=1mA V_{CE}=2V	1000	-	7500	%
	Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_F=1mA I_C=10mA	-	-	1	V
	Isolation resistance	R_{IO}	DC500V 40~60%R.H.	10^{12}	-	-	Ω
	Floating Capacitance	C_{IO}	V=0, f=1MHz	-	0.8	-	pF
	Rise Time	t_r	V_{CE}=10V, I_C=10mA R_L=100Ω	-	40	-	μs
	Fall Time	t_f		-	15	-	μs
	Response Time	t_{on}		-	50	-	μs
		t_{off}		-	15	-	μs

:Rank Table of Current Transfer Ratio (Temperature=25°C)

Grade Sign	**Test Condition**	**Min. (%)**	**Max. (%)**
J	I_F=140μA, V_{CE}=2V	-	40
	I_F=300μA, V_{CE}=2V	500	-
K	I_F=1mA, V_{CE}=2V	1000	7500
L	I_F=1mA, V_{CE}=1V	2000	7500



DIP	60 Units/Tube	40 Tubes/Inner box	5 Inner box/Outer box =12k Units
SMD	1200 Units/Reel	2 Reels/Inner box	5 Inner box/Outer box =12k Units



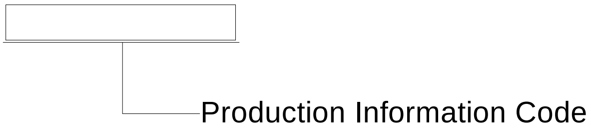


FIG.1: Max. Allowable LED Forward Current vs. Ambient Temperature

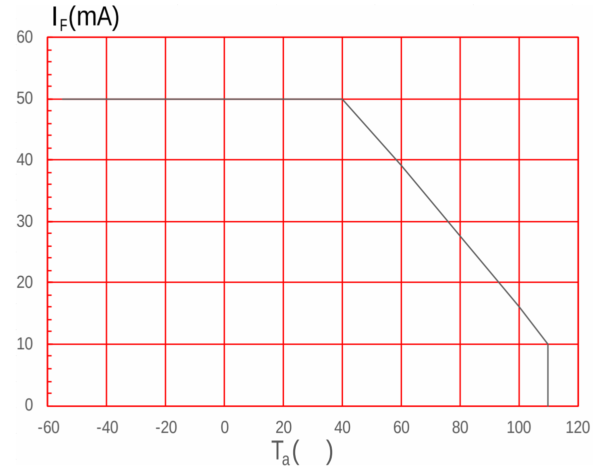


FIG.2: Collector Power Dissiption vs. Ambient Temperature

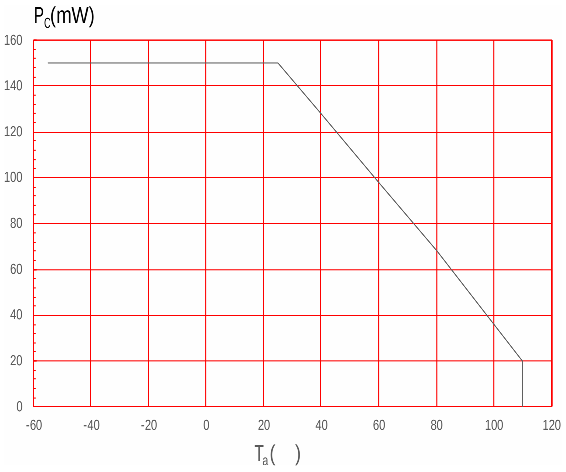


FIG.3: Forward Current vs. Forward Voltage

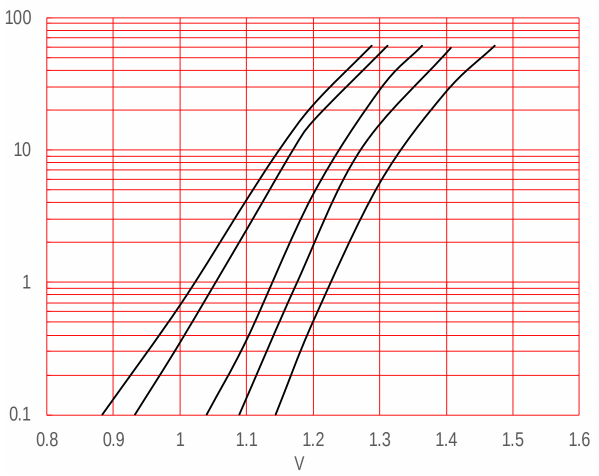
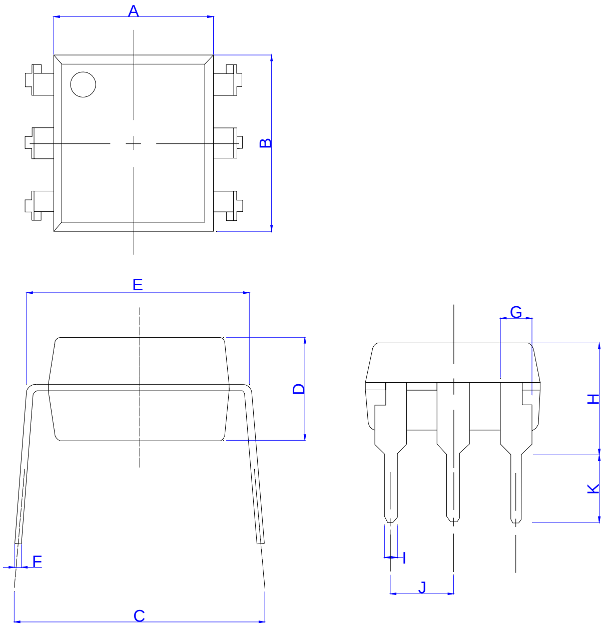


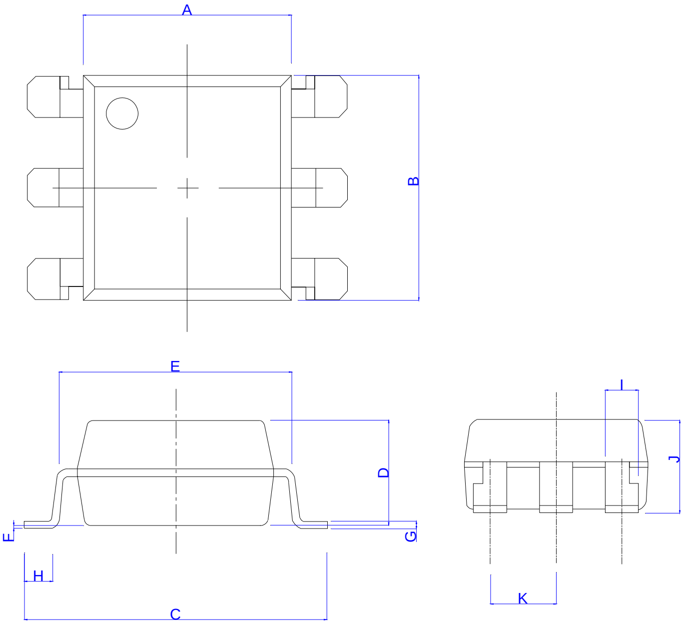
FIG.4: Collector Dark Current vs. Ambient Temperature

Standard DIP Type:



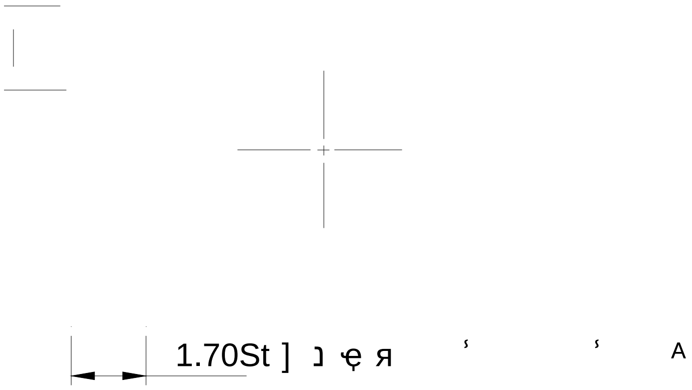
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	6.20		6.60	0.244		0.260
B	6.92		7.32	0.272		0.288
C	7.15		8.95	0.281		0.352
D	3.20		3.60	0.126		0.142
E	7.32		7.92	0.288		0.312
F	0.15		0.35	0.006		0.014
G	1.15		1.35	0.045		0.053
H	3.90		4.50	0.154		0.177
I	0.40		0.60	0.016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

Option SMD Type:

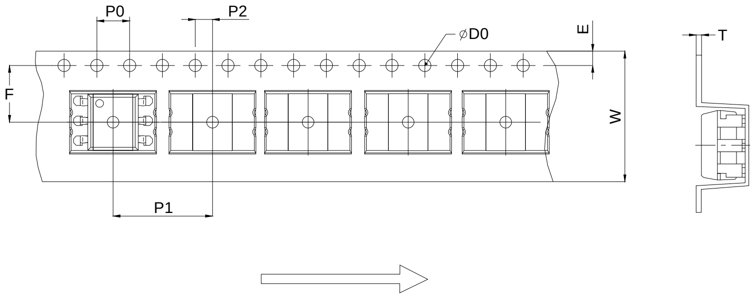


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	6.20		6.60	0.244		0.260
B	6.92		7.32	0.272		0.288
C	9.50		10.50	0.375		0.413
D	3.20		3.60	0.126		0.142
E	7.32		7.92	0.288		0.312
F	0.05		0.35	0.002		0.014
G	0.16		0.36	0.006		0.014
H	0.60		1.40	0.024		0.055
I	0.90		1.50	0.035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

Option SMD

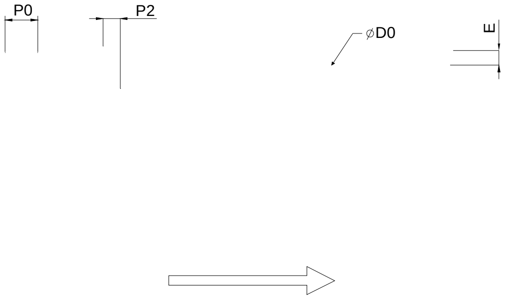


Option S

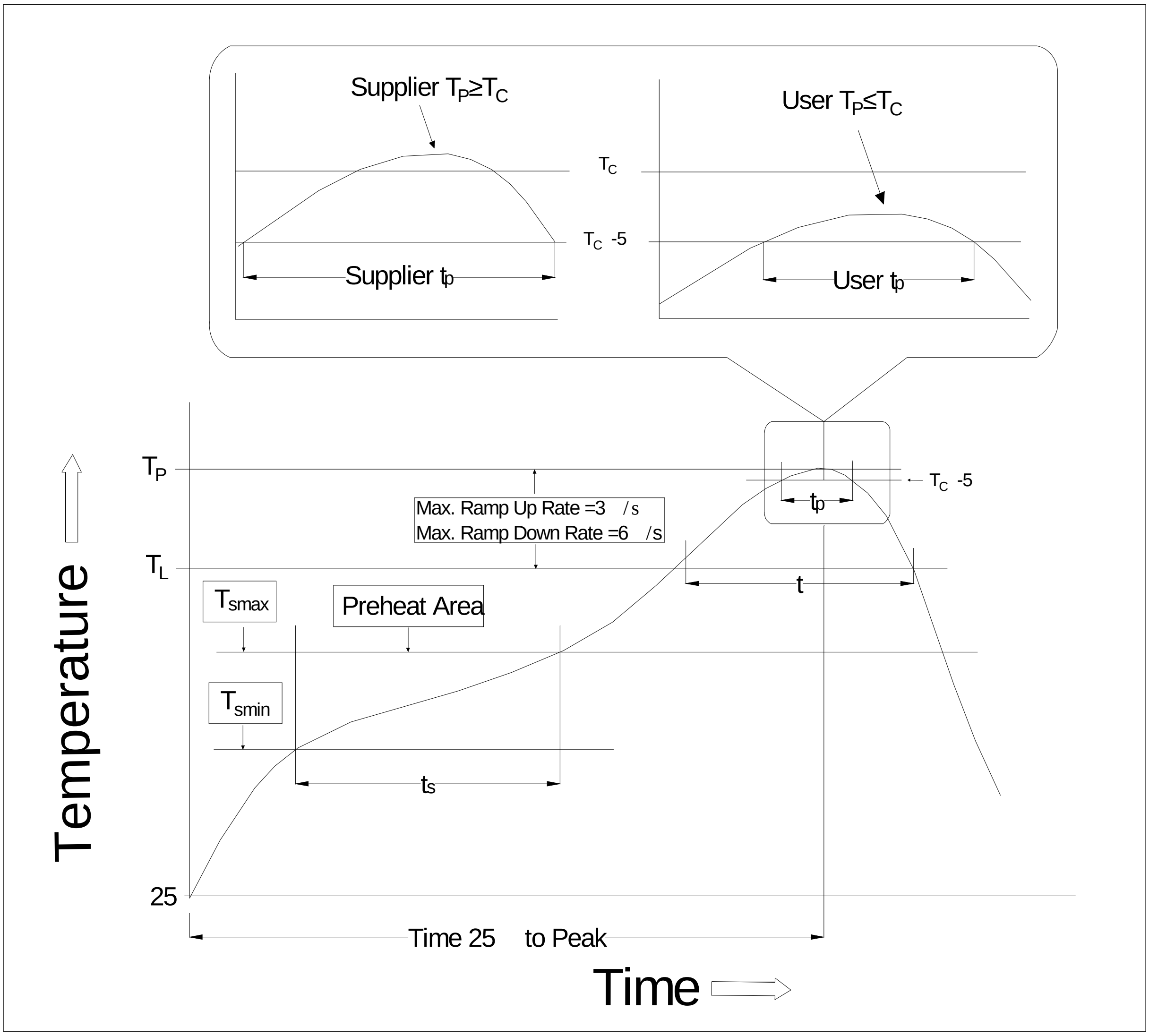


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
D0		1.50	1.60		0.059	0.063
P0	3.90	4.00	4.10	0.154	0.157	0.161
P1	11.90	12.00	12.10	0.469	0.472	0.476
P2	1.90	2.00	2.10	0.075	0.079	0.083
E	1.65	1.75	1.85	0.065	0.069	0.073
F	7.40	7.50	7.60	0.291	0.295	0.299
T	0.35	0.40	0.45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

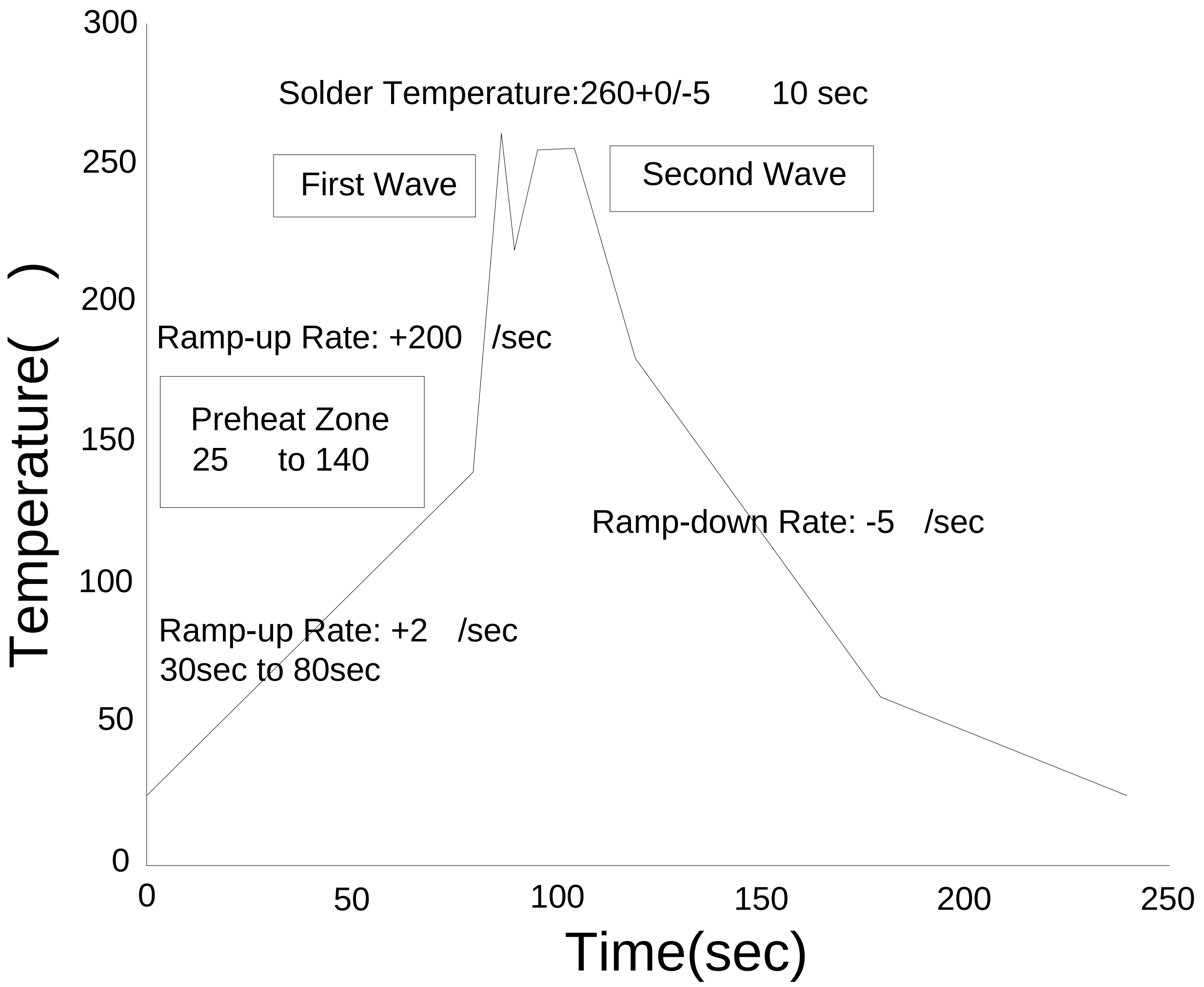
Option L



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	15.70	16.00	16.30	0.618	0.630	0.642



Profile Feature	Sn-Pb Assembly Profile	Pb-Free Assembly Profile
Temperature Min. (Tsmin)	100	150
Temperature Max. (Tsmax)	150	200
Time (ts) from (Tsmin to Tsmax)	60-120 seconds	60-120 seconds
Ramp-up Rate (tL to tP)	3 /second max.	3 /second max.
Liquidus Temperature (TL)	183	217
Time (tL) Maintained Above (TL)	60-150 seconds	60-150 seconds
Peak Body Package Temperature	235 +0 /-5	260 +0 /-5
Time (tP) within 5 of 260	10 seconds	10 seconds
Ramp-down Rate (TP to TL)	3-6 /second	3-6 /second
Time 25 to Peak Temperature	6 minutes max.	8 minutes max.



Soldering Temperature	360 ± 5
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