



The products are 10MBd high-speed opto-couplers in a plastic DIP8 package with different lead forming options. The device consists of a high efficient AlGaAs Light Emitting Diode and a high speed optical detector. This design provides excellent AC and DC isolation between the input and output sides of the optocoupler. The output of the optical detector features an open collector Schottky clamped transistor. The enable function allows the optical detector to be strobed. A guaranteed common

The

optocoupler operational parameters are guaranteed over the temperature range from -40°C ~ $+110^{\circ}\text{C}$. The products are widely used in isolation in line receivers, digital isolation for A/D, D/A conversion, ground loop elimination, feedback element in switching mode power supplier, pulse transformer replacement, power transistor isolation in motor drives, interface between microprocessor system, computer and their peripheral.

High isolation 5000 VRMS

High speed – 10MBd typical

Operating temperature range -40°C to 110°C

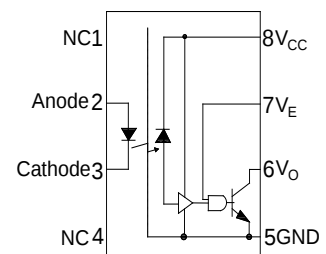
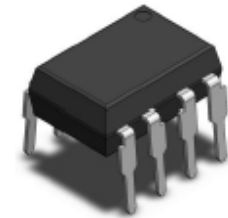
REACH & RoHS compliance

HBM: H3A; MM: M4; CDM: C3

CQC approved

VDE approved

UL approved



INPUT	ENABLE	OUTPUT
H	H	L
L	H	H
H	L	H
L	L	H
H	NC	L
L	NC	H

(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
	Input Power Dissipation	P_D	100	mW
Output	Supply Voltage	V_{CC}	7	V
	Output Voltage	V_O	7	V
	Output Current	I_O	50	mA
	Output Power Dissipation	P_O	85	mW
Total Power Dissipation		P_{tot}	200	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	

100 μ s 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	$I_F=10mA$	-	1.35	1.6	V
	Reverse Current	I_R	$V_R=6V$	-	-	1	A
	Input Capacitance	C_{in}	$V=0, f=1MHz$	-	34	-	pF
Output	High Level Output Current	I_{OH}	I_F $V_{CC}=3.3V$, $V_O=3.3V$, $V_E=2V$	-	5	100	
	High Level Supply Current	I_{CCH}	$V_{CC}=3.3V$, $I_F=0mA$, $V_E=0.5V$	-	-	10	mA
	Low Level Supply Current	I_{CCL}	$V_{CC}=3.3V$, $I_F=10mA$, $V_E=0.5V$	-	-	13	mA

6N137

High Level Input Current	I_{FH}	7	-	15	mA
Output Pull-up Resistor	R_L	330	-	4k	
Fan Out (at R_L	N	-	-	5	TTL Loads

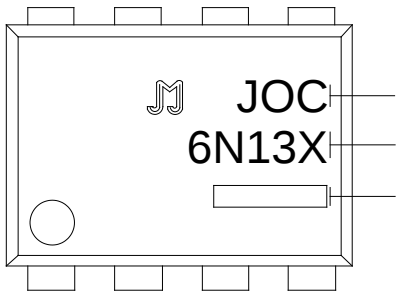
	: Company Abbr. : Part Number & Rank : Production Information Code

FIG.1: High Level Output Current vs. Ambient Temperature

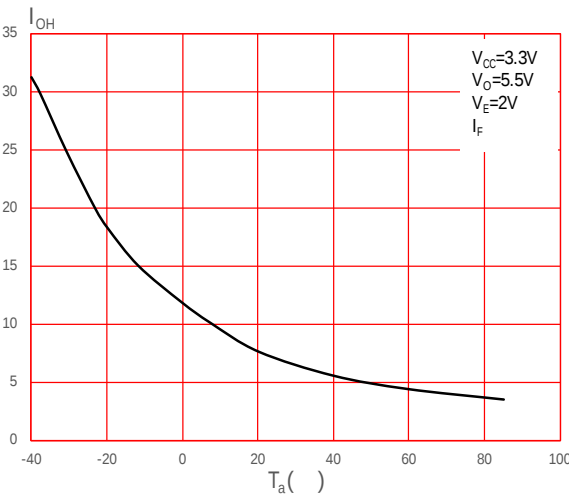


FIG.3: Input Threshold Current vs. Ambient Temperature

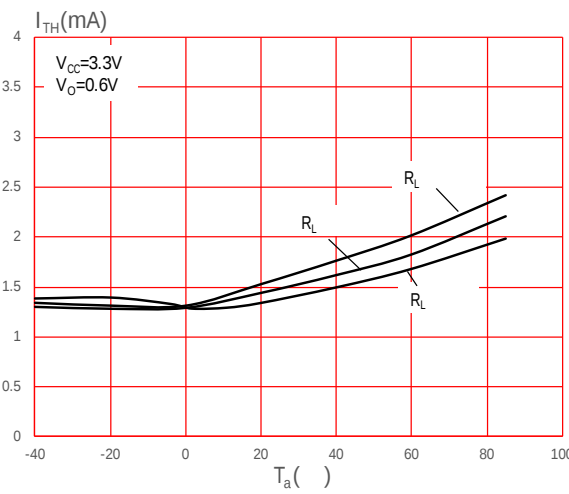


FIG.2: High Level Output Current vs. Ambient Temperature

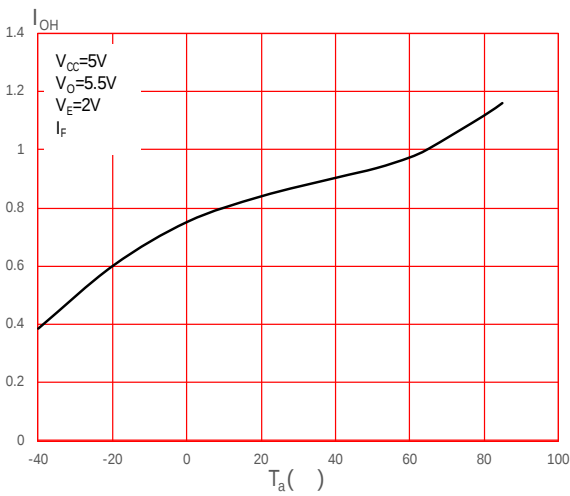


FIG.4: Input Threshold Current vs. Ambient Temperature

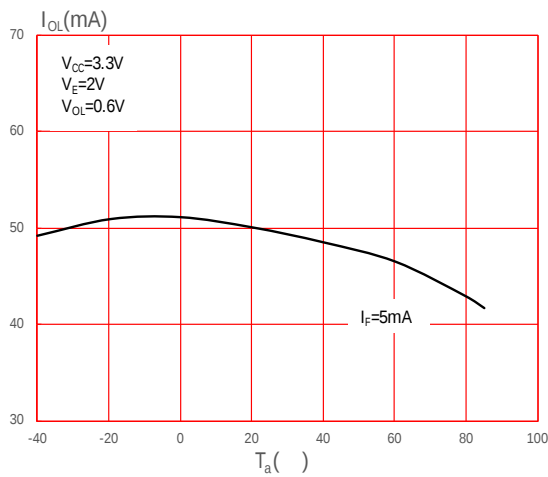
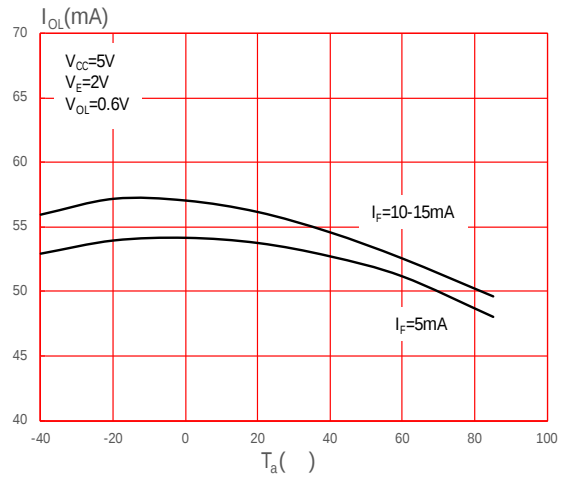
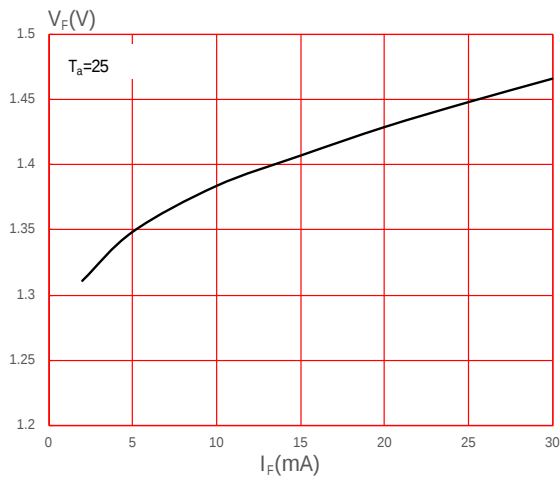
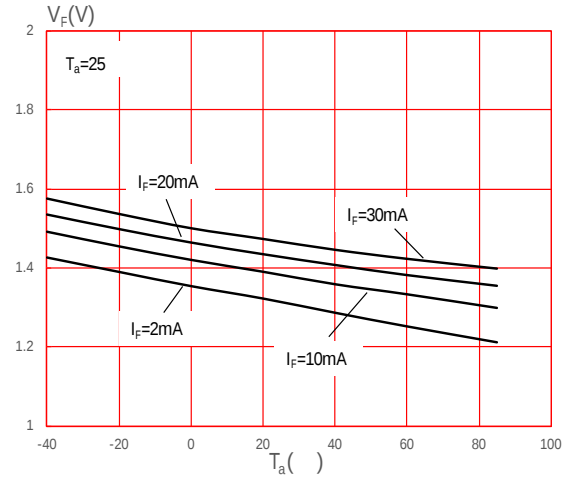
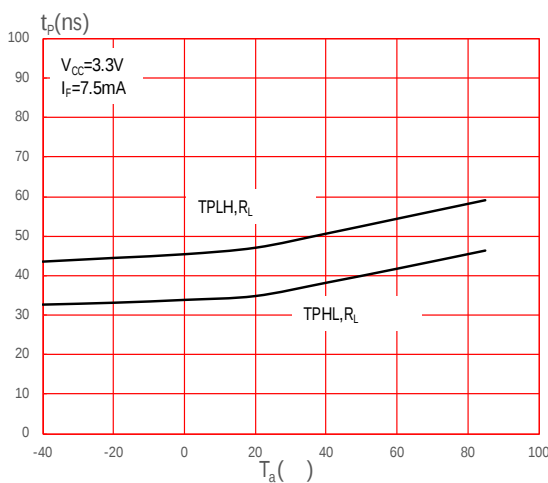
FIG.7: Low Level Output Current vs. Ambient Temperature**FIG.8:** Low Level Output Current vs. Ambient Temperature**FIG.9:** Input Forward Voltage vs. Input Forward Current**FIG.10:** Forward Voltage vs. Ambient Temperature**FIG.11:** Propagation Delay vs. Ambient Temperature**FIG.12:** Propagation Delay vs. Ambient Temperature

FIG.13: Pulse Width Distortion vs. Ambient Temperature

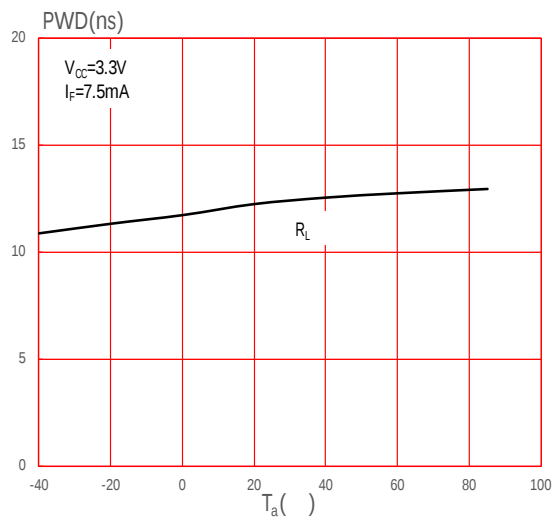


FIG.14: Pulse Width Distortion vs. Ambient Temperature

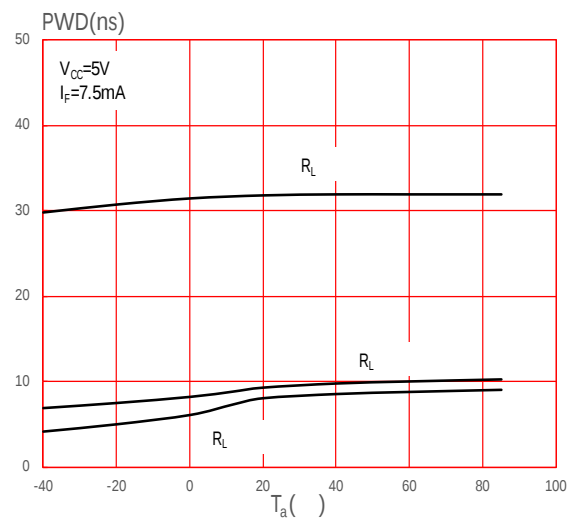
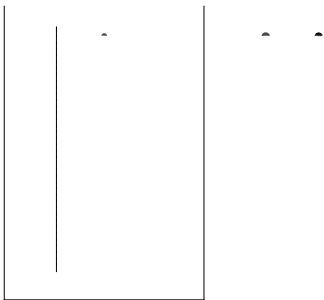
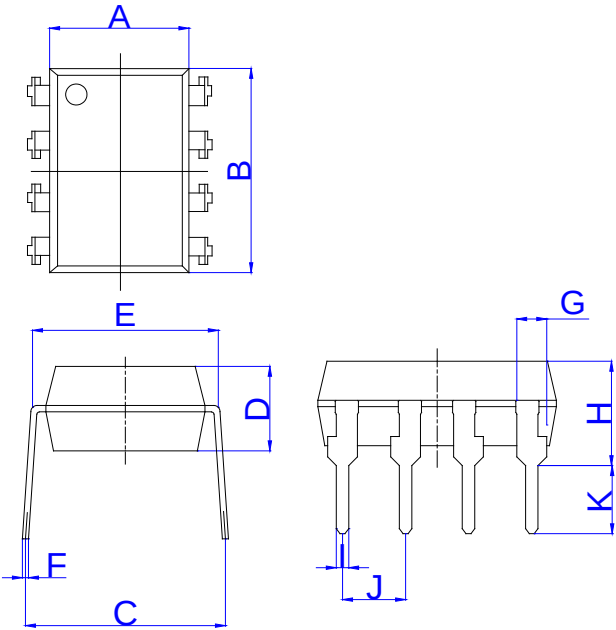


Fig.15: Test Circuit for TPHL and TPLH

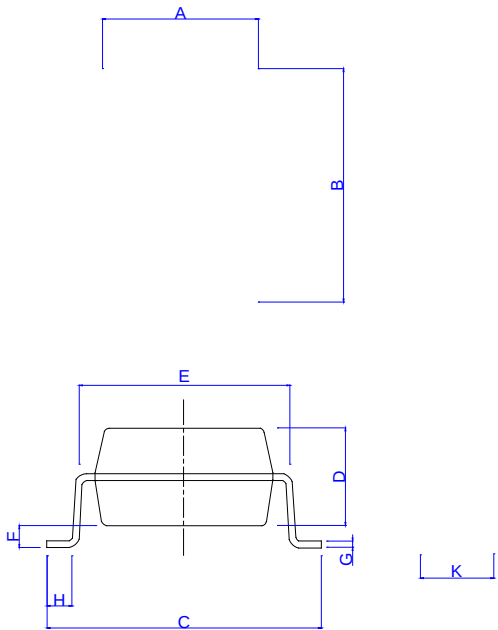


Standard DIP Type:

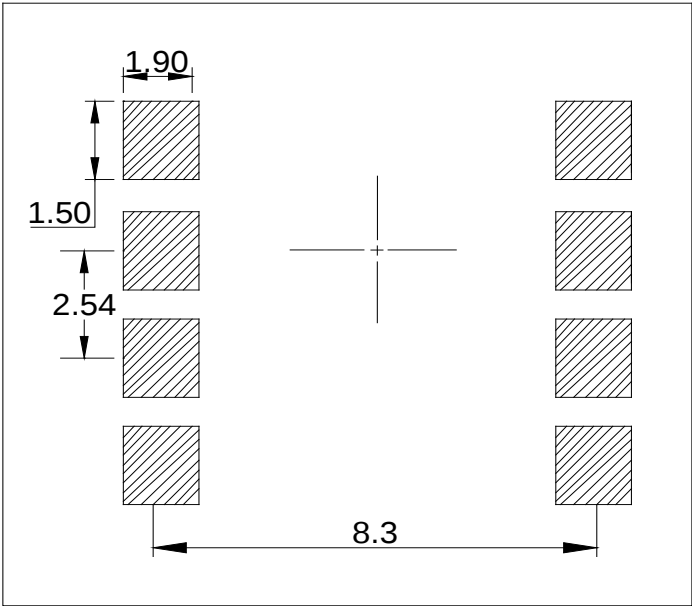


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	6.20		6.60	0.244		0.260
B	9.40		9.80	0.370		0.386
C	7.15		8.95	0.281		0.352
D	3.20		3.60	0.126		0.142
E	7.32		7.92	0.288		0.312
F	0.15		0.35	0.006		0.014
G	0.90		1.50	0.035		0.059
H	3.90		4.50	0.154		0.177
I	0.40		0.60	0.016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

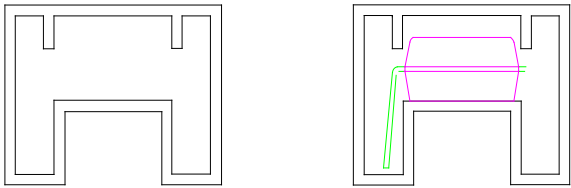
Option SMD Type:



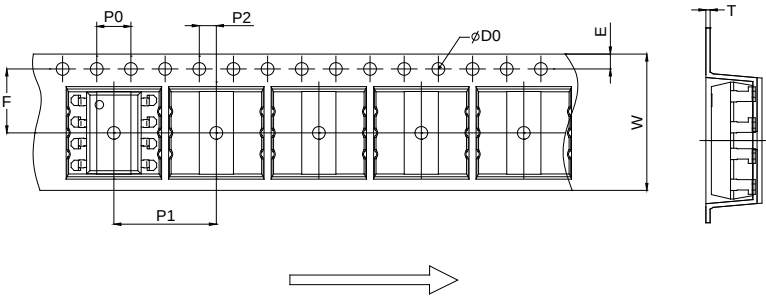
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	6.20		6.60	0.244		0.260
B	9.40		9.80	0.370		0.386
C	9.50		10.50	0.374		0.413
D	3.20		3.60	0.126		0.142
E	7.32		7.92	0.288		0.312
F						
G						
H						
I	0.90		1.50	0.035		0.059
J	3.30		3.90	0.130		0.154
K						



Standard DIP



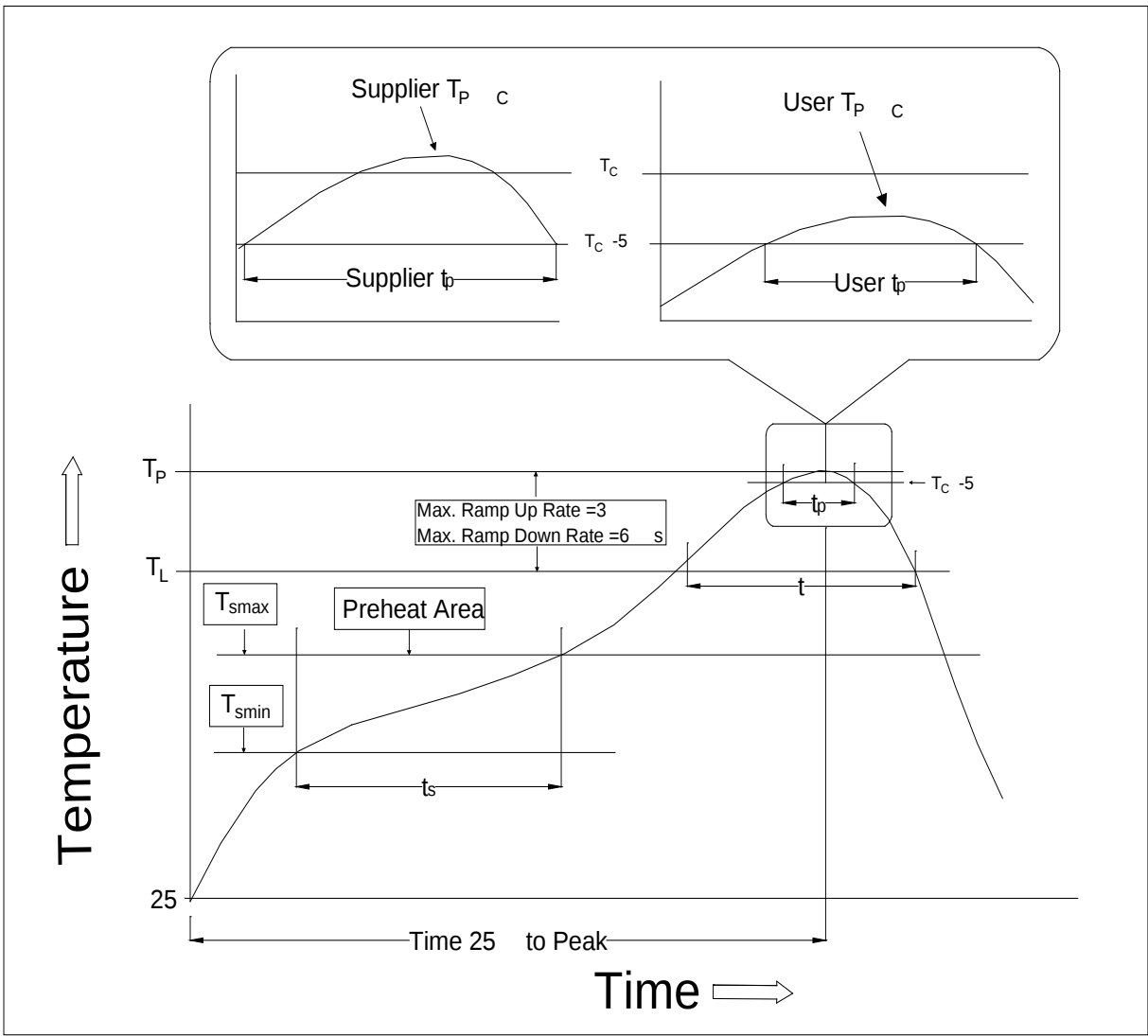
Option T3



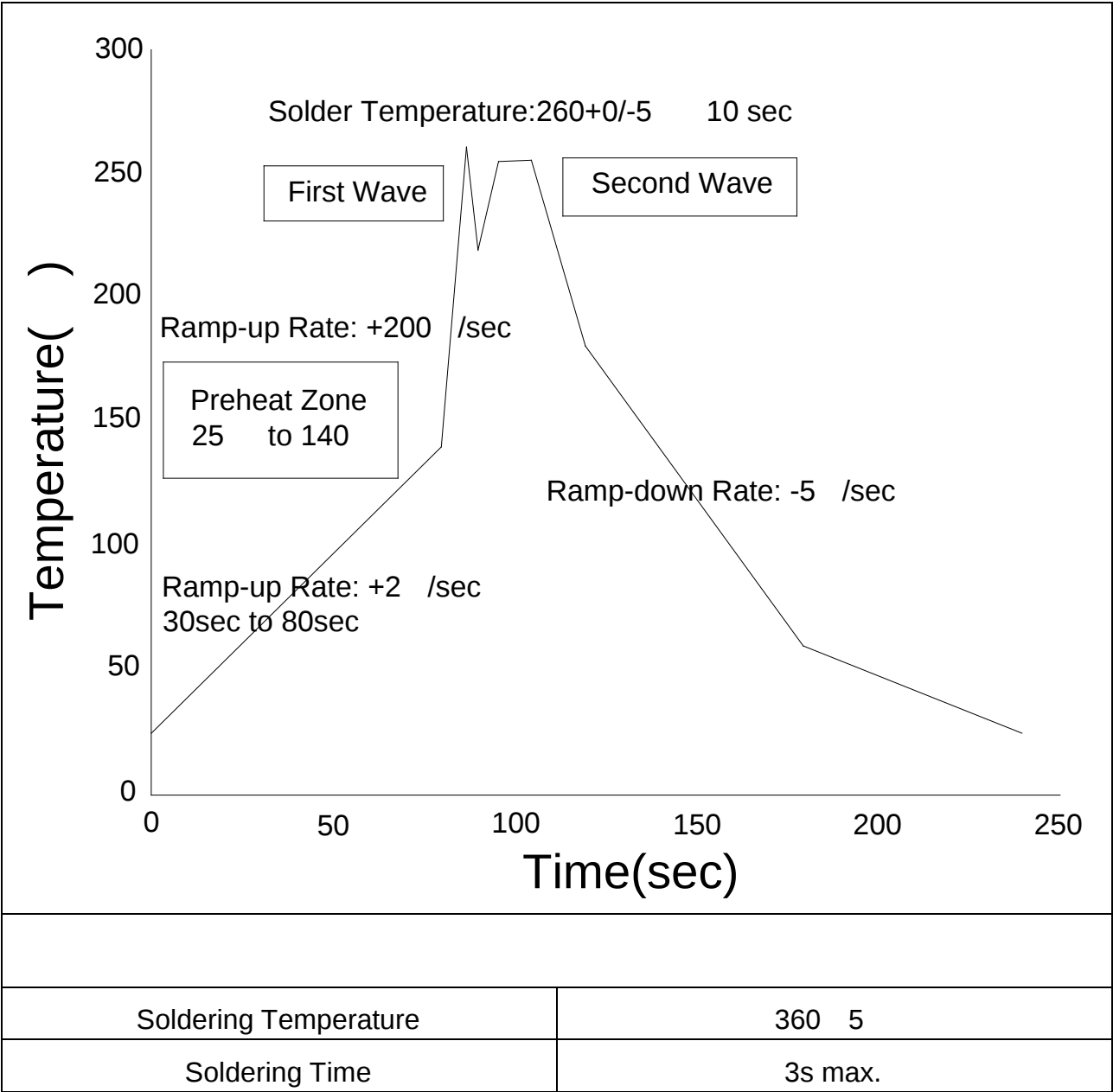
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
D0		1.50	1.60		0.059	0.063
P0	3.90	4.00	4.10	0.154	0.157	0.161
P1	11.90	12.00	12.10	0.469	0.472	0.476
P2	1.90	2.00	2.10	0.075	0.079	0.083
E	1.65	1.75	1.85	0.065	0.069	0.073
F	7.40	7.50	7.60	0.291	0.295	0.299
T	0.35	0.40	0.45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

Option T4

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
D0		1.50			0.059	
P0		4.00			0.157	
P1		12.00				
P2						
E						
F						
W		16.00			0.630	



Profile Feature	Sn-Pb Assembly Profile	Pb-Free Assembly Profile
Temperature Min. (T _{smin})	100	150
Temperature Max. (T _{smax})	150	200
Time (t _s) from (T _{smin} to T _{smax})	60-120 seconds	60-120 seconds
Ramp-up Rate (t _L to t _P)	3 /second max.	3 /second max.
Liquidus Temperature (T _L)	183	217
Time (t _L) Maintained Above (T _L)	60-150 seconds	60-150 seconds
Peak Body Package Temperature	235 +0 /-5	260 +0 /-5
Time (t _P) within 5 of 260	10 seconds	10 seconds
Ramp-down Rate (T _P to T _L)	3-6 /second	3-6 /second
Time 25 to Peak Temperature	6 minutes max.	8 minutes 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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