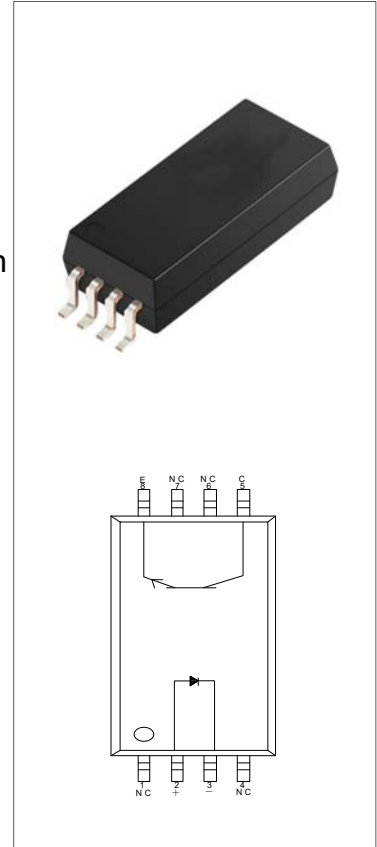


DESCRIPTION:

The products are transistor opto-couplers in a plastic WSOP8 package. The device which is infrared LED chip and photo-transistor chip is assembled on lead frame, in order to change the electricity-light-electricity. The products are widely used in transmission and conversion of digital logic, power control and switch, electric insulation and impedance conversion between circuits systems.



MAIN FEATURES

High isolation 7500 VRMS

CTI \geq 600

Operating temperature range -40°C to 110°C

RoHS & REACH 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
	Power Dissipation	P_C	75	mW
Output	Collector-emitter Voltage	V_{CEO}	80	V
	Emitter-collector Voltage	V_{ECO}	7	V
	Collector Current	I_C	50	mA
	Power Dissipation	P_C	150	mW
Total Power Dissipation		P_{tot}	225	mW
Isolation Voltage		V_{iso}	7500 ^②	Vrms
Operating Temperature		T_{opr}	$-40\sim+110$	$^{\circ}\text{C}$
Junction Temperature		T_j	125	$^{\circ}\text{C}$

Storage Temperature	T _{stg}	-55~+125	°C
Soldering Temperature	T _{sol}	260	°C

NOTE1: 100μs pulse, 100Hz frequency

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

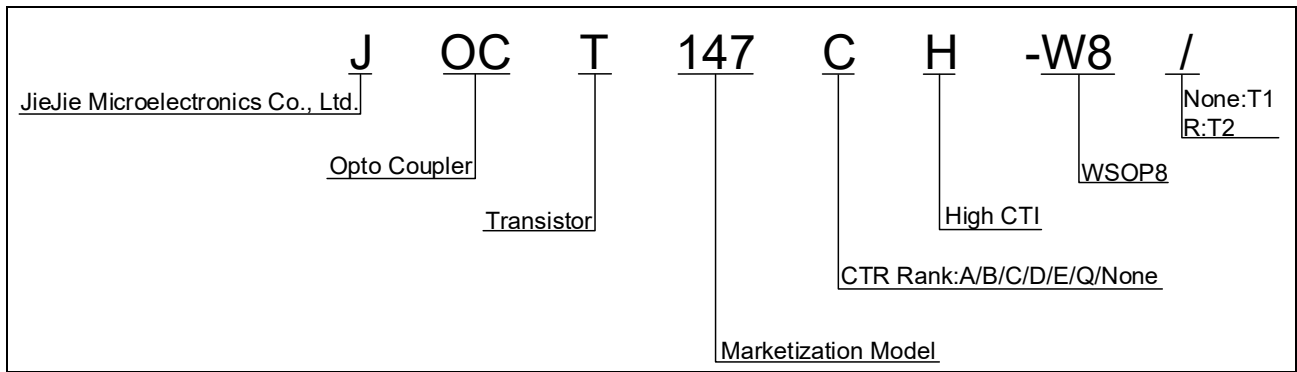
ELECTRICAL CHARACTERISTICS (Temperature=25°C)

Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit
Input	Forward Voltage	V _F	I _F =10mA	-	1.2	1.5	V
	Reverse Current	I _R	V _R =6V	-	-	1	μA
	Terminal Capacitance	C _t	V=0, f=1MHz	-	13	-	pF
Output	Collector-Emitter dark current	I _{CEO}	V _{CE} =20V, I _F =0	-	-	100	nA
	Collector-Emitter breakdown voltage	BV _{CEO}	I _C =0.1mA I _F =0	80	-	-	V
	Emitter-Collector breakdown voltage	BV _{ECO}	I _E =0.1mA I _F =0	7	-	-	V
Transfer Characteristics	Current transfer ratio	CTR	I _F =5mA V _{CE} =5V	80	-	600	%
	Collector-Emitter Saturation Voltage	V _{CE(sat)}	I _F =10mA I _C =1mA	-	0.06	0.4	V
	Isolation resistance	R _{IO}	DC500V 40~60%R.H.	10 ¹²	10 ¹⁴	-	Ω
	Floating Capacitance	C _{IO}	V=0, f=1MHz	-	0.7	-	pF
	Rise Time	t _r	V _{CE} =10V, I _C =2mA	-	3.5	18	μs
	Fall Time	t _f	R _L =100Ω	-	3	18	μs
	Turn On Time	t _{on}	V _{CC} =5V, I _F =16mA	-	1.5	-	μs
	Storage Time	t _s	R _L =1.9kΩ	-	20	-	μs
Turn Off Time	t _{off}		-	35	-	μs	

NOTE1: Rank Table of Current Transfer Ratio (Temperature=25°C)

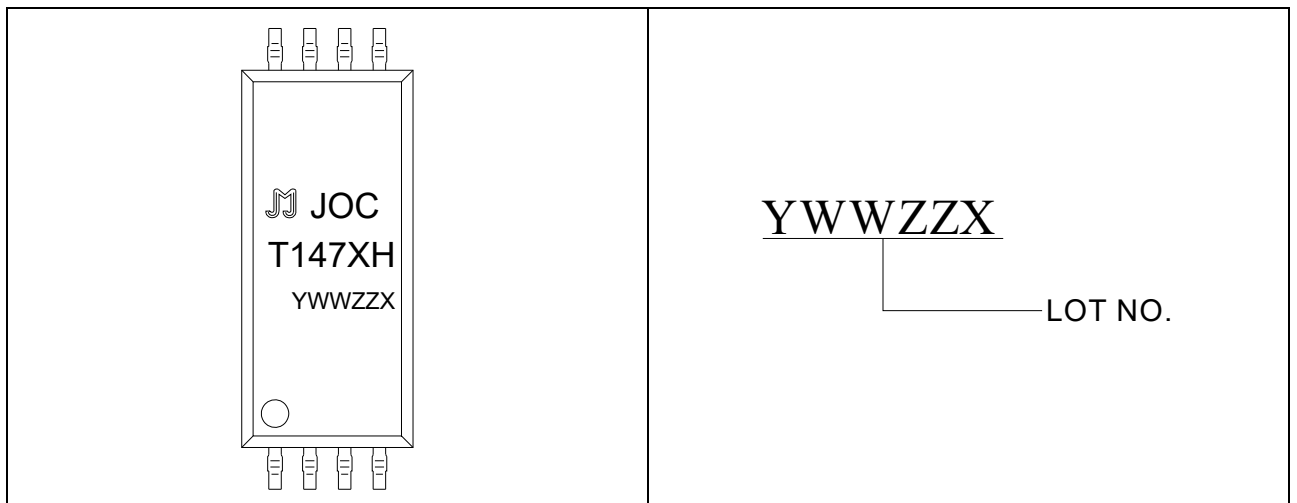
Grade Sign	Min. (%)	Max. (%)
None	80	600
A	80	160
B	130	260
C	200	400
D	300	600
E	400	600
Q	100	200

ORDERING INFORMATION



Packing Quantity	
Option	Quantity
None/R	1200 Units/Reel

MARKING



Characteristics Curves

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

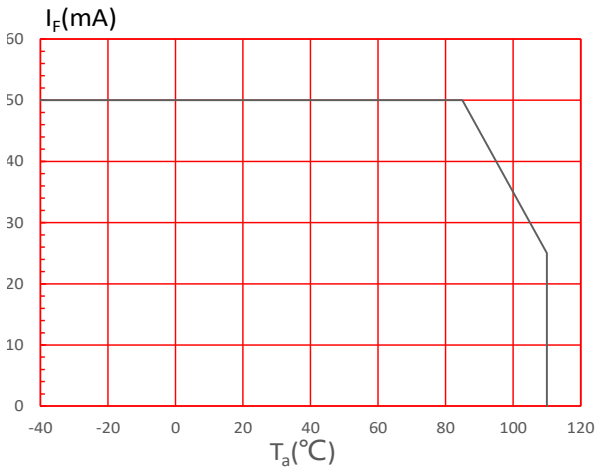


FIG.2: Collector Power Dissipation vs. Ambient Temperature

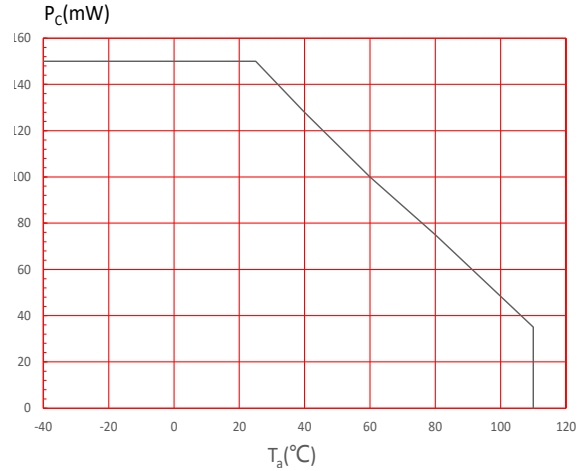


FIG.3: Forward Current vs. Forward Voltage

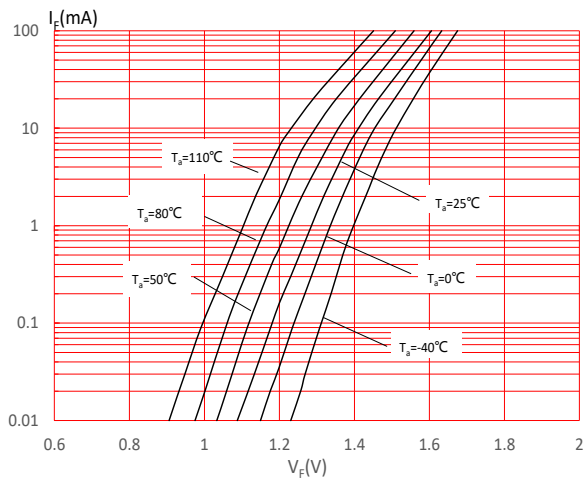


FIG.4: Collector Dark Current vs. Ambient Temperature

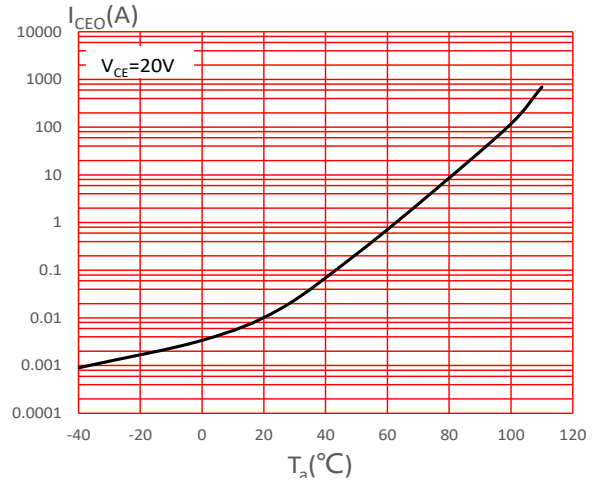


FIG.5: Collector Current vs. Collector-emitter Voltage

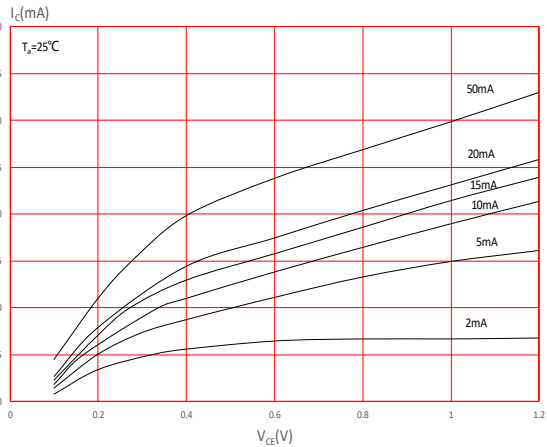


FIG.6: Collector Current vs. Collector-emitter Voltage

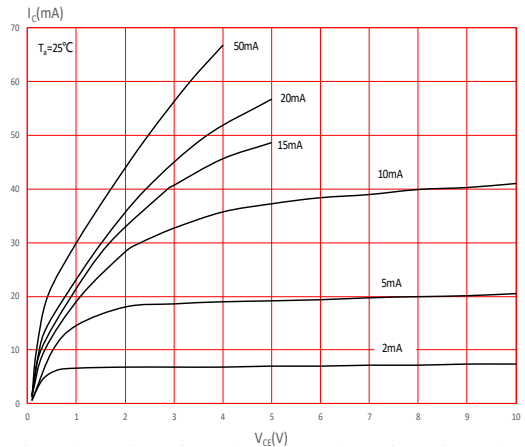


FIG.7: Current Transfer Ratio vs. Forward Current

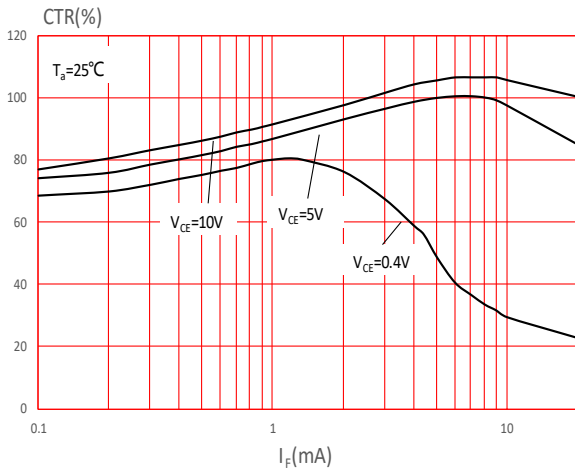


FIG.8: Current Transfer Ratio vs. Ambient Temperature

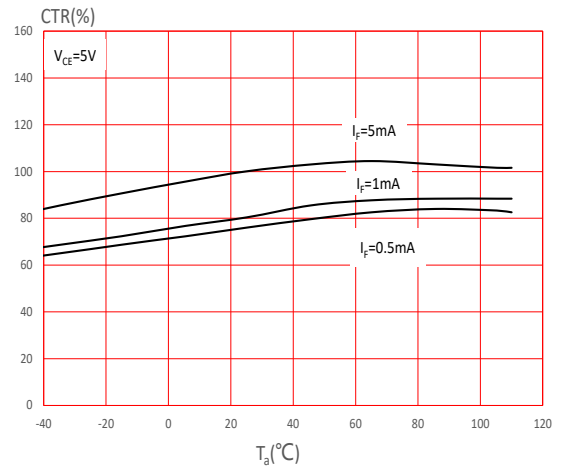


FIG.9: Collector-emitter Saturation Voltage vs. Ambient Temperature

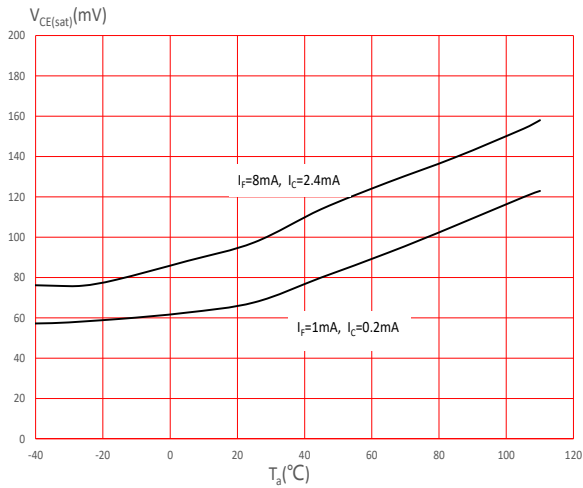


FIG.10: Response Time vs. Load Resistance

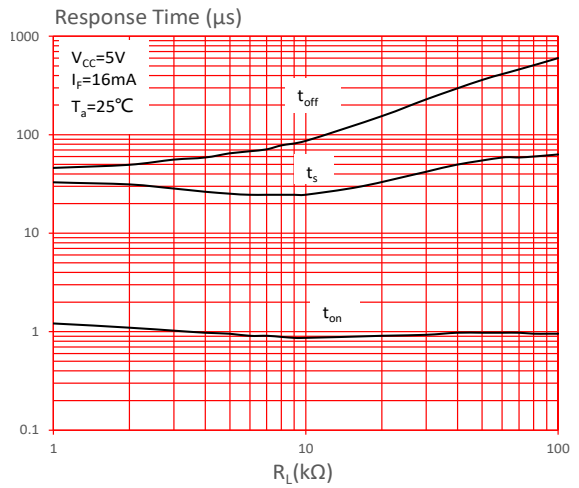
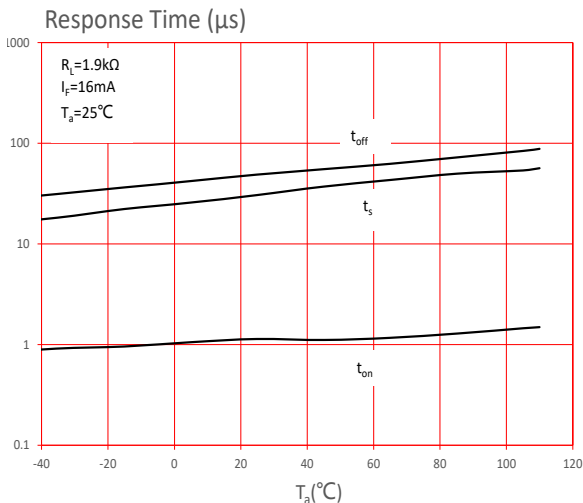


FIG.11: Response Time vs. Ambient Temperature



Test Circuits

FIG.12: Test Circuits of Turn On Time

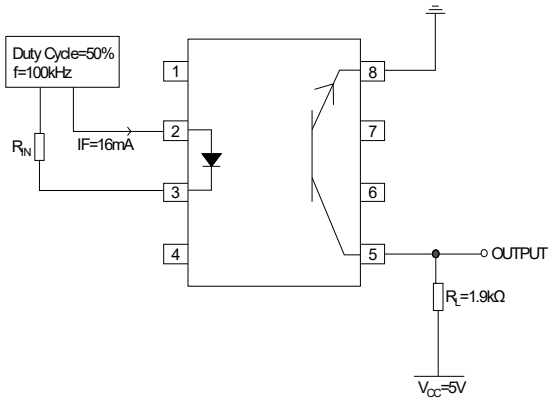
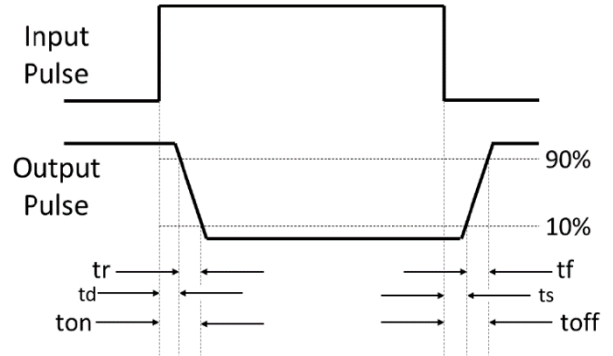
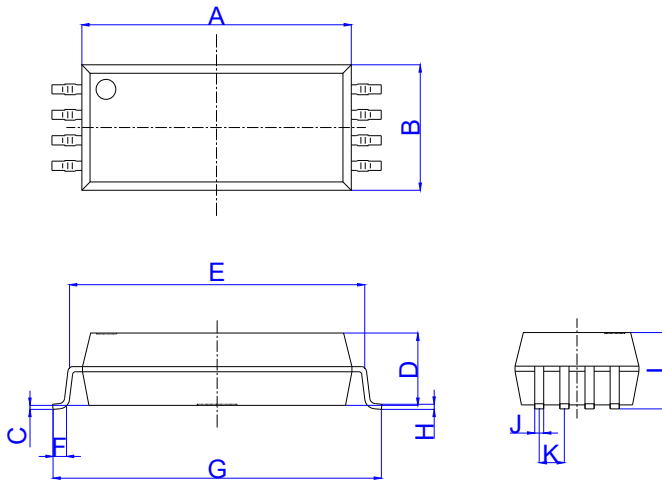


FIG.13: Waveforms of Turn On Time

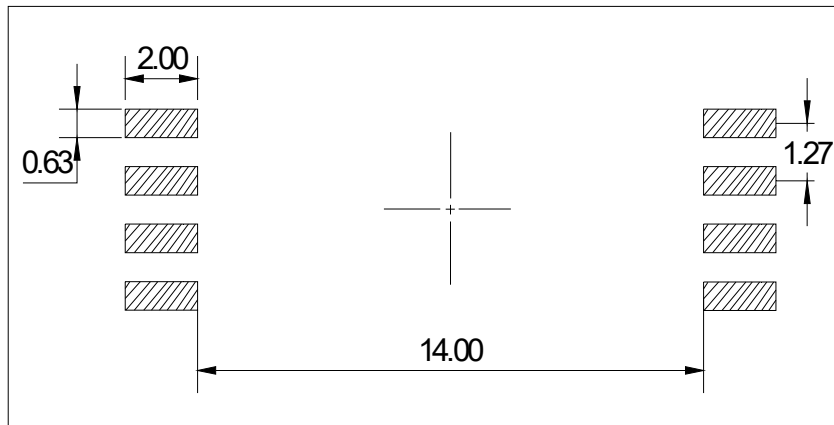


Package Dimension (Unit: mm)

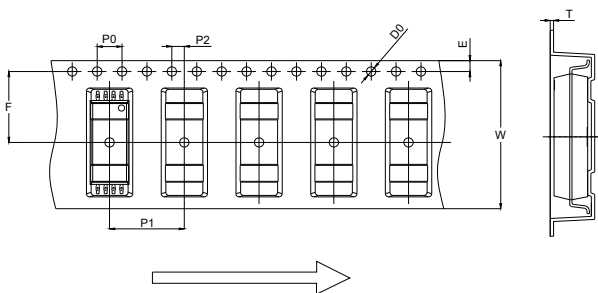


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	13.50		13.70	0.531		0.539
B	6.15		6.35	0.242		0.250
C	0.10		0.30	0.004		0.012
D	3.50		3.70	0.138		0.146
E	14.71		15.31	0.579		0.603
F	0.52		1.02	0.020		0.040
G	16.36		16.86	0.644		0.664
H	0.10		0.40	0.004		0.016
I	3.65		3.95	0.144		0.156
J	0.307		0.607	0.012		0.024
K	1.02		1.52	0.040		0.060

RECOMMENDED SOLDER MASK (Dimensions in mm unless otherwise stated)

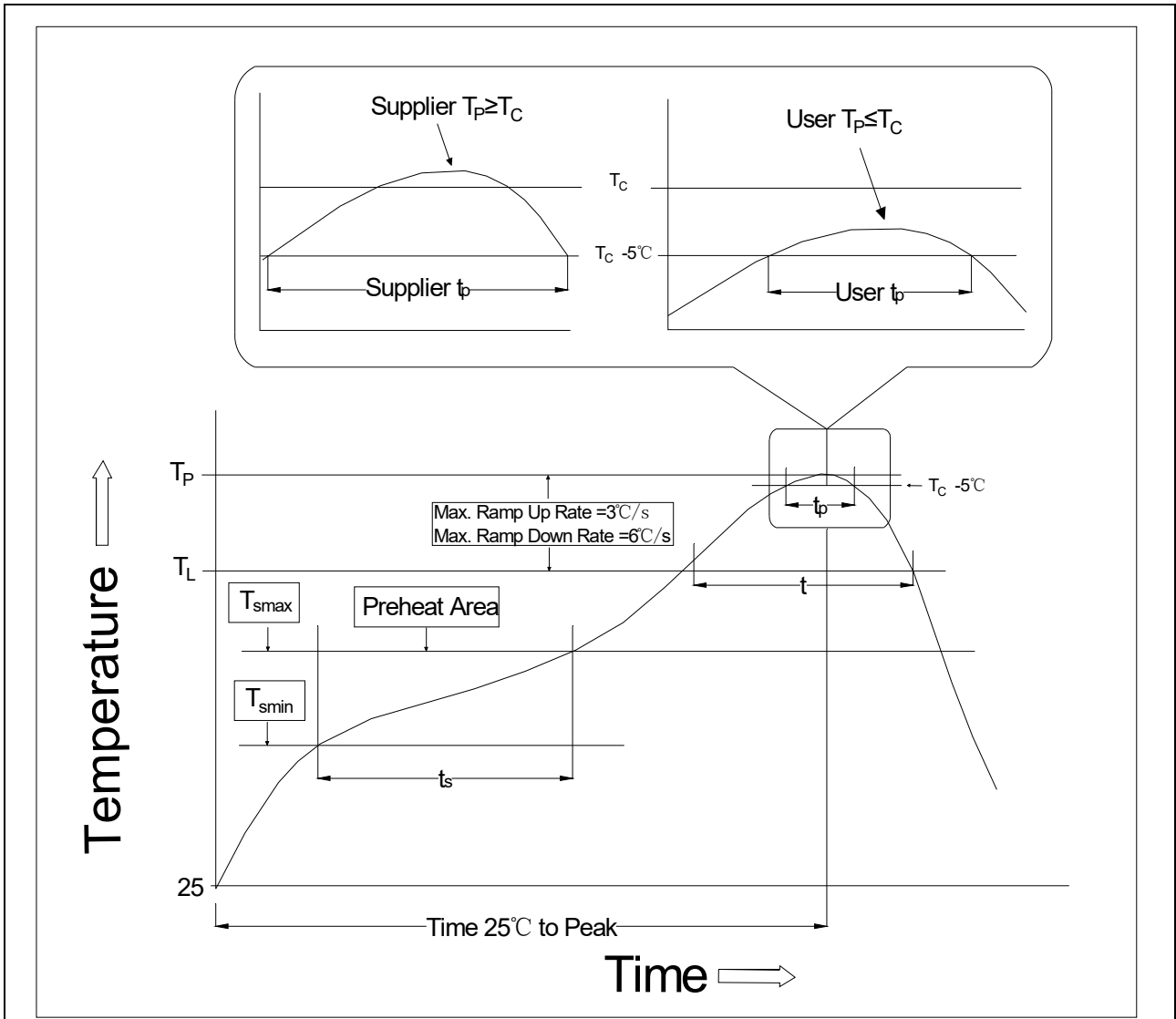


CARRIER TAPE SPECIFICATIONS (Dimensions in mm unless otherwise stated)



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
D0	1.40	1.50	1.60	0.055	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	11.40	11.50	11.60	0.449	0.453	0.457
T	0.35	0.40	0.45	0.014	0.016	0.018
W	23.70	24.00	24.30	0.933	0.945	0.957

REFLOW INFORMATION




Profile Feature	Sn-Pb Assembly Profile	Pb-Free Assembly Profile
Temperature Min. (T _{smin})	100	150°C
Temperature Max. (T _{smax})	150	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	20 seconds	30 seconds
Ramp-down Rate (T _P to T _L)	6°C/second max.	6°C/second max.
Time 25°C 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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