

ABSOLUTE MAXIMUM RATINGS (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	

NOTE1 110µ • 100µ • U 110, 1 (OE <µ v Ç

NOTE2 ()OE 10µ vµš U ZX, XAđi•đi9

ELECTRICAL CHARACTERISTICS (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	µA
	Input Capacitance	C_{in}	$V=0, f=1MHz$	-	34	-	pF
Output	High Level Current	I_{OH}	$I_F=250µA,$ $V_{CC}=3.3V,$ $V_O=3.3V,$ $V_E=2V$	-	5	100	µA
	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

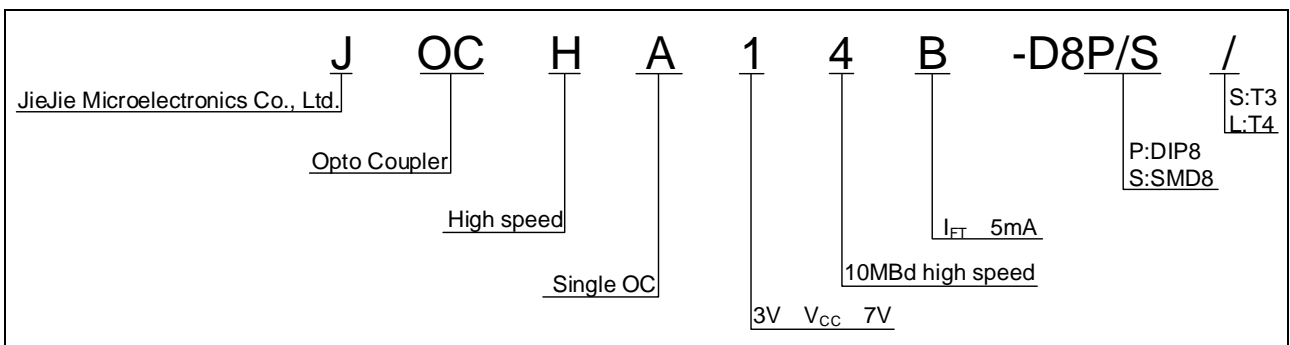
	Logic Low Output Voltage	V_{OL}	$I_F=5mA,$ $I_o=13mA,$ $V_{CC}=3.3V,$ $V_E=2V$	-	0.3	0.6	V
	Isolation Resistance	R_{ISO}	DC500V 40~60%R.H.	-	10^{12}	-	
	Floating Capacitance	C_{IO}	$V=0, f=1MHz$	-	1	-	pF
Switching Characteristics	Trigger LED Current	I_{FT}	$V_{CC}=5V,$ $V_O=V_{OL}$	-	-	5	mA
	Propagation Delay Time to Logic Low	t_{PHL}	$C_L=15pF,$ $R_L=350 \Omega,$ $I_F=7.5mA$	-	-	60	ns
	Propagation Delay Time to Logic High	t_{PLH}		-	-	60	ns
	Pulse width distortion	$ t_{PHL}-t_{PLH} $		-	-	35	ns
	Common Mode Transient Immunity at Logic High	CM_H	$V_{CC}=3.3V,$ $I_F=0mA,$ $V_{CM}=1000V,$ $R_L=350$	10	15	-	kV/ μs
	Common Mode Transient Immunity at Logic Low	CM_L	$V_{CC}=3.3V,$ $I_F=10mA,$ $V_{CM}=1000V,$ $R_L=350$	10	15	-	kV/ μs
	Rise Time	t_r	$C_L=15pF,$ $R_L=350 \Omega,$ $I_F=7.5mA$	-	30	-	ns
	Fall Time	t_f		-	30	-	ns

Recommended Operating Conditions

Characteristics	Symbol	Min.	Typ.	Max.	Unit
Operating Temperature	T_a	-40	-	85	
Supply Voltage	V_{CC}	2.7	-	3.6	V
		4.5	-	5.5	
Low Level Input Current	I_{FL}	0	-	250	μA

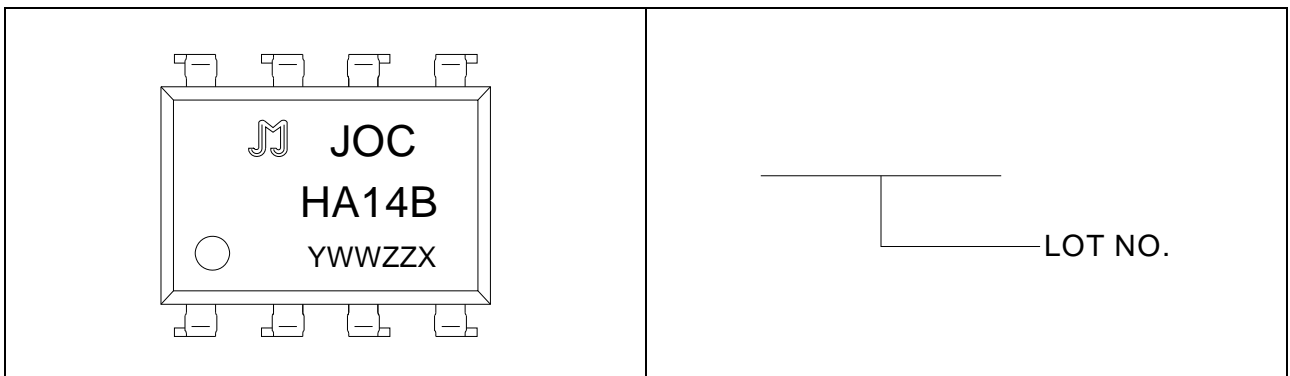
High Level Input Current	I _{FH}	7	-	15	mA
Output Pull-up Resistor	R _L	330	-	4k	
Fan Out (at R _L =1k per channel)	N	-	-	5	TTL Loads

ORDERING INFORMATION



Packing Quantity	
Option	Quantity
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^ D	íîìì hv]š•lZ o

MARKING



Characteristics Curves

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

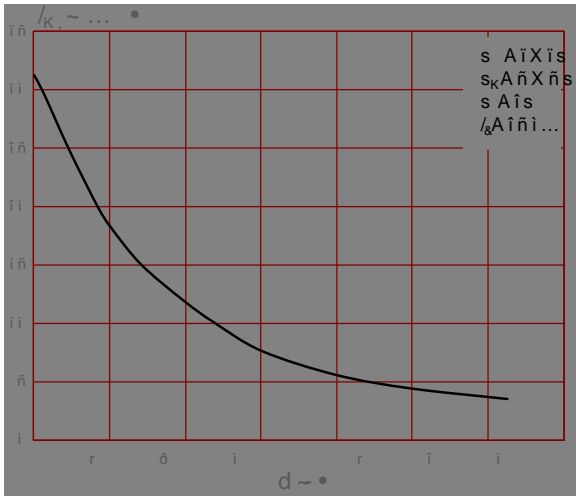


FIG.2: High Level Output Current vs. Ambient Temperature

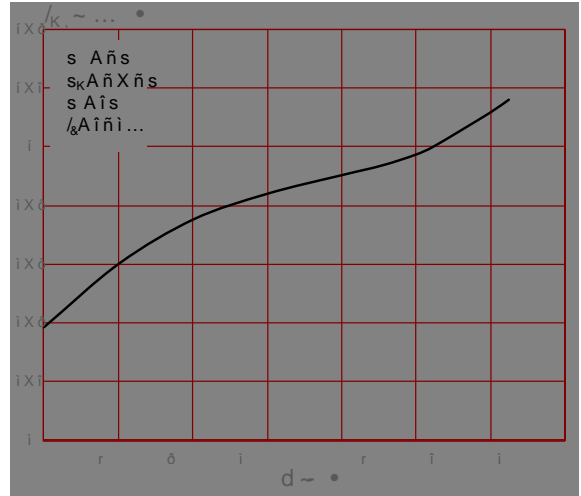


FIG.3: Input Threshold Current vs. Ambient Temperature

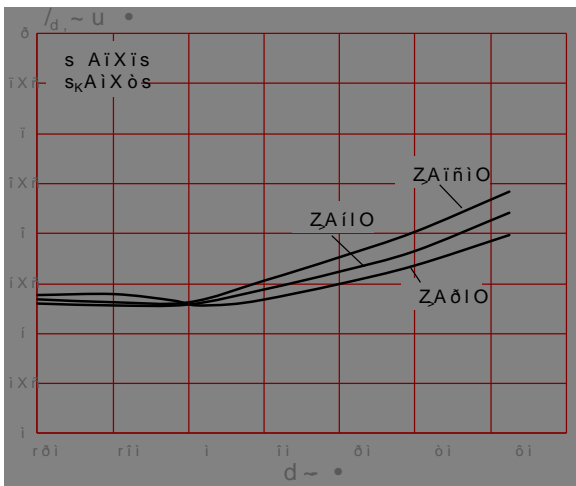


FIG.4: Input Threshold Current vs. Ambient Temperature

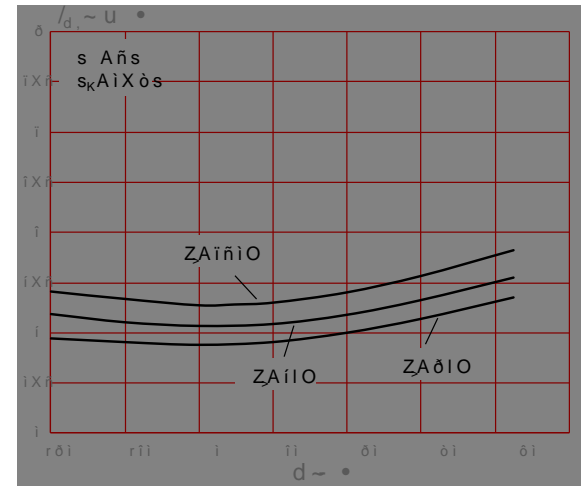


FIG.5: Low Level Output Voltage vs. Ambient Temperature

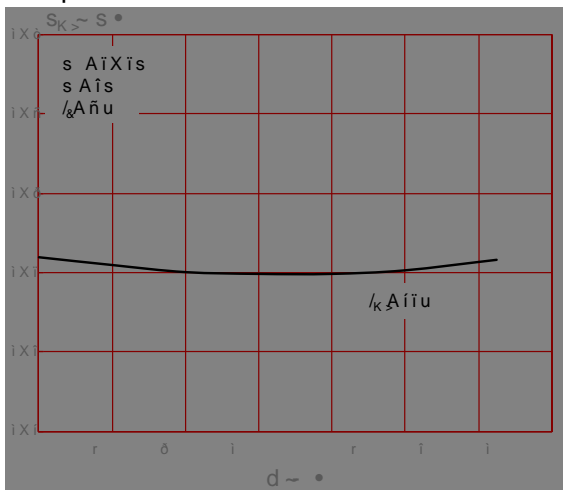


FIG.6: Low Level Output Voltage vs. Ambient Temperature

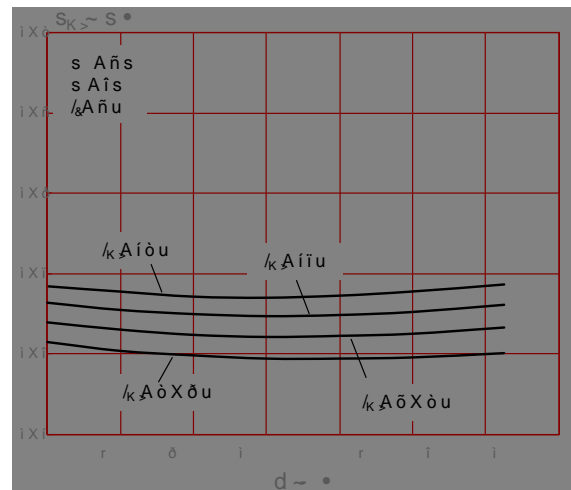


FIG.7: Low Level Output Current vs. Ambient Temperature

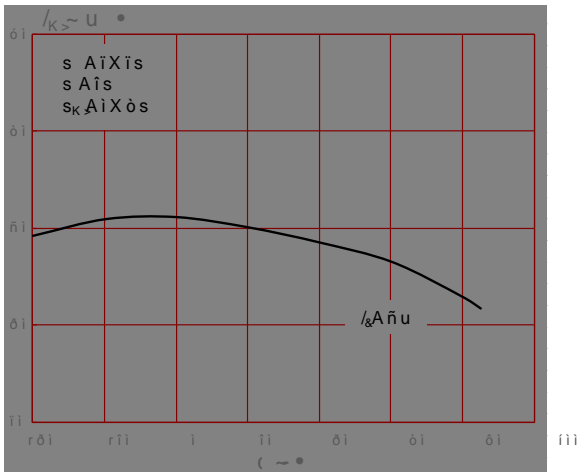


FIG.8: Low Level Output Current vs. Ambient Temperature

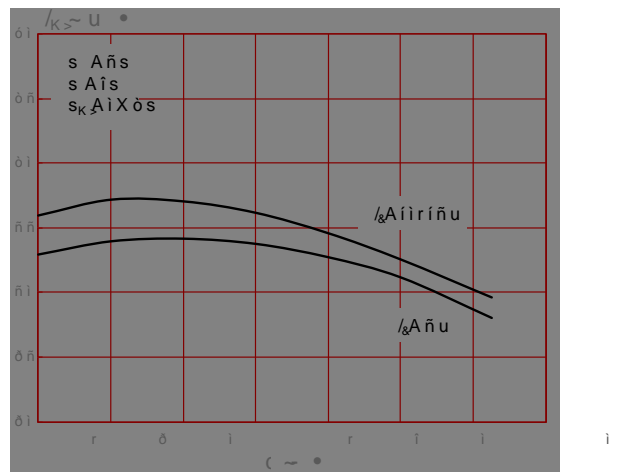


FIG.9: Input Forward Voltage vs. Input Forward Current

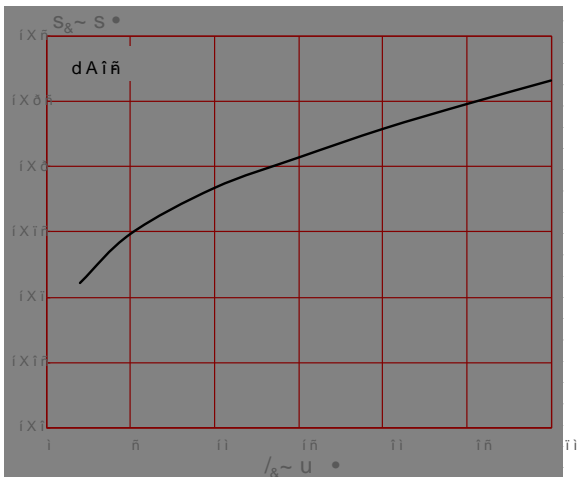


FIG.10: Forward Voltage vs. Ambient Temperature

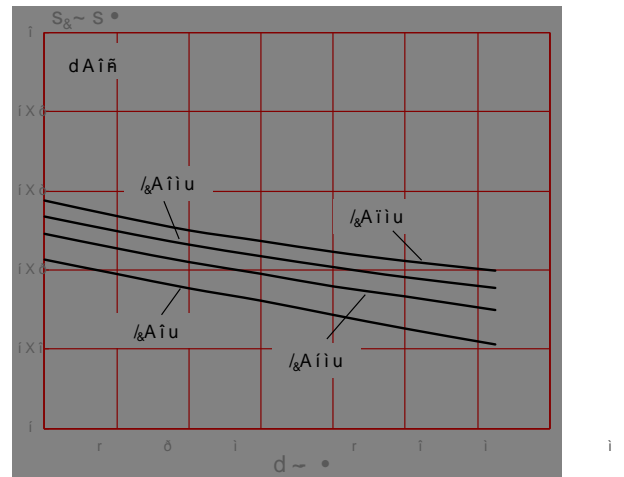


FIG.11: Propagation Delay vs. Ambient Temperature

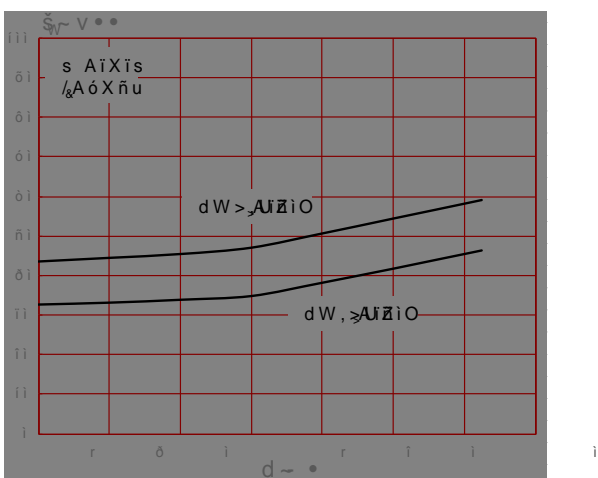


FIG.12: Propagation Delay vs. Ambient Temperature

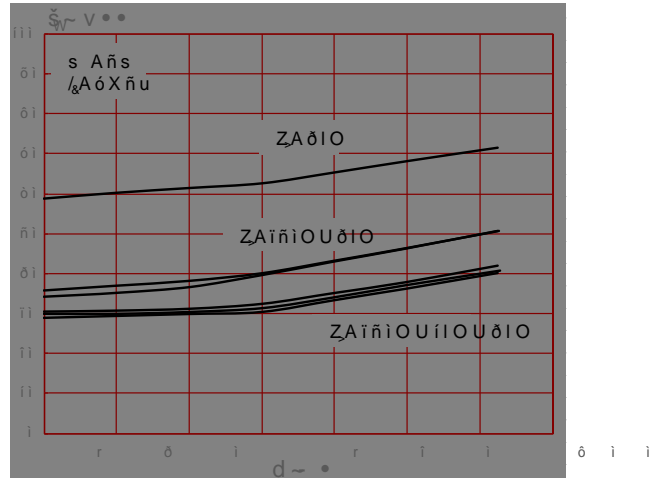


FIG.13: Pulse Width Distortion vs. Ambient Temperature

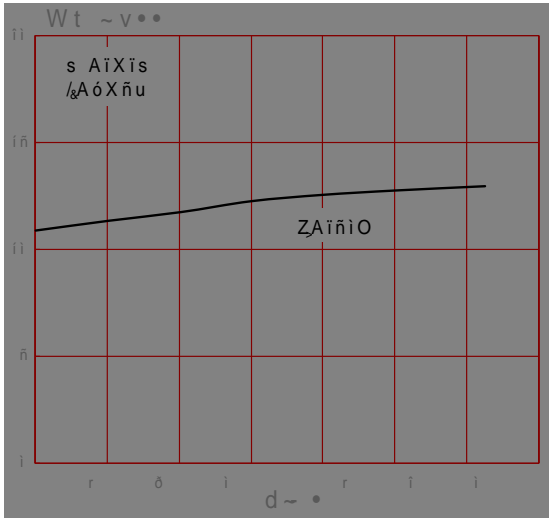
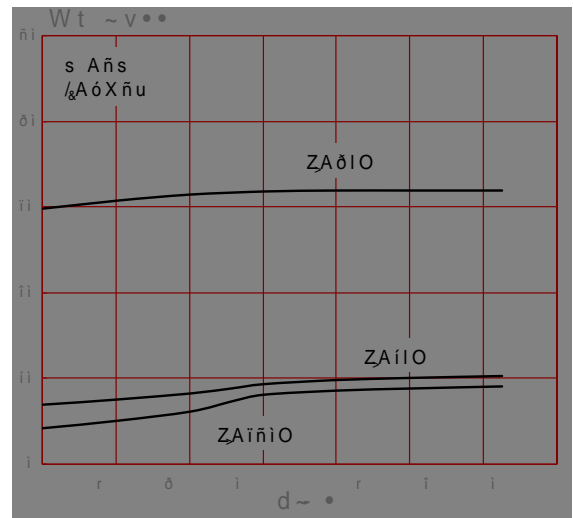
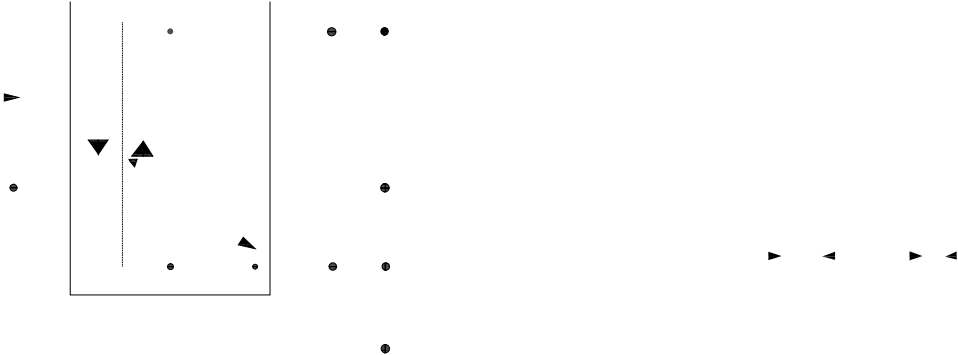


FIG.14: Pulse Width Distortion vs. Ambient Temperature



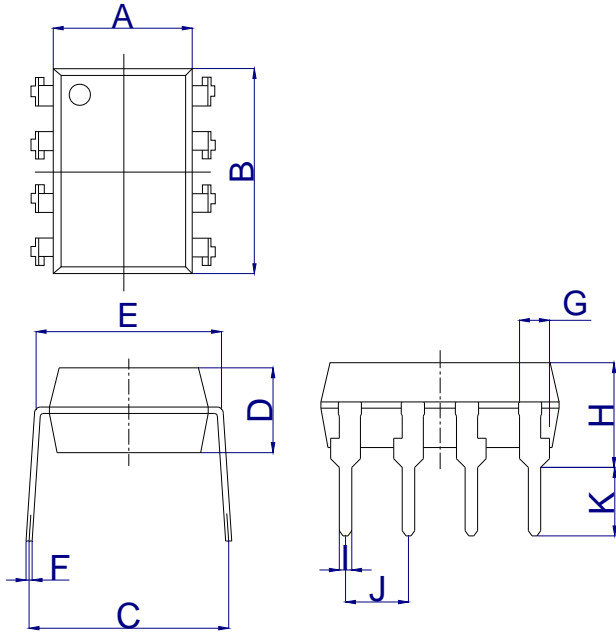
TEST CIRCUITS

Fig.15: Test Circuit for TPHL and TPLH



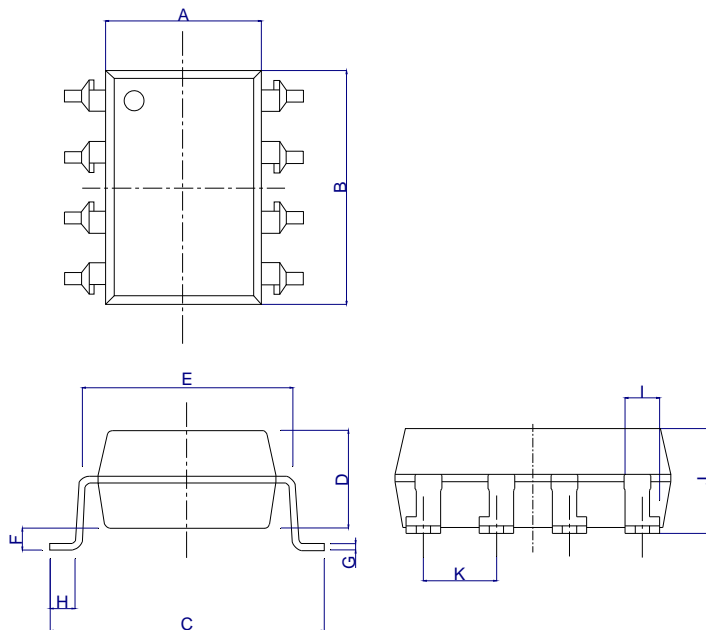
Package Dimension (Unit: mm)

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:



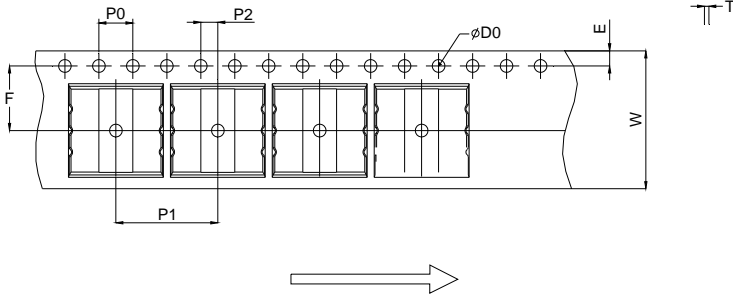
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	6.20		6.60	0.244		0.260
B	9.40		9.80	0.370		0.386
C	9.50		10.50	0.374		0.413
D	3.20		3.60	0.126		0.142
E	7.32		7.92	0.288		0.312
F	0.05		0.35	0.002		0.014
G	0.16		0.36	0.006		0.014
H	0.60		1.40	0.024		0.055
I	0.90		1.50	0.035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



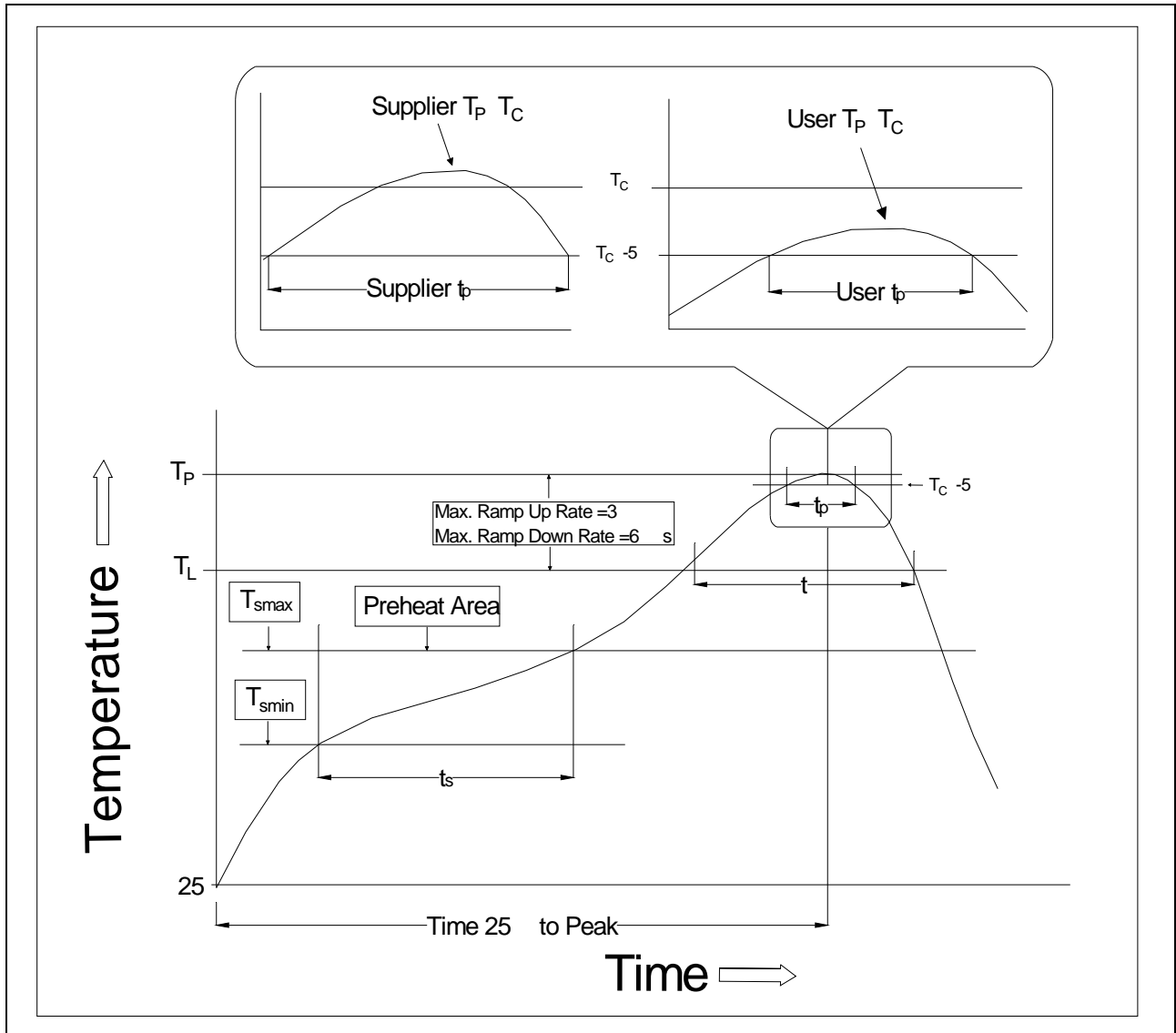
CARRIER TAPE SPECIFICATIONS (Dimensions in mm unless otherwise stated)

Option S/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	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	20 seconds	30 seconds
Ramp-down Rate (T _P to T _L)	6 °/second max.	6 °/second max.
Time 25 ° to Peak Temperature	6 minutes max.	8 minutes max.


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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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