JOCDA4AB-D8P/S Series

Rev.A.1.0

DESCRIPTION:

The products are gate driver opto-couplers in a plastic

ABSOLUTE MAXIMUM RATINGS (Temperature=25°C)

Parameter		Symbol	Value	Unit
LED	Forward Current	I_F	50	mA
	Peak Forward Current	I_{FP}	1	A
	Reverse Voltage	V_R	6	V
	Power Dissipation	P_D	100	mW
Detector	Output Voltage	V_O	35	V
	Supply Voltage	V_{CC}	35	V
	Power Dissipation	P_C	400	mW
Isolation Voltage		V_{iso}	5000	Vrms
Operating Temperature		T_{opr}	-40~110	
Junction Temperature		T_j	125	
Storage Temperature		T_{stg}	-55~125	
Total Power Dissipation		P_{tot}	500	mW
Soldering Temperature		T_{sol}	260	

NOTE1: μ

NOTE2:

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
	Terminal Capacitance	C_t	V=0,f=1MHz	-	60	-	pF
Output	Peak High-level Output Current	I_{OPH}	V_O=V_{CC}-4V, Pulse width≤50μs	-1	-	-	A
			V_O=V_{CC}-10V, Pulse width≤10μs	-4	-	-	A
	Peak Low-level Output Current	I_{OPL}	V_O=V_{EE}+2.5V, Pulse width≤50μs	1	-	-	A
			V_O=V_{EE}+10V, Pulse width≤10μs	4	-	-	A
	High Level Supply Current	I_{CCH}	I_F=10mA R_g=10Ω, C_g=25nF	-	1.9	3	mA
	Low Level Supply Current	I_{CCL}	V_F=0V, R_g=10Ω, C_g=25nF	-	1.9	3	mA

	High Level Output Voltage	V_{OH}	I_O=-100mA	V_{CC}-0.3	V_{CC}-0.2	-	V
	Low Level Output Voltage	V_{OL}	I_O=100mA	-	-	0.2	V
	Threshold Input Current	I_{FLH}	V_O 5V	-	1.2	5	mA
	Threshold Input Voltage	V_{FHL}	V_O 5V	0.8	-	-	V
	Supply Voltage	V_{CC}	-	15	-	30	V
	UVLO Threshold	VUVLO+	V_O 5V, I_F=10mA	12.1	12.8	13.5	V
		VUVLO-	V_O 5V, I_F=10mA	11.1	11.8	12.4	V

SWITCHING SPECIFICATION

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Propagation Delay Time to High Output Level	t_{PLH}	R_g=10Ω, C_g=25nF, f=20kHz, Duty Cycle=50%, I_F=7mA, V_{CC}=30V	50	-	200	ns
Propagation Delay Time to Low Output Level	t_{PHL}		50	-	200	
Pulse Width Distortion	PWD		-	-	70	
Propagation Delay Difference Between Any Two Parts	t_{PHL}- t_{PLH}		-100	-	100	
Output Rise Time (10 to 90%)	t_r	R_g=10Ω, C_g=25nF, I_F=0→7mA, V_{CC}=30V	-	50	-	
Output Fall Time (90 to 10%)	t_f	R_g=10Ω, C_g=25nF, I_F=7→0mA, V_{CC}=30V	-	50	-	
Common Mode Transient Immunity at High Level Output	$\|CM_H\|$	I_F=7mA V_{CC}=30V, T_a=25 , V_O(min)=26V V_{CM}=1500Vpp	±35	-	-	kV/μs
Common Mode Transient Immunity at Low Level Output	$\|CM_L\|$	I_F=0mA V_{CC}=30V, T_a=25 , V_O(max)=1V V_{CM}=1500Vpp	±35	-	-	kV/μs

Note1

Note2

Note3

Recommended Operating Conditions

Characteristics	Symbol	Min.	Typ.	Max.	Unit
Input On-state Current	$I_{F(ON)}$	7	-	10	mA
Input Off-state Voltage	$V_{F(OFF)}$	0	-	0.8	V
Supply Voltage	V_{CC}	15	-	30	V
Operating Frequency	f	-	-	50	kHz

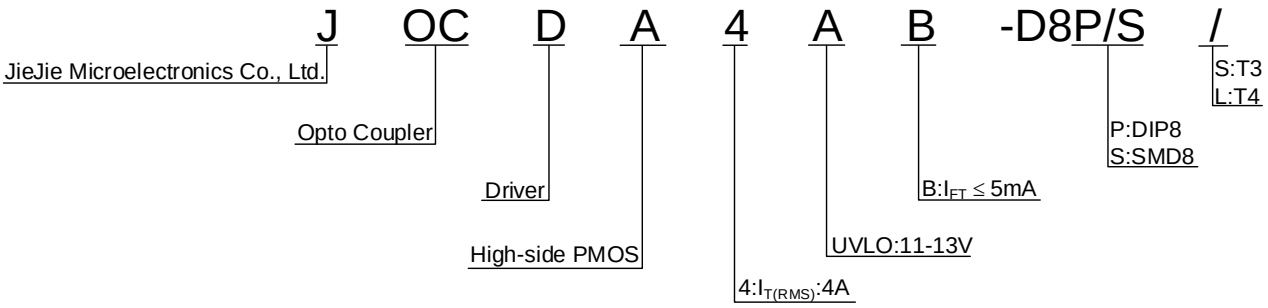
Note1

Note2

Note3

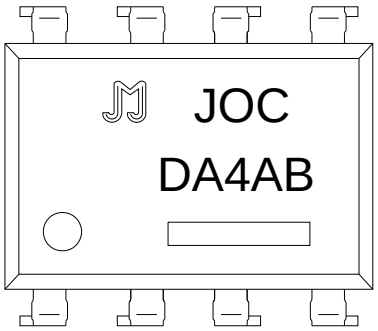
Note4

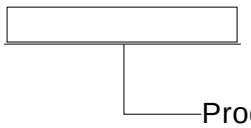
ORDERING INFORMATION



Packing Quantity			
Option	**Quantity**	**Quantity – Inner box**	**Quantity –Outer box**

MARKING





Characteristics Curves

FIG.1: Forward Current vs. Forward Voltage

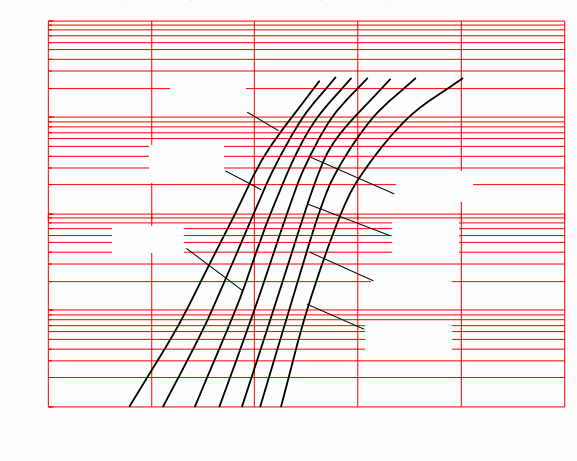


FIG.2: Max. Allowable LED Forward Current vs. Ambient Temperature

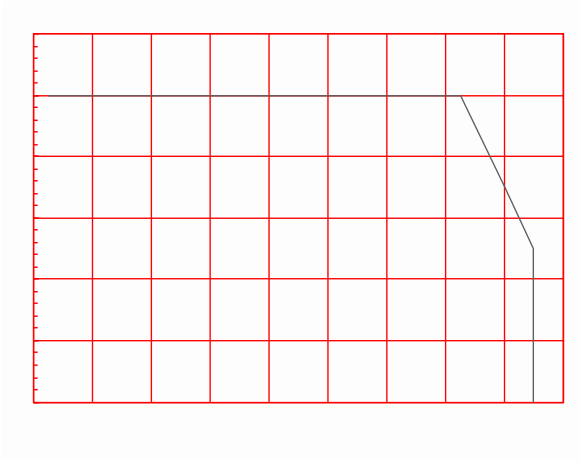


FIG.3: Collector Power Dissiption vs. Ambient Temperature

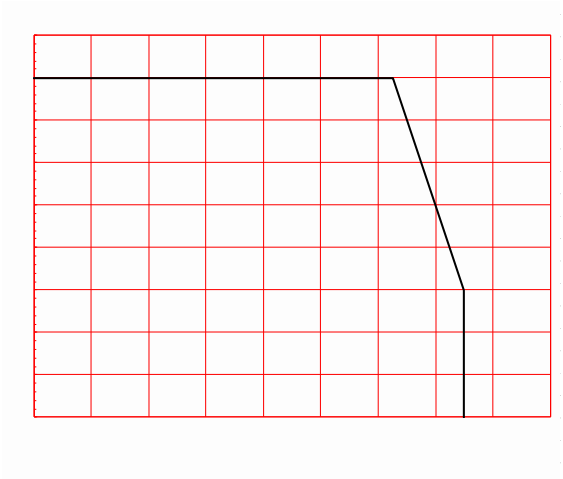


FIG.4: Threshold Input Current vs. Ambient Temperature

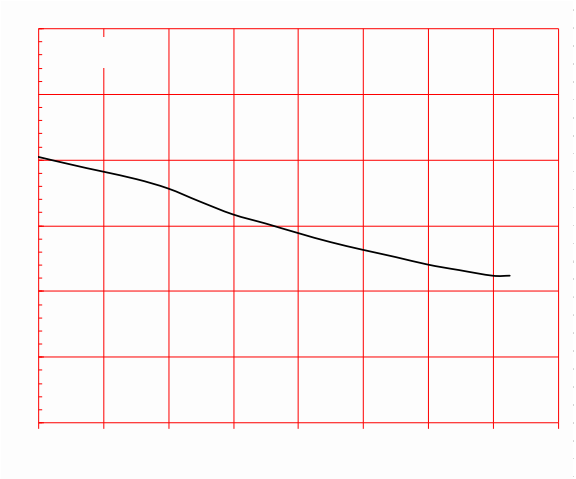


FIG.5: Low-level Supply Current vs. Ambient Temperature

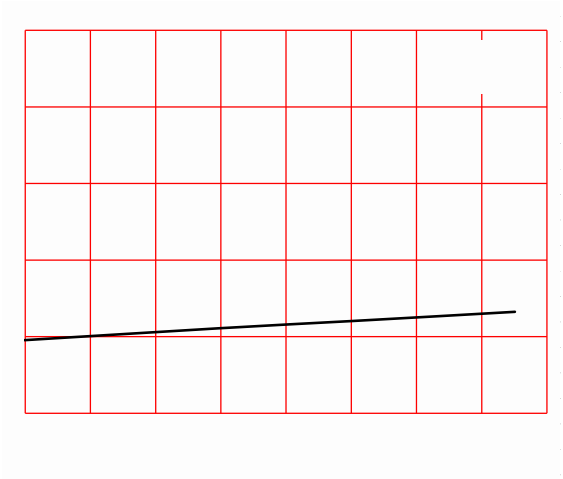


FIG.6: High-level Supply Current vs. Ambient Temperature

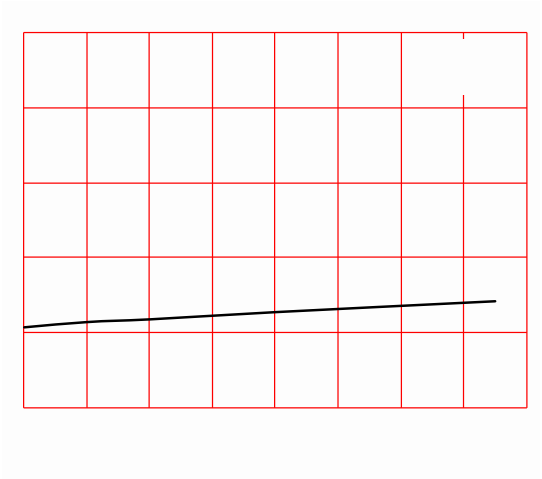


FIG.7: Low-level Output Voltage vs. Ambient Temperature

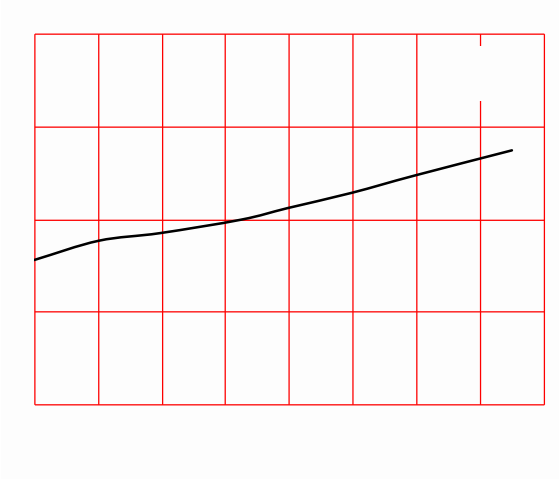


FIG.8: High-level Output Voltage vs. Ambient Temperature

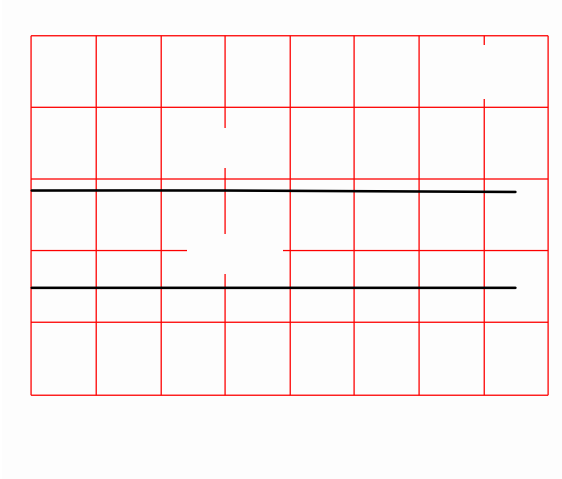
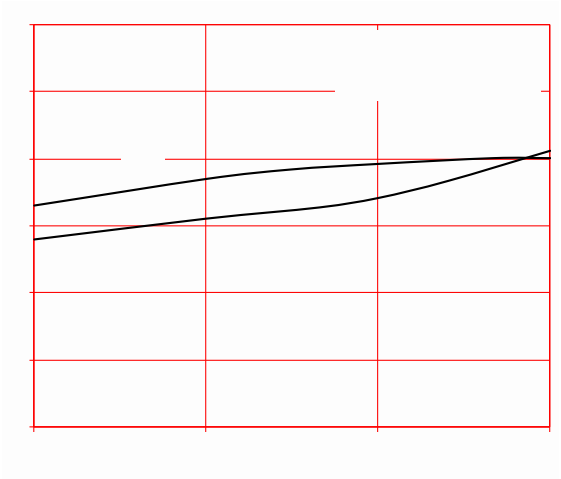


FIG.9: Peak Low-level Output Current vs. Low-level Output Voltage

FIG.10: High-level Output Voltage Drop vs. Ambient Temperature

FIG.13: Propagation Delay Time vs. Supply Voltage



Test Circuits

FIG.14: Switching Time Test Circuit and Waveform

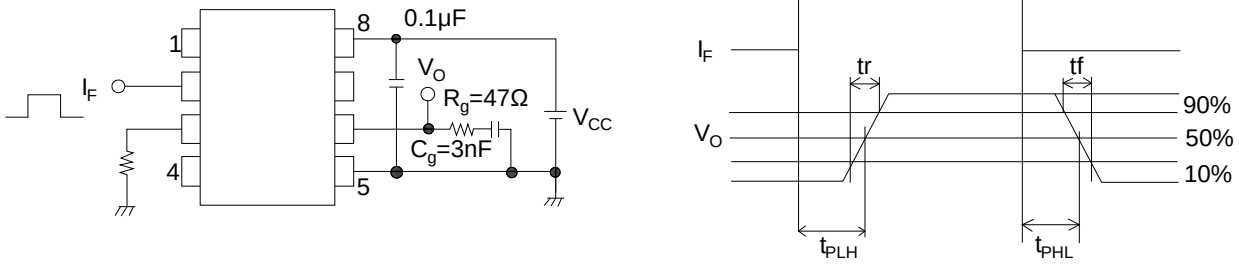
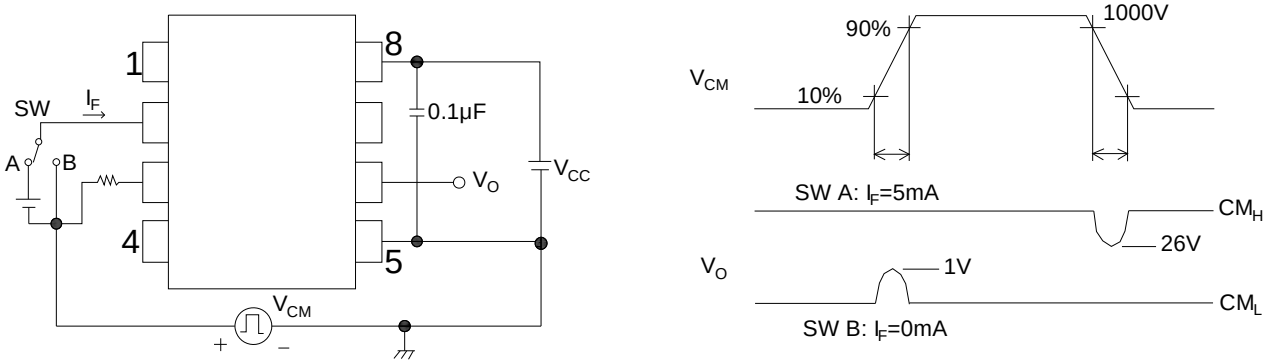
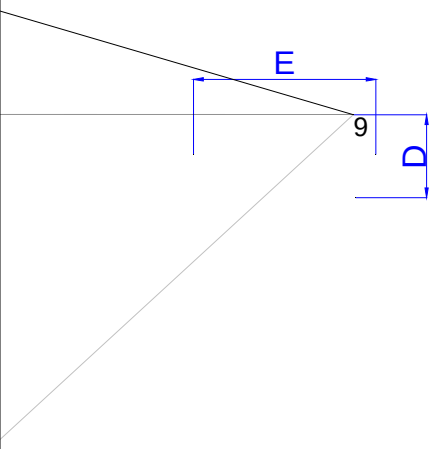


FIG.15: Common-Mode Transient Immunity Test Circuit and Waveform



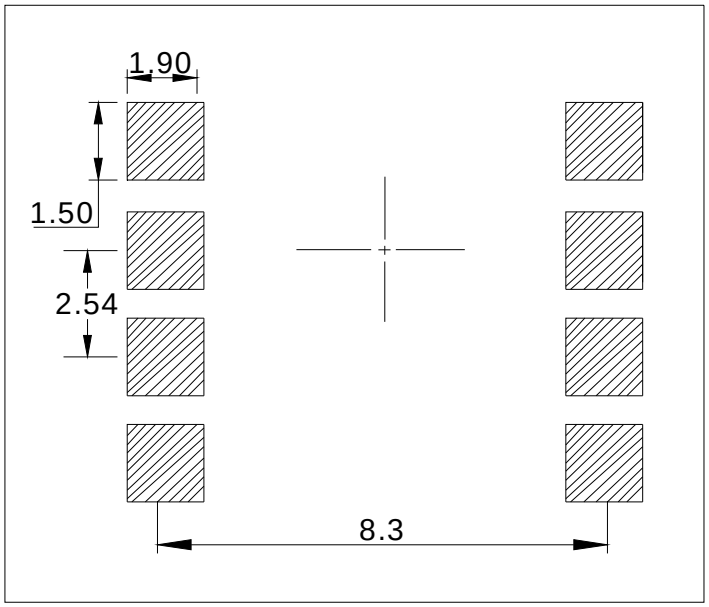
Package Dimension (Unit: mm)

Standard DIP Type:



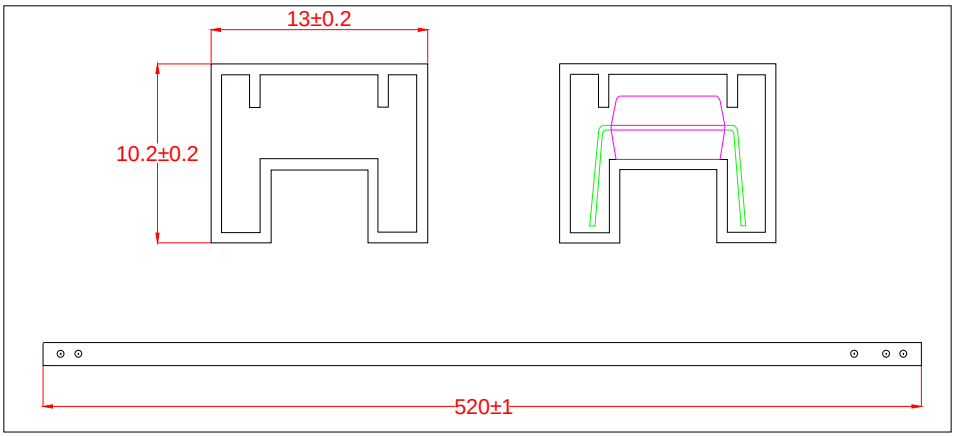
Dimensions						
Ref.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A						
BÕ	r MC-ş		þ			

RECOMMENDED SOLDER MASK (Dimensions in mm unless otherwise stated)



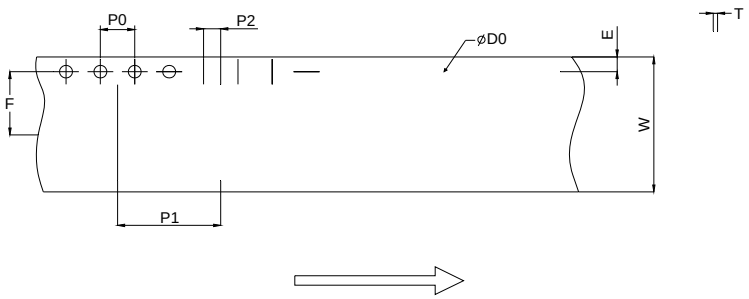
TUBE SPECIFICATIONS (Dimensions in mm unless otherwise stated)

Standard DIP



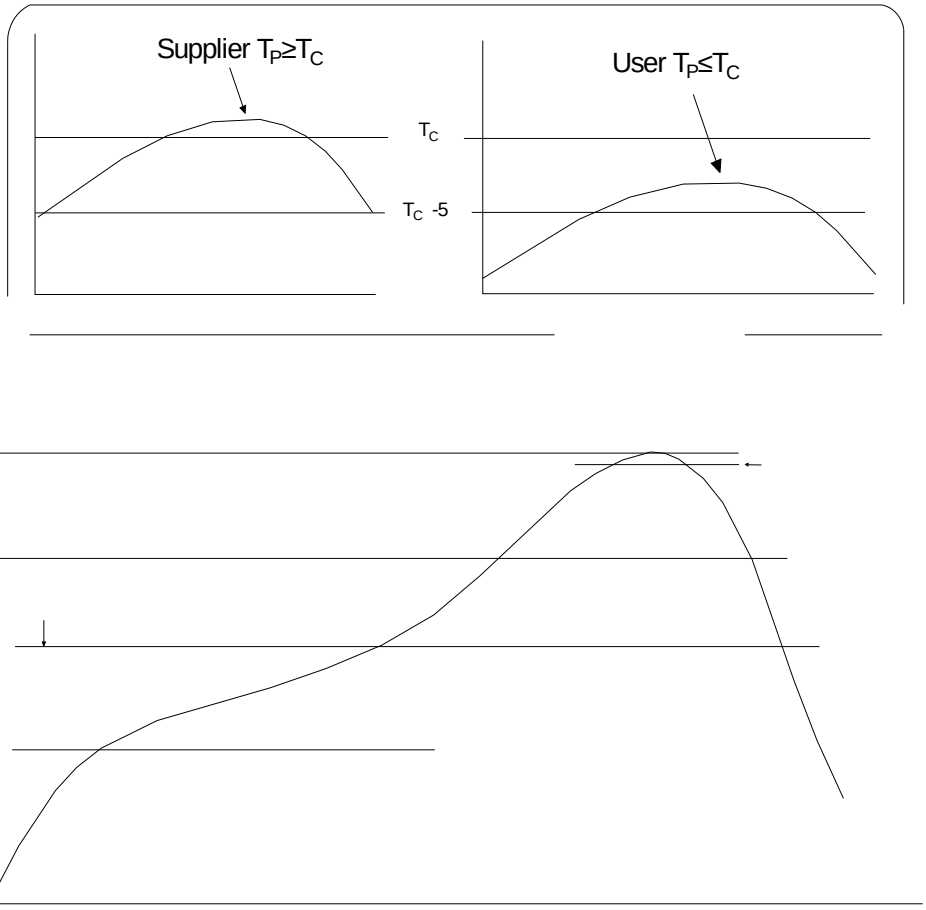
CARRIER TAPE SPECIFICATIONS (Dimensions in mm unless otherwise stated)

Option S

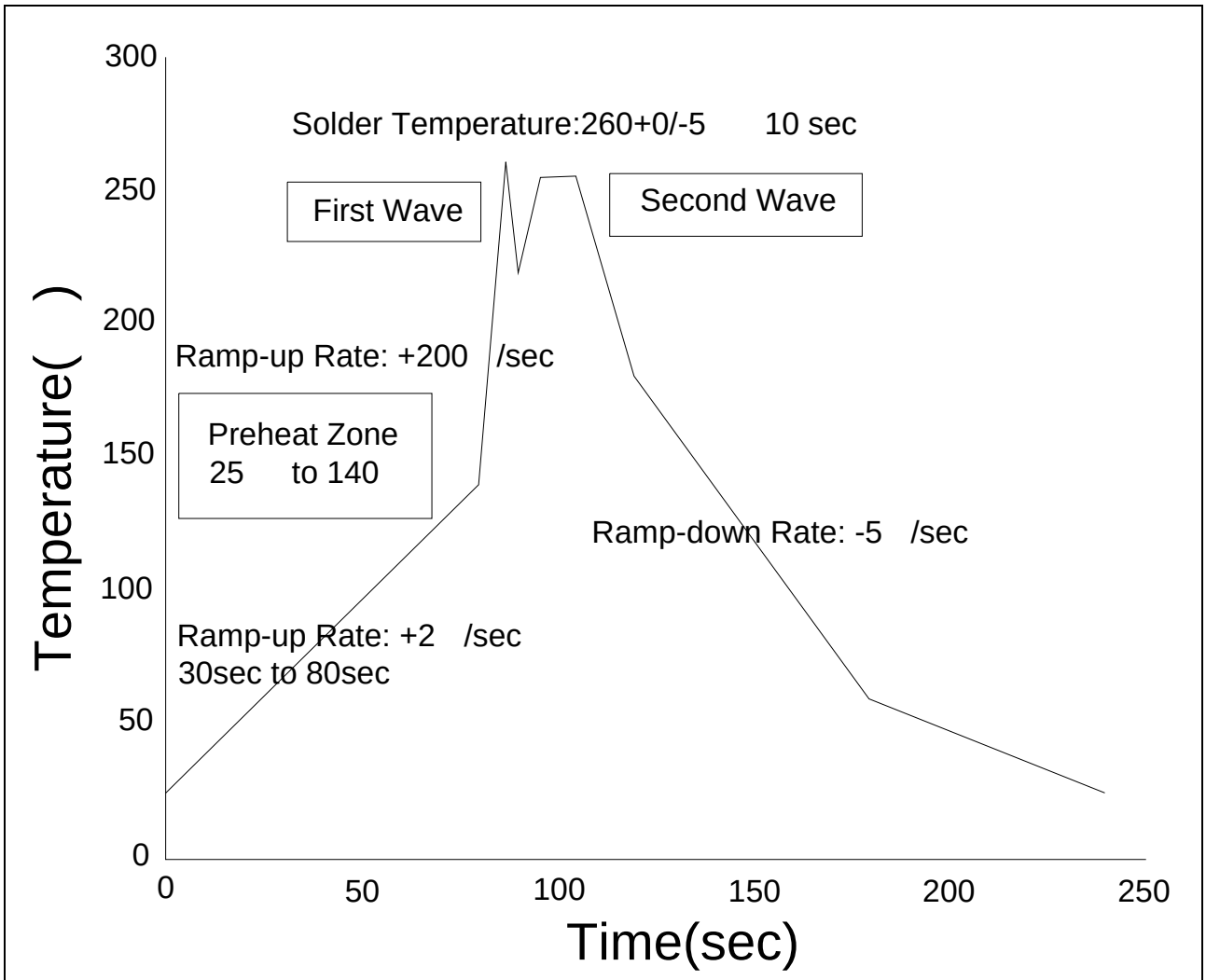


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
D0		1.50	1.60		0.059	0.063
P0	3.90	4.00	4.10	0.154	0.157	0.161
P1	11.90	12.00	12.10	0.469	0.472	0.476
P2	1.90	2.00	2.10	0.075	0.079	0.083
E	1.65	1.75	1.85	0.065	0.069	0.073
F	7.40	7.50	7.60	0.291	0.295	0.299
T	0.35	0.40	0.45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

REFLOW INFORMATION



WAVE SOLDERING



HAND SOLDERING BY SOLDERING IRON	
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 storage temperature.

3. Application of pressure on the epoxy body is prohibited at elevated temperatures.