JOCHA21X-D8P/S Series

Rev.A.1.0

DESCRIPTION:

The products are 1MBd high-speed opto-couplers. The device is a small-outline coupler suitable for surface-mount assembly. It consists of a high-output-power infrared LED optically coupled to a high-speed photodiode-transistor chip. It is housed in a plastic DIP8 package with different lead forming options package and guarantees a creepage distance of ≥5 mm, a clearance of ≥5 mm and an insulation thickness of ≥0.4 mm. Therefore, it mees

Output	Supply Voltage	V_{CC}	35	V
	Output Voltage	V_O	20	V
	Output Current	I_O	8	mA
	Output Power Dissipation	P_O	100	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: 100μs pulse, 100Hz frequency
NOTE2: AC for 1minute, R.H.=40~60%

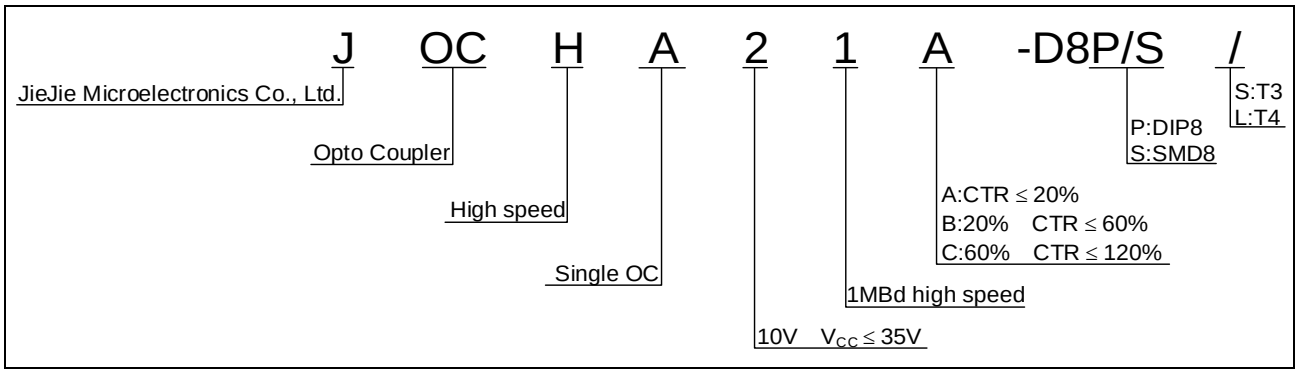
ELECTRICAL CHARACTERISTICS (Temperature=25°C)

Parameter		Symbol		Condition	Min.	Typ.	Max.	Unit
Input	Forward Voltage	V_F		I_F=10mA	-	1.35	1.6	V
	Reverse Current	I_R		V_R=6V	-	-	1	μA
	Input Capacitance	C_{in}		V=0, f=1MHz	-	60	-	pF
Output	Current transfer ratio	CTR	A	I_F=16mA, V_{CC}=4.5V, V_O=0.4V	-	-	20	%
			B		20	-	60	
			C		60	-	120	
	High Level Output Current	I_{OH}		I_F=0mA, V_{CC}=5.5V, V_O=5.5V	-	3	500	nA
				I_F=0mA, V_{CC}=15V, V_O=15V	-	-	50	μA
	Low Level Supply Current	I_{CCL}		V_O=Open, V_{CC}=15V, I_F=16mA	-	0.5	0.8	mA
	High Level Supply Current	I_{CCH}		V_O=Open, V_{CC}=15V, I_F=0mA	-	0.01	2	μA
	Logic Low Output Voltage	V_{OL}		I_F=16mA, I_O=2.4mA, V_{CC}=4.5V	-	-	0.4	V
	Isolation Resistance	R_{ISO}		DC500V 40~60%R.H.	10^{12}	10^{14}	-	Ω
	Floating Capacitance	C_{IO}		V=0, f=1MHz	-	0.8	-	pF

Propagation Delay
Time to e cmV A ⍵ M $ @xA

Switching
Characteristics

ORDERING INFORMATION



Packing Quantity

Option	Quantity	Quantity – Inner box	Quantity –Outer box

MARKING

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

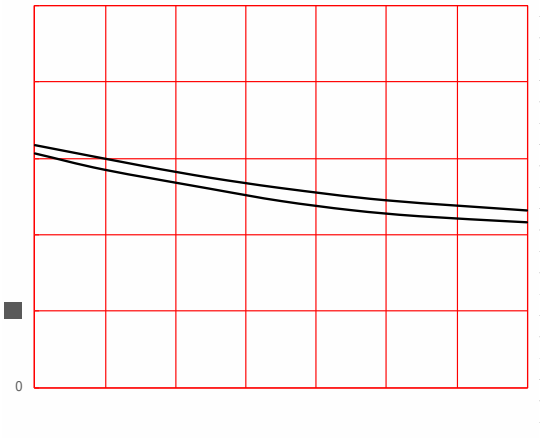


FIG.8: Propagation Delay vs. Load Resistance

TEST CIRCUITS

Fig.10: Switching Time Test Circuit and Waveform

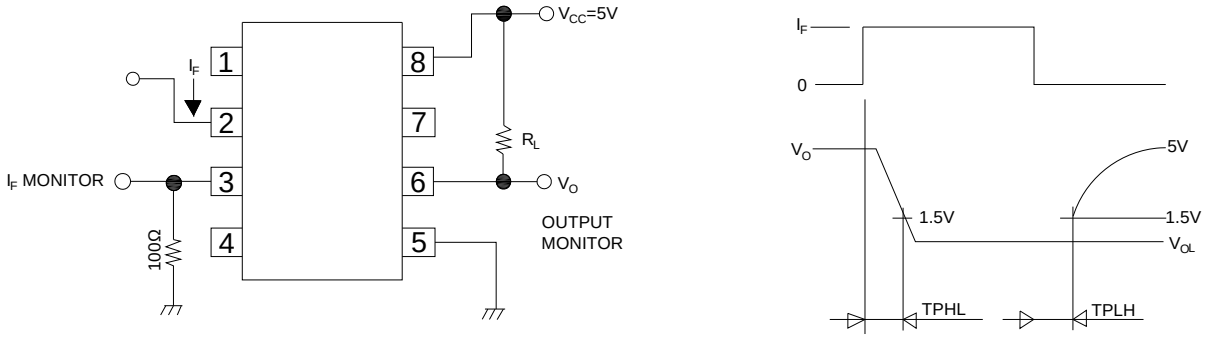
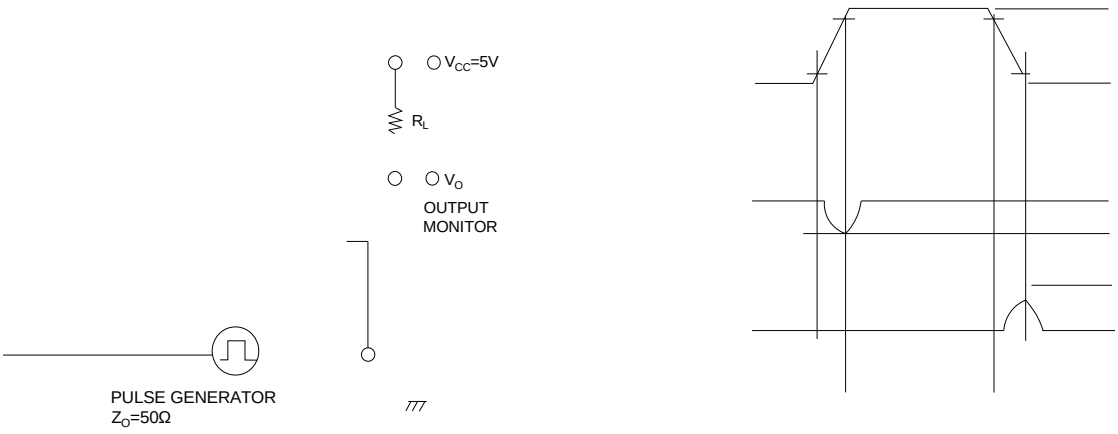
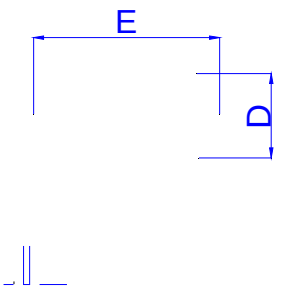


Fig.11: CMTI Test Circuit and Waveform



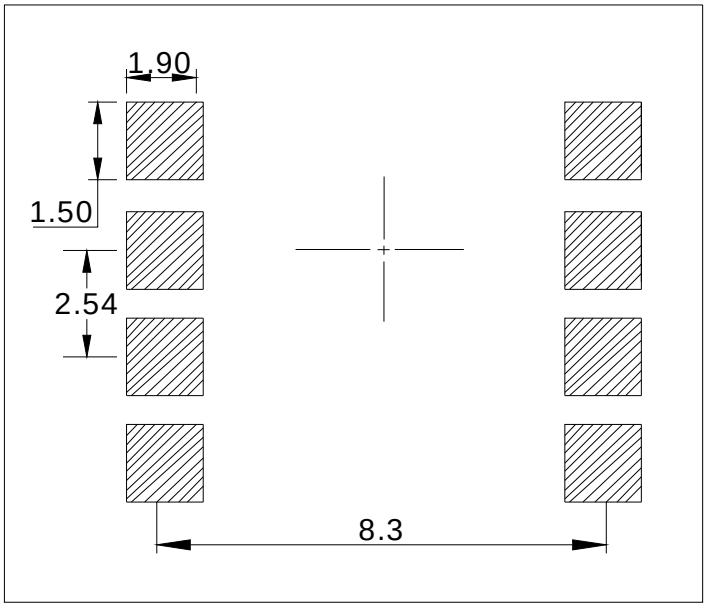
Package Dimension (Unit: mm)

Standard DIP Type:



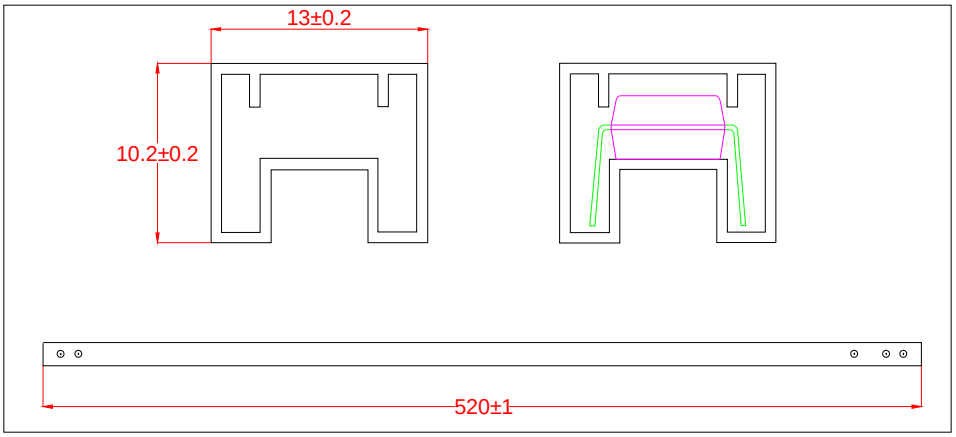
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A						
B						
C	7.15		8.95	0.281		0.352
D						
E						
F						
G						
H						
I						
J						

RECOMMENDED SOLDER MASK (Dimensions in mm unless otherwise stated)



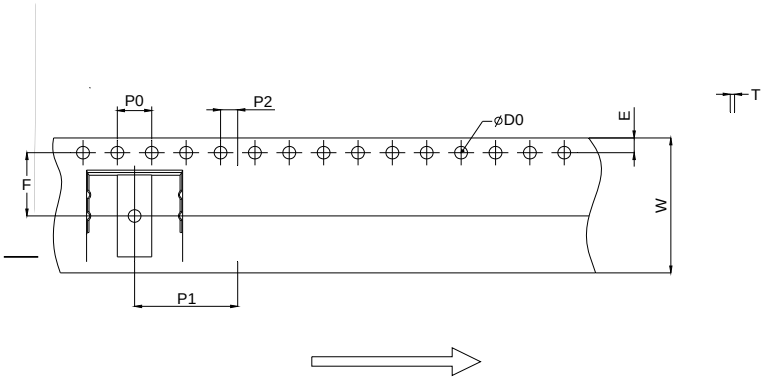
TUBE SPECIFICATIONS (Dimensions in mm unless otherwise stated)

Standard DIP



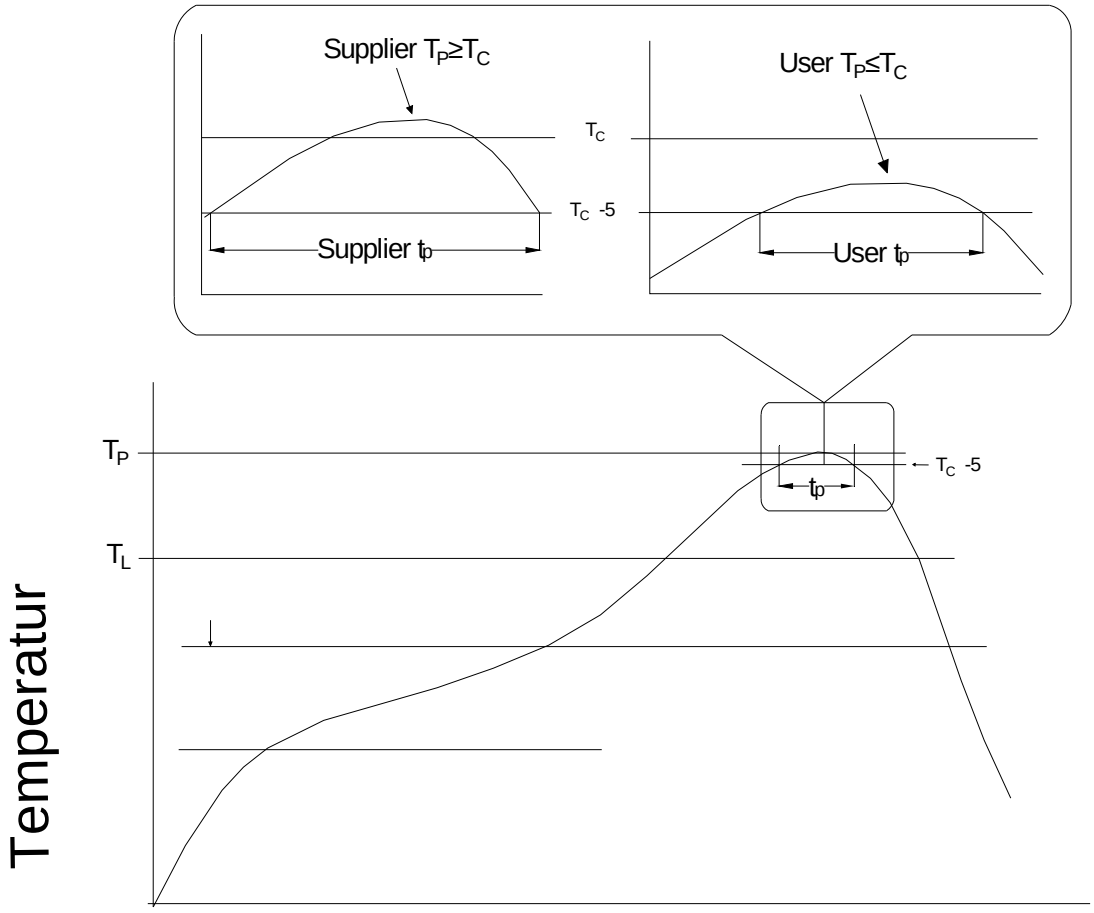
CARRIER TAPE SPECIFICATIONS (Dimensions in mm unless otherwise stated)

Option S

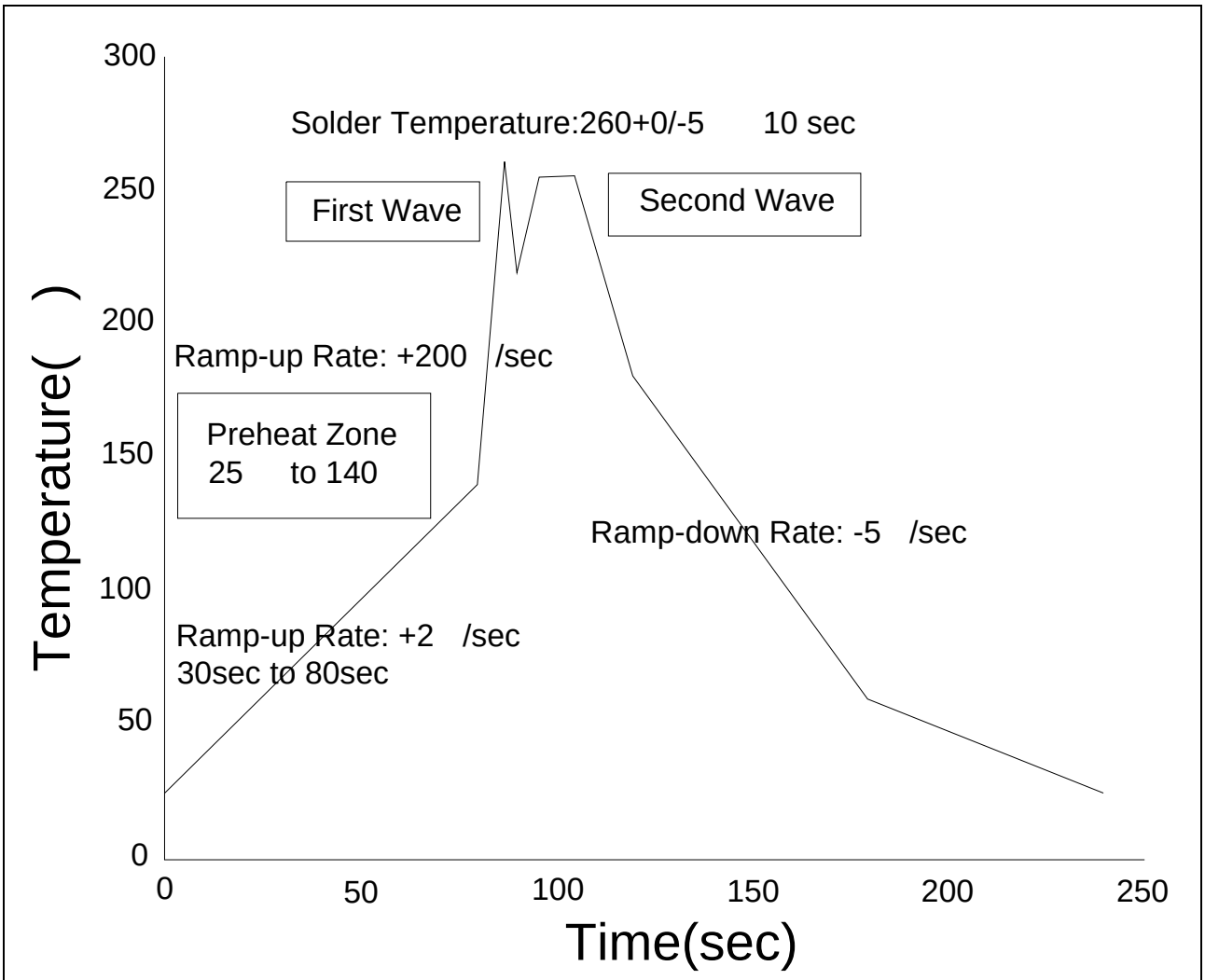


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
D0		1.50	1.60		0.059	0.063
P0	3.90	4.00	4.10	0.154	0.157	0.161
P1	11.90	12.00	12.10	0.469	0.472	0.476
P2	1.90	2.00	2.10	0.075	0.079	0.083
E	1.65	1.75	1.85	0.065	0.069	0.073
F	7.40	7.50	7.60	0.291	0.295	0.299
T	0.35	0.40	0.45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

JOCHA21X