



JOCHA22B-M5 Series

Rev.A.1.0

DESCRIPTION:

The products are 2MBd 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 the SOP5 package and guarantees a creepage distance of 5 mm, a clearance of 5 mm and an insulation thickness of 0.4 mm. Therefore, it meets the reinforced insulation class requirements of international safety standards. The products are widely used in programmable controllers, industrial inverters and switching power supplies.

MAIN FEATURES

High isolation 3750 VRMS

High speed – 2MBd typical

Operating temperature range -40°C to 110°C

REACH & RoHS compliance

HBM: H3A; MM: M4; CDM: C3

CQC M:~

	Output Current	I_o	8	mA
	Output Power Dissipation	P_o	100	mW
Total Power Dissipation		P_{tot}	200	mW
Isolation Voltage		V_{iso}	3750 ⁸	Vrms
Operating Temperature		T_{opr}	- ~110	
Junction Temperature		T_j	125	
Storage Temperature		T_{stg}	-55~125	
Soldering Temperature		T_{sol}	260	

NOTE1 $i \dot{\mu}$

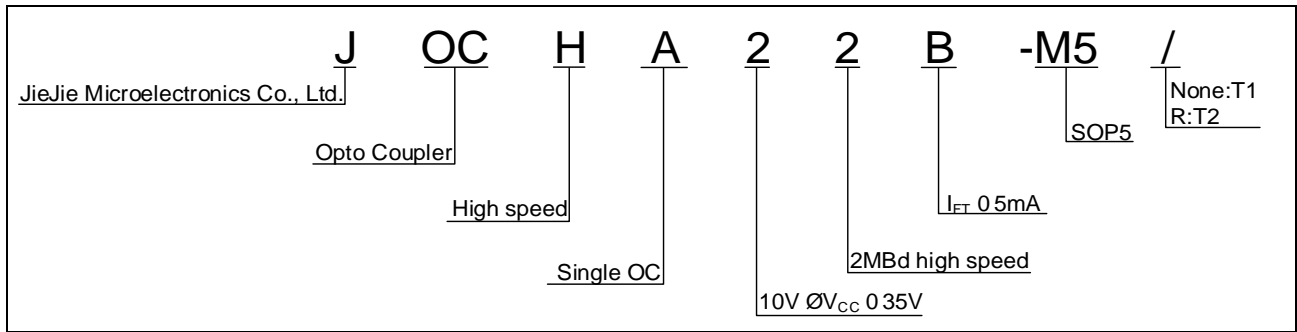
NOTE2 $(\} \text{œ } i u] v \mu \check{s} U Z X, X A \check{\delta} i \bullet \check{\delta} i 9$

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	High Level h 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}	$I_F=10mA$	-	-	1.3	mA
	High Level Supply Current	I_{CCH}	$I_F=0mA$	-	-	1.3	mA
	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}	-	
	Floating Capacitance	C_{IO}	$V=0, f=1MHz$	-	0.8	-	pF
Switching Characteristics	LED Trigger Current	I_{FT}	$I_o=0.75mA, V_O \text{ Ø} 0.8V$	-	-	5	mA
	Propagation Delay Time to Logic Low	TPHL	$I_F=0 \text{ } 10mA, R_L=20k, C_L=100pF$	30	150	400	ns

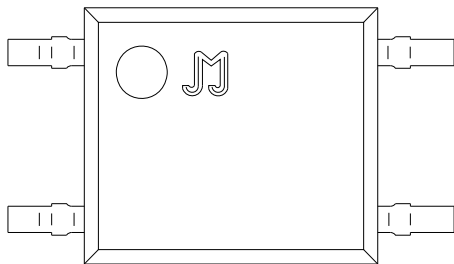
			$I_F=0$ 10mA, $R_L=20k$, $C_L=10pF$	-	70	-	ns
Propagation Delay Time to Logic High	TPLH		$I_F=10$ 0mA, $R_L=20k$, $C_L=100pF$	150	350	550	ns
			$I_F=10$ 0mA, $R_L=20k$, $C_L=10pF$	-	110	-	ns
Common Mode Transient Immunity at Logic High	CM _H		$I_F=0mA$, $V_{CM}=1500V_{pp}$, $R_L=20k$	± 20	± 25	-	kV/ μs
Common Mode Transient Immunity at Logic Low	CM _L		$I_F=10mA$, $V_{CM}=1500V_{pp}$, $R_L=20k$	± 20	± 25	-	kV/ μs

ORDERING INFORMATION



Packing Quantity	
Option	Quantity
None R	Units Reel

MARKING



Characteristics Curves

FIG.1: Forward Current vs. Forward Voltage

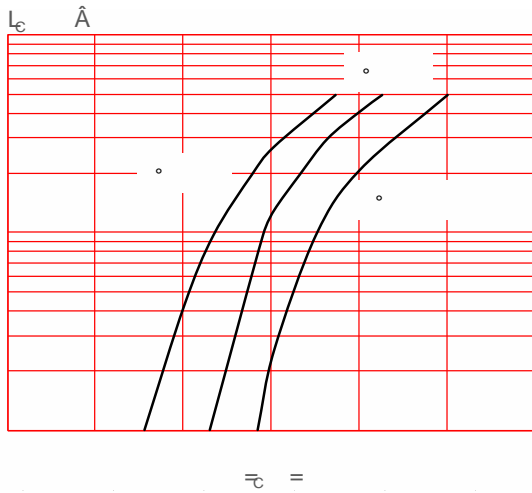


FIG.3: Output Current vs. Forward Current



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

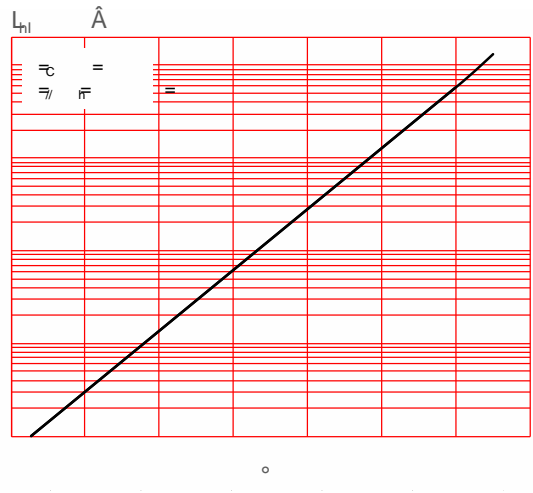


FIG.4: Threshold Input Current vs. Ambient Temperature

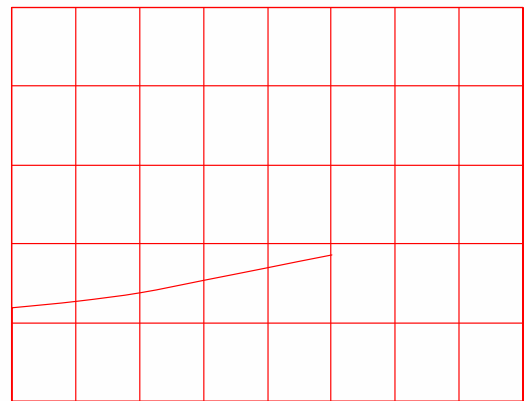


FIG.7: Propagation Delay vs. Load Resistance

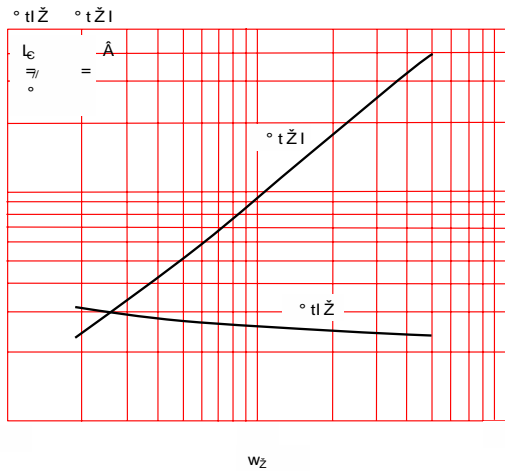
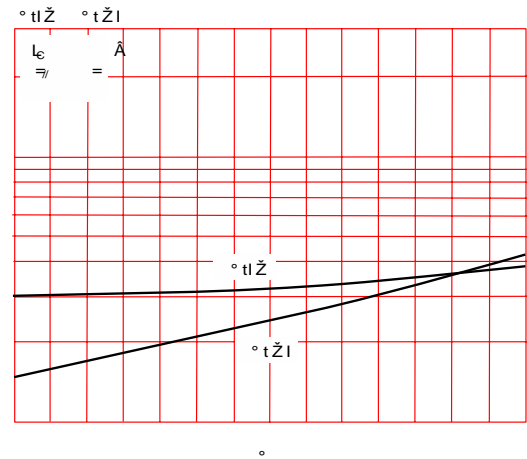
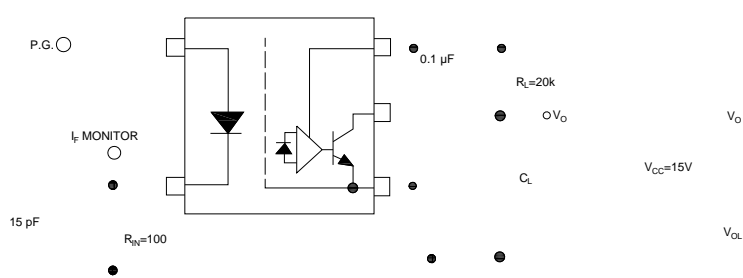


FIG.8: Propagation Delay vs. Ambient Temperature



TEST CIRCUITS

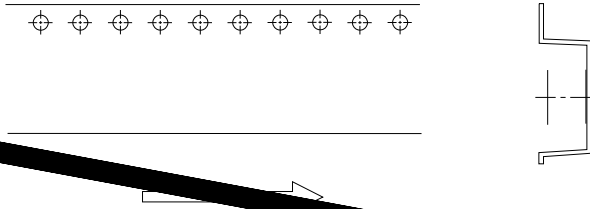
Fig.9: Switching Time Test Circuit and Waveform



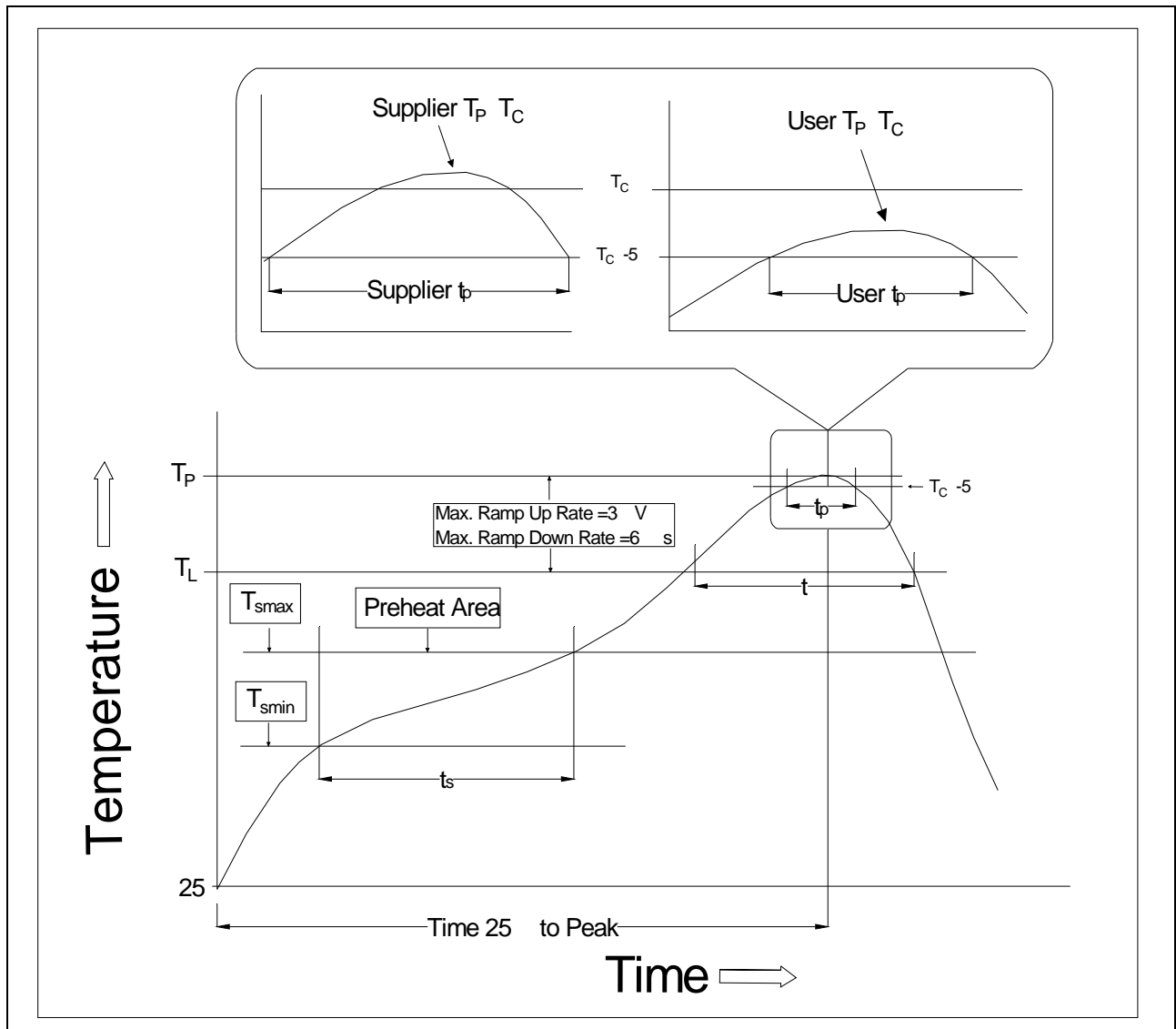
JOCHA22B

CARRIER TAPE SPECIFICATIONS (Dimensions in mm unless otherwise stated)

Option None



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.

3150

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