



JOCHA14B-M5

Rev.A.1.0

DESCRIPTION:

The products are 10MBd high-speed opto-couplers in the SOP5 package. The device consists of a high efficient AlGaAs Light Emitting Diode and a high speed optical detector. This design provides excellent AC and DC isolation between the input and output sides of the optocoupler. The output of the optical detector features an open collector Schottky clamped transistor. The enable function allows the optical detector to be strobed. A guaranteed common mode transient immunity is up to 10kV/μs at 3.3V. The optocoupler operational parameters are guaranteed over the temperature range from -40 ~ +110 . The products are widely used in isolation in line receivers, digital isolation for A/D,D/A conversion, ground loop elimination, feedback element in switching mode power supplier, pulse transformer replacement, power transistor isolation in motor drives, interface between microprocessor system, computer and their peripheral.



MAIN FEATURES

- High isolation 3750 VRMS
- High speed – 10MBd typical
- Operating temperature range -40°C to 110°C
- REACH & RoHS compliance
- HBM: H3A; MM: M4; CDM: C3
- CQC approved
- VDE approved
- UL approved

Truth Table

INPUT	OUTPUT
H	L
L	H



	Isolation Resistance	$R_{ISO}$	DC500V 40~60%R.H.	-	$10^{12}$	-	
	Floating Capacitance	$C_{IO}$	$V=0, f=1\text{MHz}$	-	1	-	pF
Switching Characteristics	Trigger LED Current	$I_{FT}$	$V_{CC}=5V,$ $V_O=V_{OL}$	-	-	5	mA
	Propagation Delay Time to Logic Low	$t_{PHL}$	$C_L=15\text{pF},$ $R_L=350 \text{ } ,$ $I_F=7.5\text{mA}$	-	-	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	$CM_H$	$V_{CC}=3.3V,$ $I_F=0\text{mA},$ $V_{CM}=1000V,$ $R_L=350$	10	15	-	kV/ $\mu\text{s}$
	Common Mode Transient Immunity at Logic Low	$CM_L$	$V_{CC}=3.3V,$ $I_F=10\text{mA},$ $V_{CM}=1000V,$ $R_L=350$	10	15	-	kV/ $\mu\text{s}$
	Rise Time	$t_r$	$C_L=15\text{pF},$ $R_L=350 \text{ } ^\wedge,$ $I_F=7.5\text{mA}$	-	30	-	ns

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Output Pull-up Resistor	R <sub>L</sub>	330	-	4k	
Fan Out (at R <sub>L</sub> =1k per channel)	N	-	-	5	TTL Loads

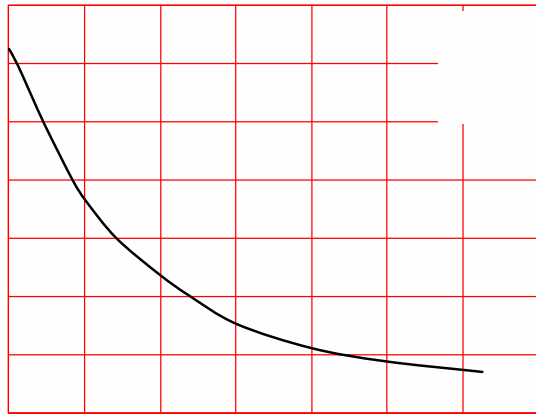
**ORDERING INFORMATION**


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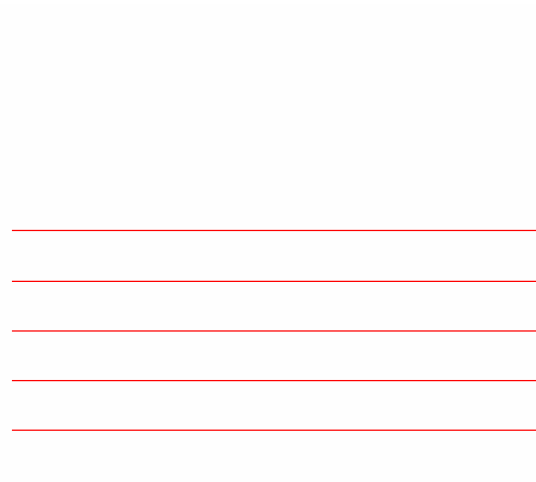
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Characteristics Curves

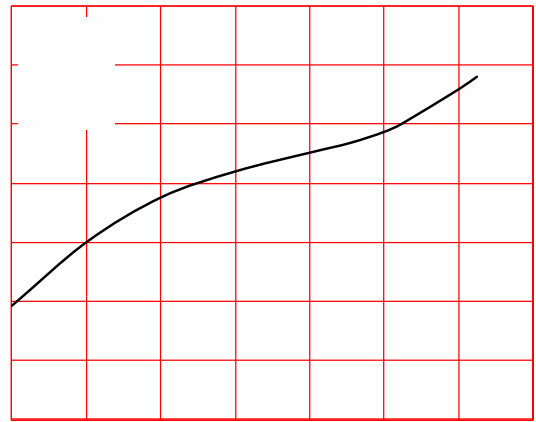
**FIG.1:** High Level Output Current vs. Ambient Temperature



**FIG.3:** Input Threshold Current vs. Ambient Temperature



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

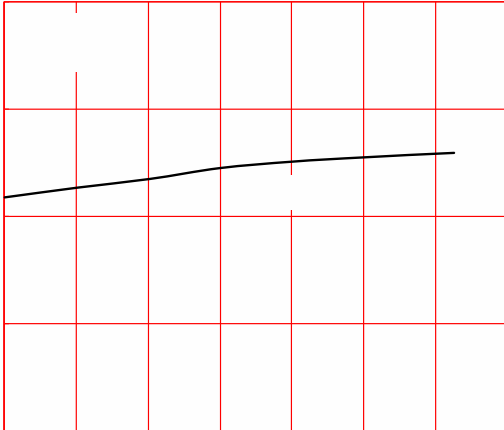


**FIG.4:** Input Threshold Current vs. Ambient Temperature

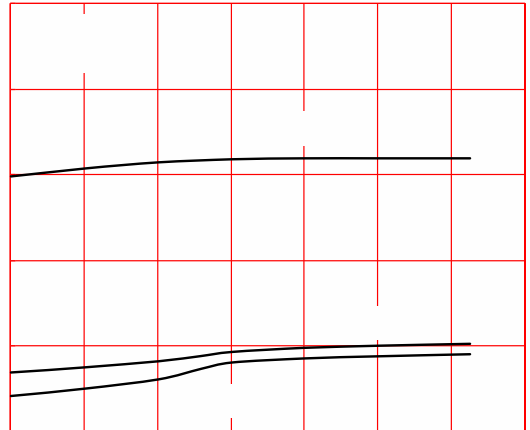
**FIG.7:** Low Level Output Current vs. Ambient Temperature

**FIG.8** Low Level Output Current vs. =

**FIG.13:** Pulse Width Distortion vs. Ambient Temperature

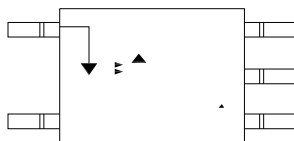


**FIG.14:** Pulse Width Distortion vs. Ambient Temperature

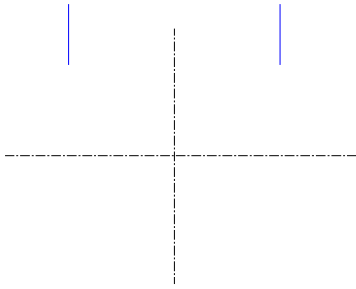


TEST CIRCUITS

**Fig.15:** Test Circuit and Waveform of  $t_{PHL}$ ,  $t_{PLH}$



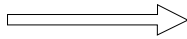
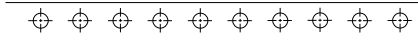
Package Dimension (Unit: mm)



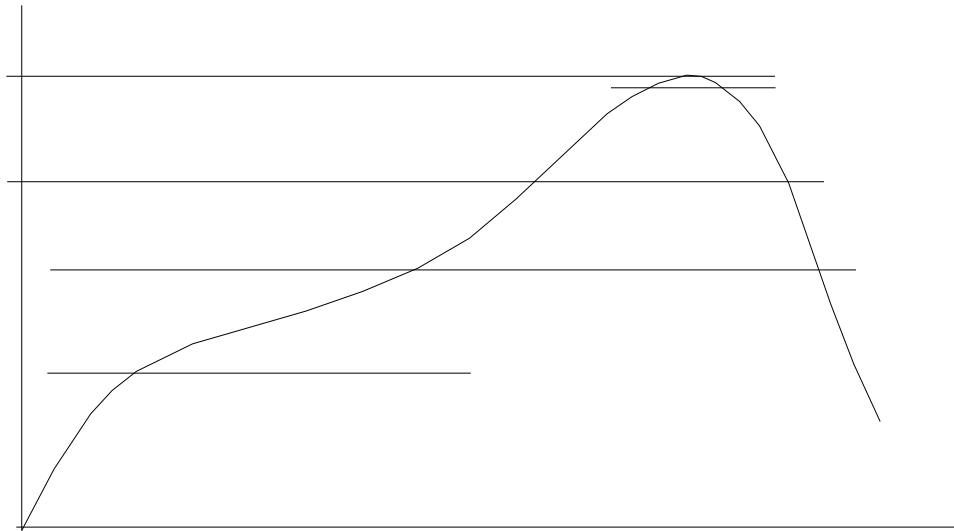
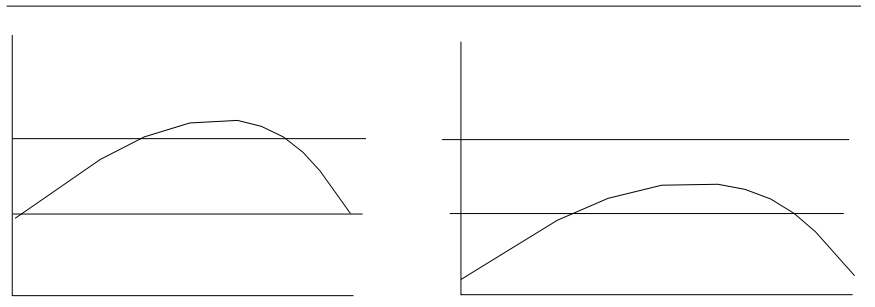
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.80	0.173		0.189
B	3.60		4.20	0.142		0.165
C	0.00		0.20	0.000		0.008
D	1.90		2.30	0.075		0.091
E	5.00		5.60	0.197		0.220
F	0.34		0.94	0.013		0.037
G	6.70		7.30	0.264		0.287
H	0.10		0.30	0.004		0.012
I	2.00		2.40	0.079		0.094
J	0.25		0.55	0.010		0.022
K						

**CARRIER TAPE SPECIFICATIONS (Dimensions in mm unless otherwise stated)**

**Option None**



REFLOW INFORMATION



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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