JOCDE0CB-M5 **Rev.A.1.0**

The products are gate driver opto-couplers in the SOP5 package. The device consists of an infrared LED optically coupled to an integrated high-gain, high-speed photodetector IC chip. It provides guaranteed performance and specifications at temperature up to 110 . It is physically smaller and compliant with international safety standards for reinforced insulation. It thus provides a smaller footprint solution for applications that require safety standard certification. An internal noise shield provides a guaranteed common-mode transient immunity of ±35 kV/μs. It is ideal for small class IGBT and power MOSFET gate drive. The products are widely used in industrial inverters, IGBT gate drivers, MOSFET gate drivers, induction cooktop and home appliances.

High isolation 3750 VRMS
Buffer logic type

Detector	Output Voltage	V_O	30	V
	Supply Voltage	V_{CC}	30	V
	Power Dissipation	P_C	400	mW
Isolation Voltage		V_{iso}	3750	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	

: 100μs pulse, 100Hz frequency

: AC for 1minute, R.H.=40~60%

(Temperature=25°C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit

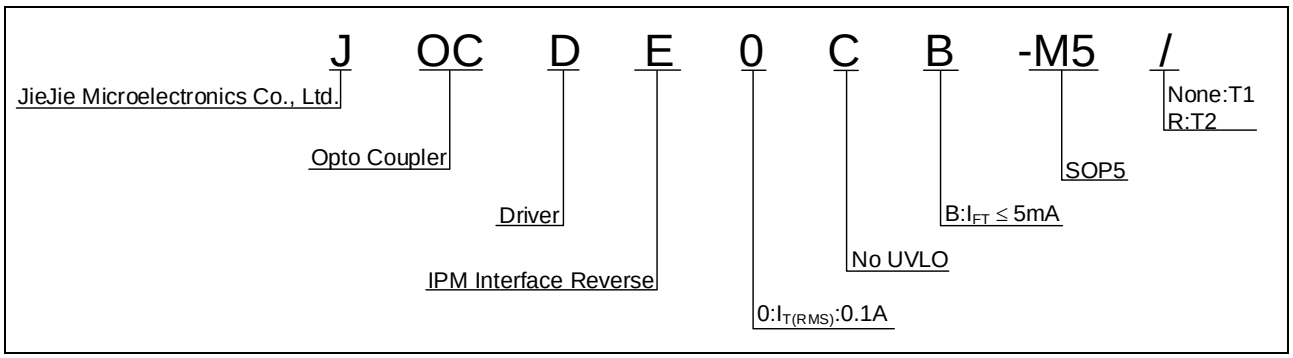
			V_F=0.8V, I_O=6.5mA	-	0.047	0.4	V
	Threshold Input Current	I_{FLH}	V_{CC}=15V, V_O 1V	-	1.2	5	mA
	Threshold Input Voltage	V_{FHL}	V_{CC}=15V, V_O 1V	0.8	-	-	V
	Supply Voltage	V_{CC}	-	4.5	-	30	V

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Propagation Delay Time to High Output Level	t_{PLH} :	R_g=47Ω, C_g=3nF, I_F=0→5mA, V_{CC}=30V	35	-	120	ns
Propagation Delay Time to Low Output Level	t_{PHL} :	R_g=47Ω, C_g=3nF, I_F=5→0mA, V_{CC}=30V	35	-	120	
Propagation Delay Difference Between Any Two Parts	t_{PHL}- t_{PLH} :	R_g=47Ω, C_g=3nF, I_F=0←→5mA, V_{CC}=30V	-	-	40	
Output Rise Time (10 to 90%)	t_r :	R_g=47Ω, C_g=3nF, I_F=0→5mA, V_{CC}=30V	-	3	30	
Output Fall Time (90 to 10%)	t_f :	R_g=47Ω, C_g=3nF, I_F=5→0mA, V_{CC}=30V	-	3	30	
Common Mode Transient Immunity at High Level Output	$\|CM_H\|$	I_F=5mA V_{CC}=30V, T_a=25 , V_O(min)=26V V_{CM}=1000Vpp	±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}=1000Vpp	±35	-	-	kV/μs

All Typical values at T_a=25 ł

: Input signal (f=25kHz,duty=50%, tr=tf=5ns or less). C_L is less than 15 pF which includes probe and stray wiring capacitance.

Characteristics	Symbol	Min.	Typ.	Max.	Unit



None/R	3000 Units/Reel

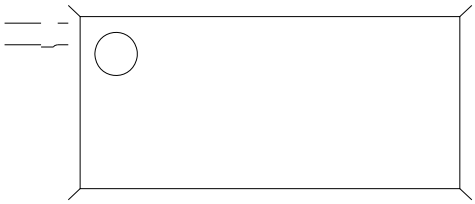


FIG.1: Forward Current vs. Forward Voltage

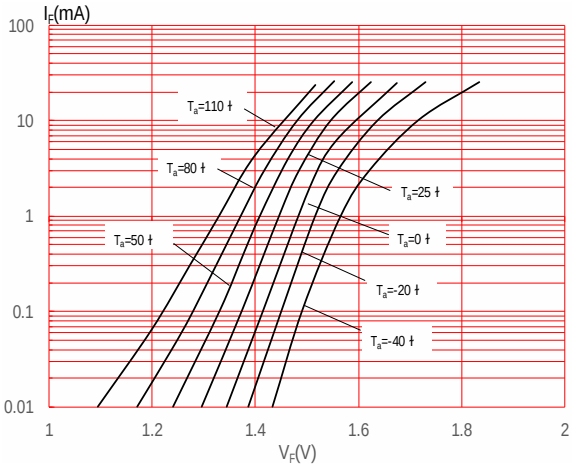


FIG.2: Max. Allowable LED Forward Current vs. Ambient Temperature

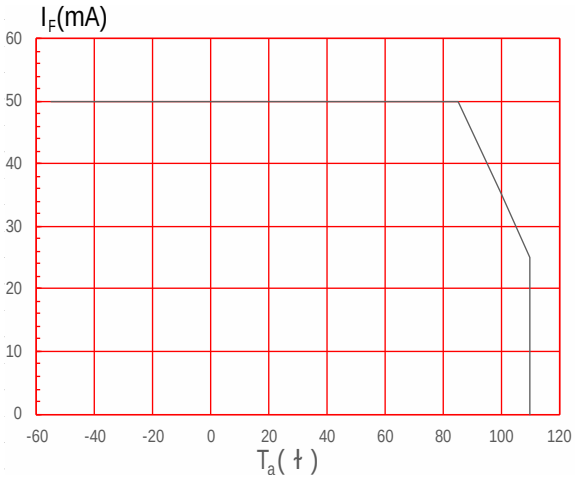


FIG.3: Collector Power Dissipation vs. Ambient Temperature

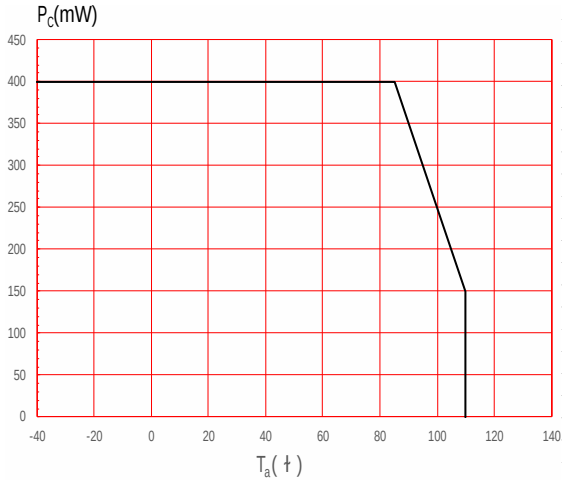


FIG.4: Threshold Input Current vs. Ambient Temperature

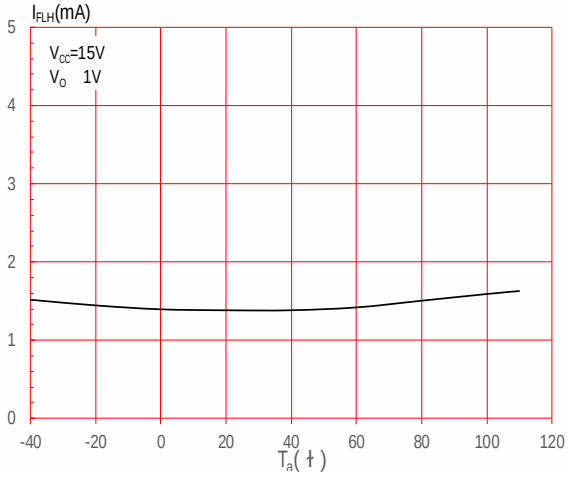


FIG.5: Low-level Supply Current vs. Ambient Temperature

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

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

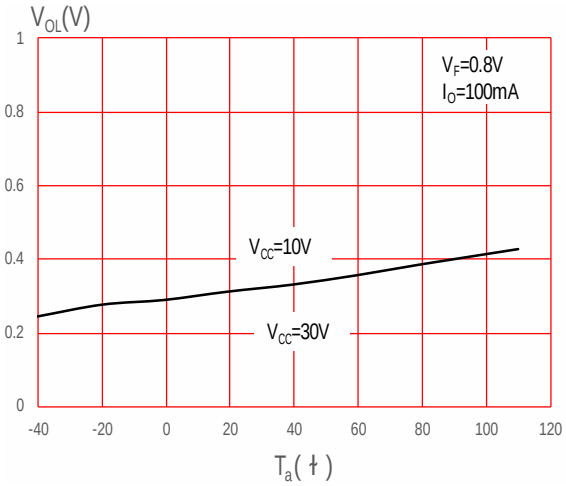


FIG.8: High-level Output Voltage vs. Ambient Temperature

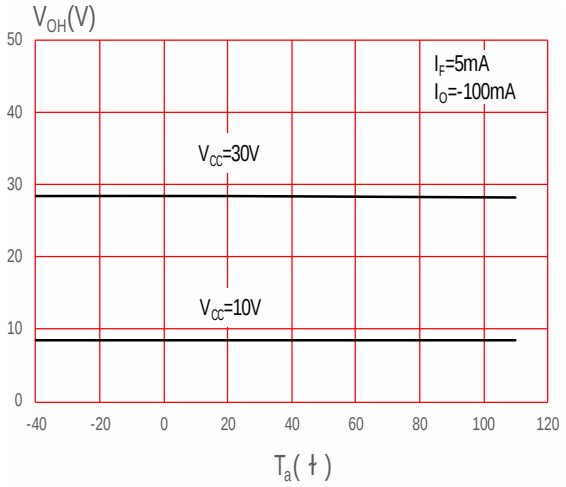


FIG.9: Low-level Output Voltage vs. Peak Low-level Output Current

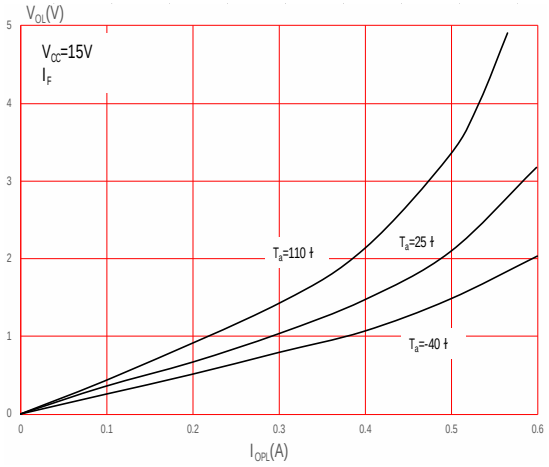
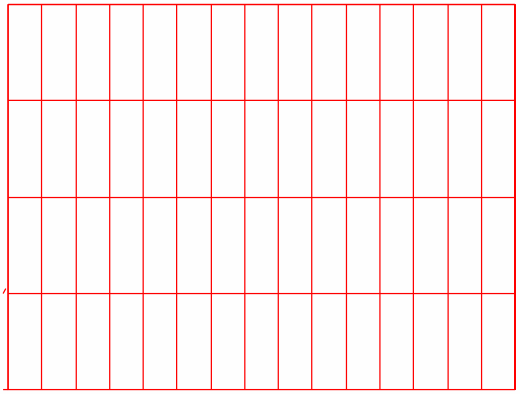
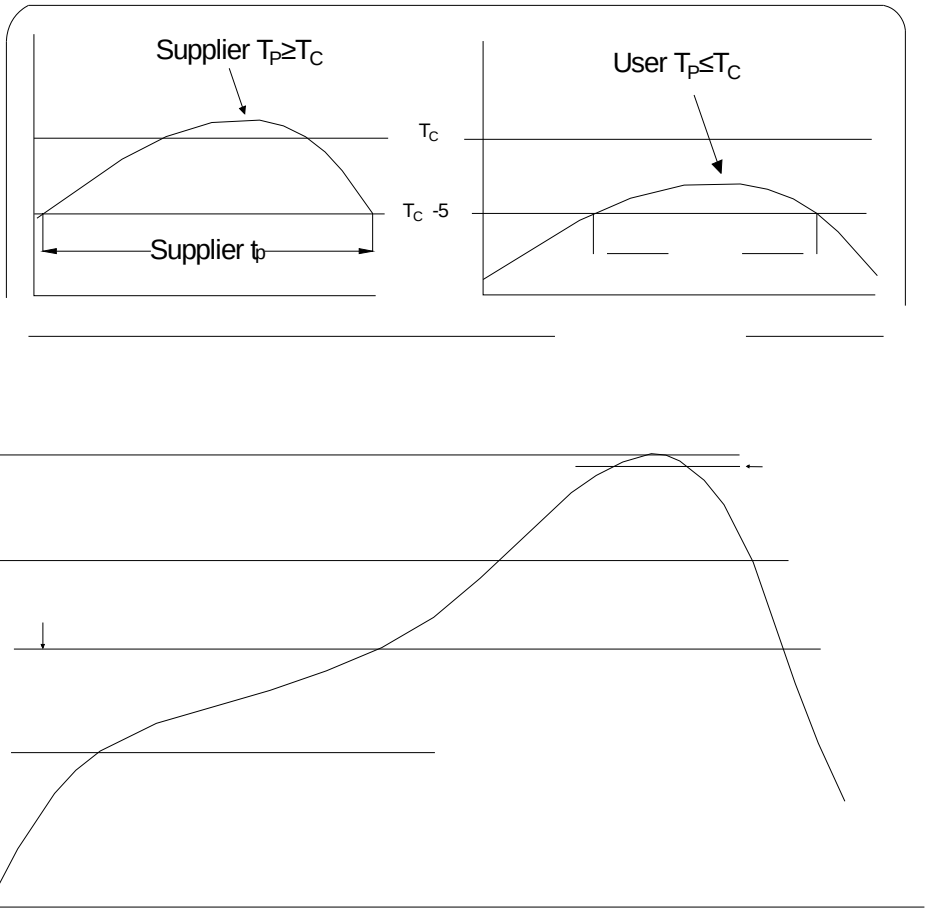


FIG.10: High-level Output Voltage Drop vs. Peak High-level Output Current



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A						
B						
C						
D						
E						
F	0.34			0.013		
G						
H						
I	2.00			0.079		
J			0.55	0.010		


Supplier $T_P \geq T_C$
User $T_P \leq T_C$
T_C
T_C -5
Supplier t_p

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 Ď w midity: <60%;

MSL level: MSL 1