JOCDA4AB-W8

Rev.A.1.0

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The products are gate driver opto-couplers in a plastic WSOP8 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 ± 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.

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High isolation 7500 VRMS
Buffer logic type
Operating temperature range -40°C to 110°C
REACH & RoHS compliance
HBM: H3A; MM: M4; CDM: C3
CQC approved
VDE approved
UL approved

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LED	V_{CC}-V_{EE} (Positive Going)	V_{CC}-V_{EE} (Negative Going)	Output

	High Level Output Voltage	V_{OH}	I_F=5mA, V_{CC}=10V, I_O=-100mA	6	8.4	-	V
	Low Level Output Voltage	V_{OL}	V_F=0.8V, V_{CC}=10V, I_O=100mA	-	0.3	1	V
	Threshold Input Current	I_{FLH}	V_{CC}=15V, V_O 1V	-	1.5	4	mA
	Threshold Input Voltage	V_{FHL}	V_{CC}=15V, V_O 1V	0.8	-	-	V
	Supply Voltage	V_{CC}	-	15	-	30	V
	High Level Output Voltage	V_{OH}	I_F=5mA, V_{CC}=10V, I_O=-100mA	6	8.4	-	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

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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	30	-	500	ns
Propagation Delay Time to Low Output Level	t_{PHL}	R_g=47Ω, C_g=3nF, I_F=5→0mA, V_{CC}=30V	30	-	500	
Propagation Delay Difference Between Any Two Parts	t_{PHL}- t_{PLH}	R_g=47Ω, C_g=3nF, I_F=0←→5mA, V_{CC}=30V	-	-	350	
Output Rise Time (10 to 90%)	t_r	R_g=47Ω, C_g=3nF, I_F=0→5mA, V_{CC}=30V	-	50	-	
Output Fall Time (90 to 10%)	t_f	R_g=47Ω, C_g=3nF, I_F=5→0mA, V_{CC}=30V	-	50	-	

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

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Characteristics	Symbol	Min.	Typ.	Max.	Unit
Input On-state Current	$I_{F(ON)}$	6.5	-	10	mA
Input Off-state Voltage	$V_{F(OFF)}$	0	-	0.8	V
Supply Voltage	V_{CC}	15	-	30	V
Operating Frequency	f	-	-	25	kHz Ź

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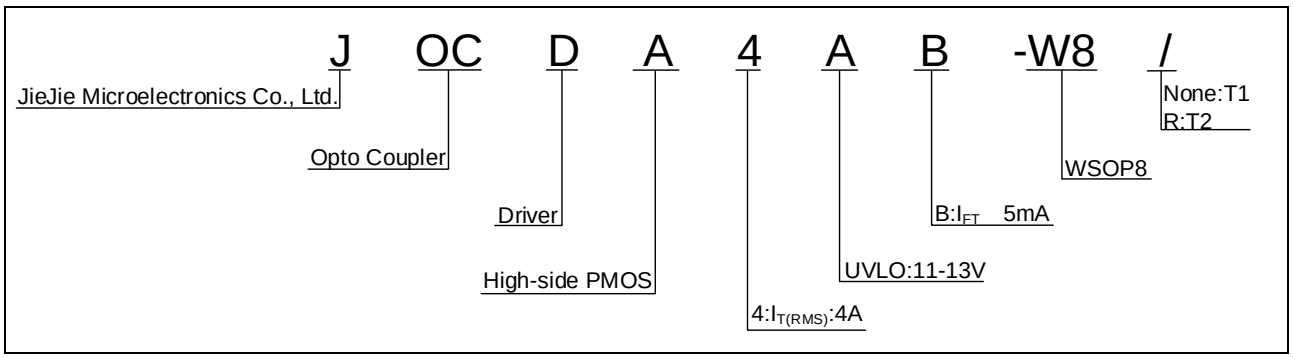

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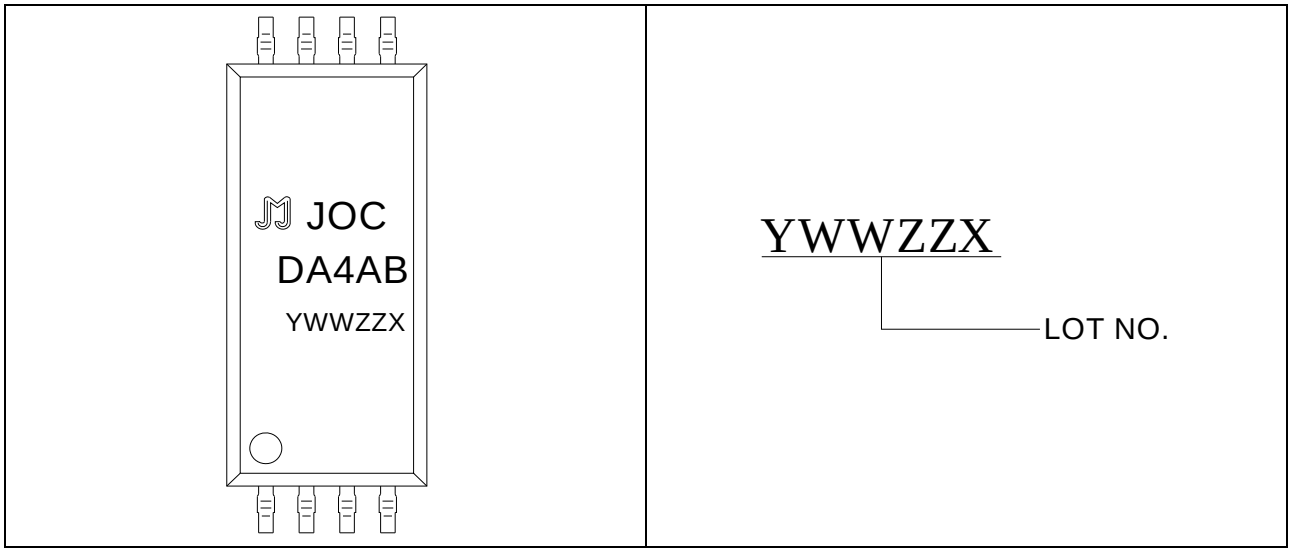

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FIG.1: Forward Current vs. Forward Voltage

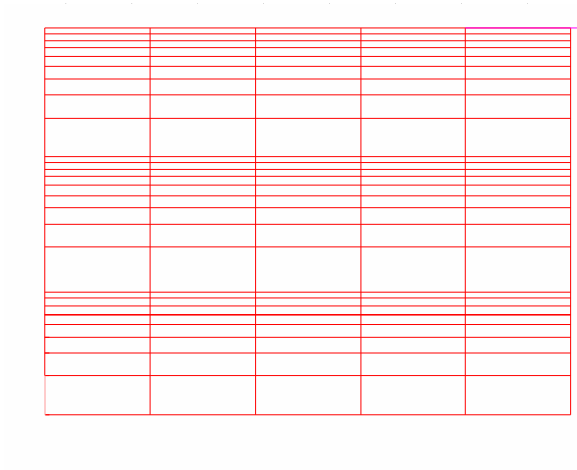

FIG.2: Max. Allowable LED Forward Current vs. Ambient Temperature

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

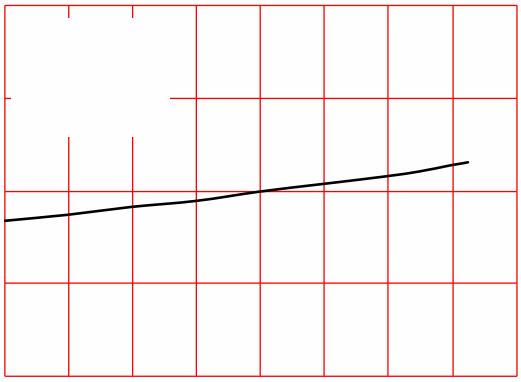

FIG.8: High-level Output Voltage vs. Ambient Temperature

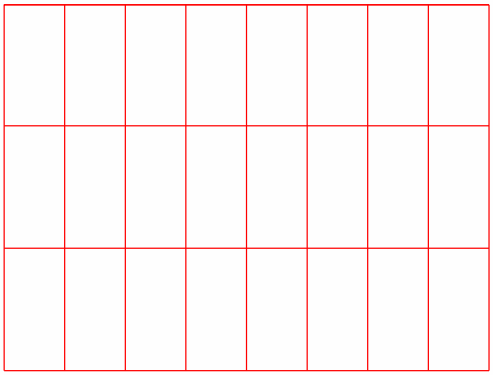

FIG.13: Propagation Delay Time vs. Supply Voltage

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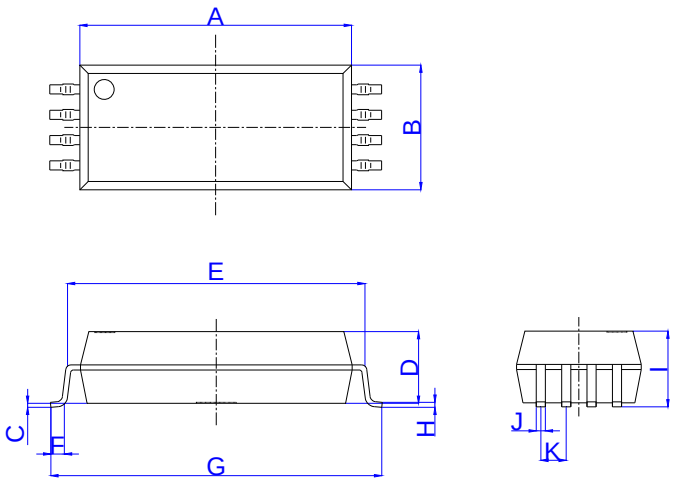

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	13.50		13.70	0.531		0.539
B	6.15		6.35	0.242		0.250
C	0.10		0.30	0.004		0.012
D	3.50		3.70	0.138		0.146
E	14.71		15.31	0.579		0.603
F	0.52		1.02	0.020		0.040
G	16.36		16.86	0.644		0.664
H	0.10		0.40	0.004		0.016
I	3.65		3.95	0.144		0.156
J	0.307		0.607	0.012		0.024
K	1.02		1.52	0.040		0.060

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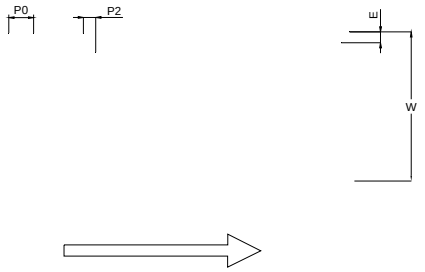

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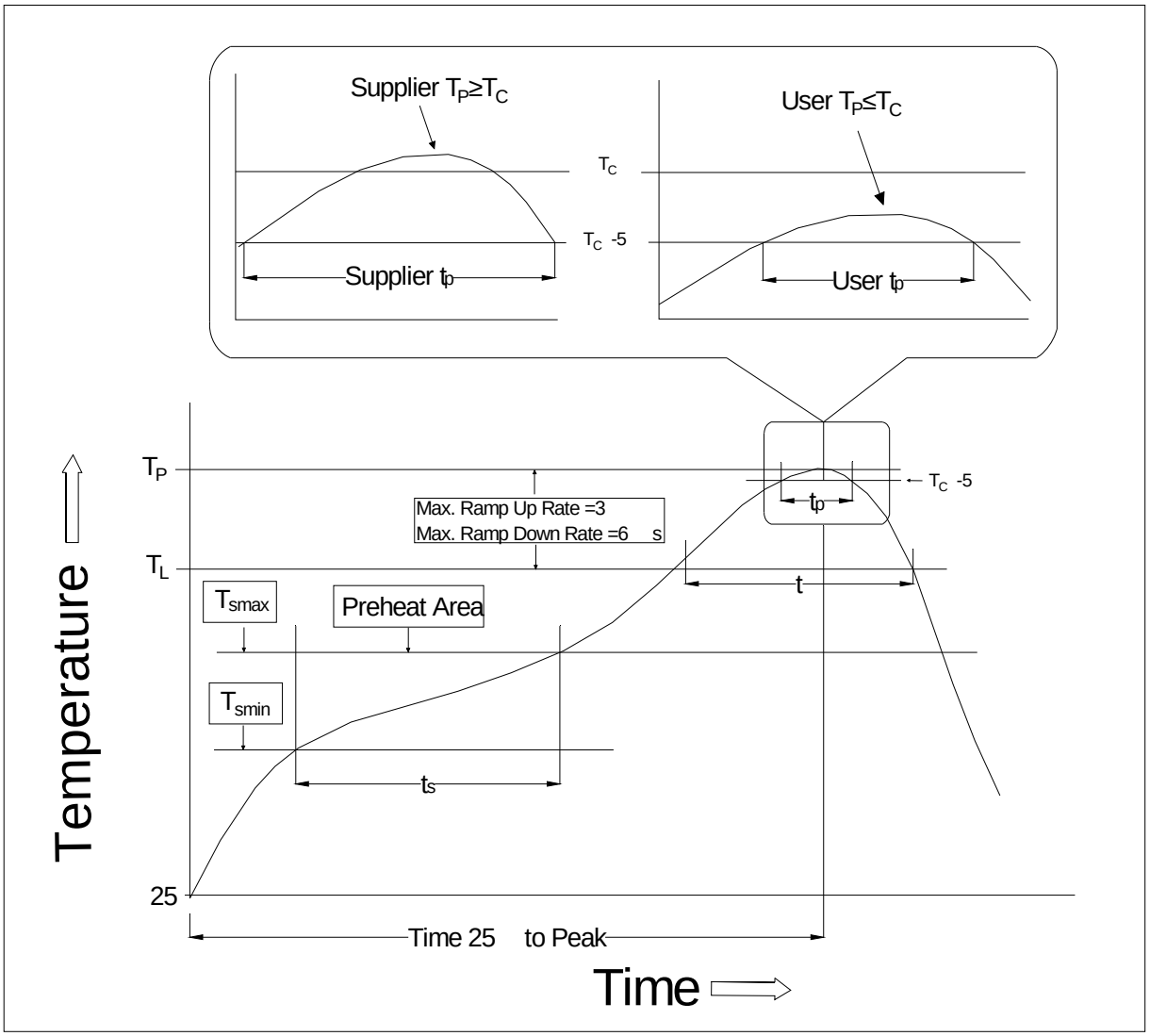

Profile Feature	Sn-Pb Assembly Profile	Pb-Free Assembly Profile
Temperature Min. (Tsmin)	100	150
Temperature Max. (Tsmax)	150	200
Time (ts) from (Tsmin to Tsmax)	60-120 seconds	60-120 seconds
Ramp-up Rate (tL to tP)	3 /second max.	3 /second max.
Liquidus Temperature (TL)	183	217
Time (tL) Maintained Above (TL)	60-150 seconds	60-150 seconds
Peak Body Package Temperature	235 +0 /-5	260 +0 /-5
Time (tP) within 5 of 260	20 seconds	30 seconds
Ramp-down Rate (TP to TL)	6 /second max.	6 /second max.
Time 25 to Peak Temperature	6 minutes max.	8 minutes 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. 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 lif