JOCDA1BB-D8P/S Series

Rev.A.1.0

DESCRIPTION:

The products are gate driver opto-couplers in a plastic DIP8 package with different lead forming options. 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

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ABSOLUTE MAXIMUM RATINGS (Temperature=25°C)

Parameter		Symbol	Value	Unit
LED	Forward Current	I_F	50	mA
	Peak Forward Current	I_{FP}	1	A
	Reverse Voltage	V_R	6	V
	Power Dissipation	P_D	100	mW
Detector	Output Voltage	V_O	35	V
	Supply Voltage	V_{CC}	35	V
	Power Dissipation	P_C	400	mW
Isolation Voltage		V_{iso}	5000	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	

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
	Terminal Capacitance	C_t	V=0,f=1MHz	-	60	-	pF
Output	Peak High-level Output Current	I_{OPH}	V_O=V_{CC}-1.5V	-	-	-0.3	A
			V_O=V_{CC}-3V	-	-	-0.8	A
	Peak Low-level Output Current	I_{OPL}	V_O=V_{EE}+1.5V	0.3	-	-	A
			V_O=V_{EE}+3V	0.8	-	-	A
	High Level Supply Current	I_{CCH}	I_F=10mA V_{CC}=30V, V_O=Open,	-	1.2	2	mA
	Low Level Supply Current	I_{CCL}	I_F=0mA , V_{CC}=30V, V_O=Open,	-	1.1	2	mA
	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	-	1.2	5	mA
	Threshold Input Voltage	V_{FHL}	V_{CC}=15V, V_O 1V	0.8	-	-	V
	Supply Voltage	V_{CC}	-	10	-	30	V
	UVLO Threshold	VUVLO+	V_O 2.5V, I_F=5mA	7.5	8.7	9.5	V
		VUVLO-	V_O 2.5V, I_F=5mA	7.5	8.4	9.5	V

SWITCHING SPECIFICATION

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

All Typical values at T_a=25 ł

Note1

Characteristics Curves

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

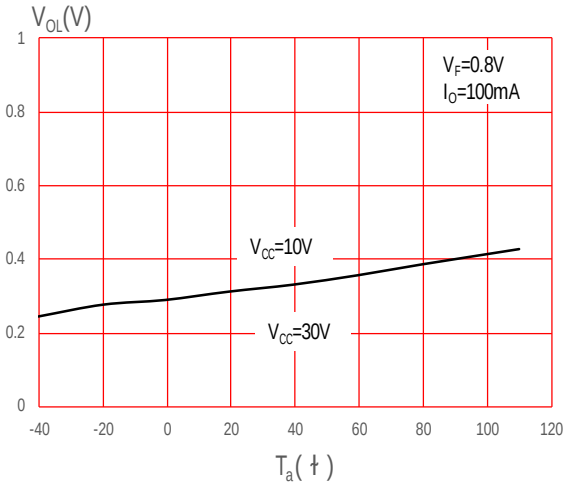


FIG.8: High-level Output Voltage vs. Ambient Temperature

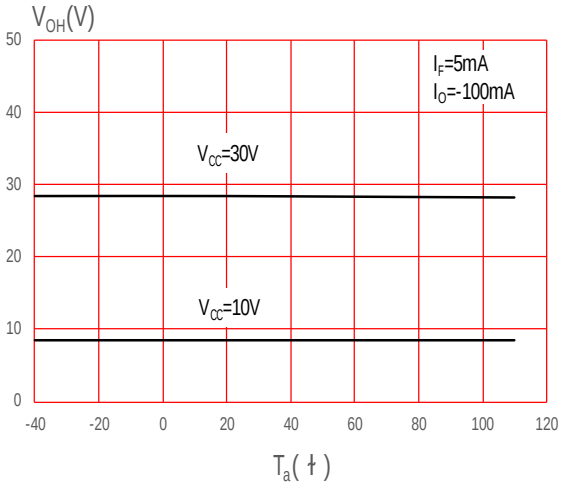
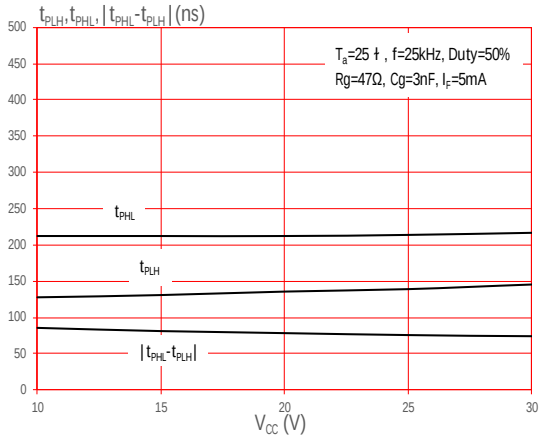


FIG.9: Low-level Output Voltage vs. Peak Low-level Output Current

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

FIG.13: Propagation Delay Time,Pulse Width Distortion vs. Supply Voltage

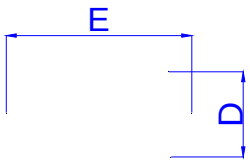


Test Circuits

FIG.14: Switching Time Test Circuit and Waveform

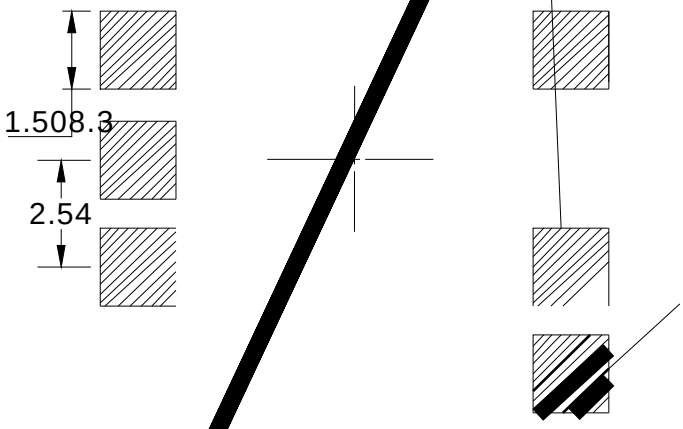
Package Dimension (Unit: mm)

Standard DIP Type:



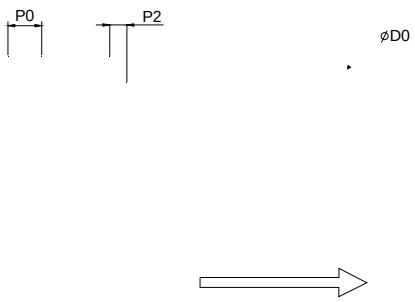
Dimensions						
Ref.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A						

RECOMMENDED SOLDER MASK (Dimensions in mm unless otherwise stated)



CARRIER TAPE SPECIFICATIONS (Dimensions in mm unless otherwise stated)

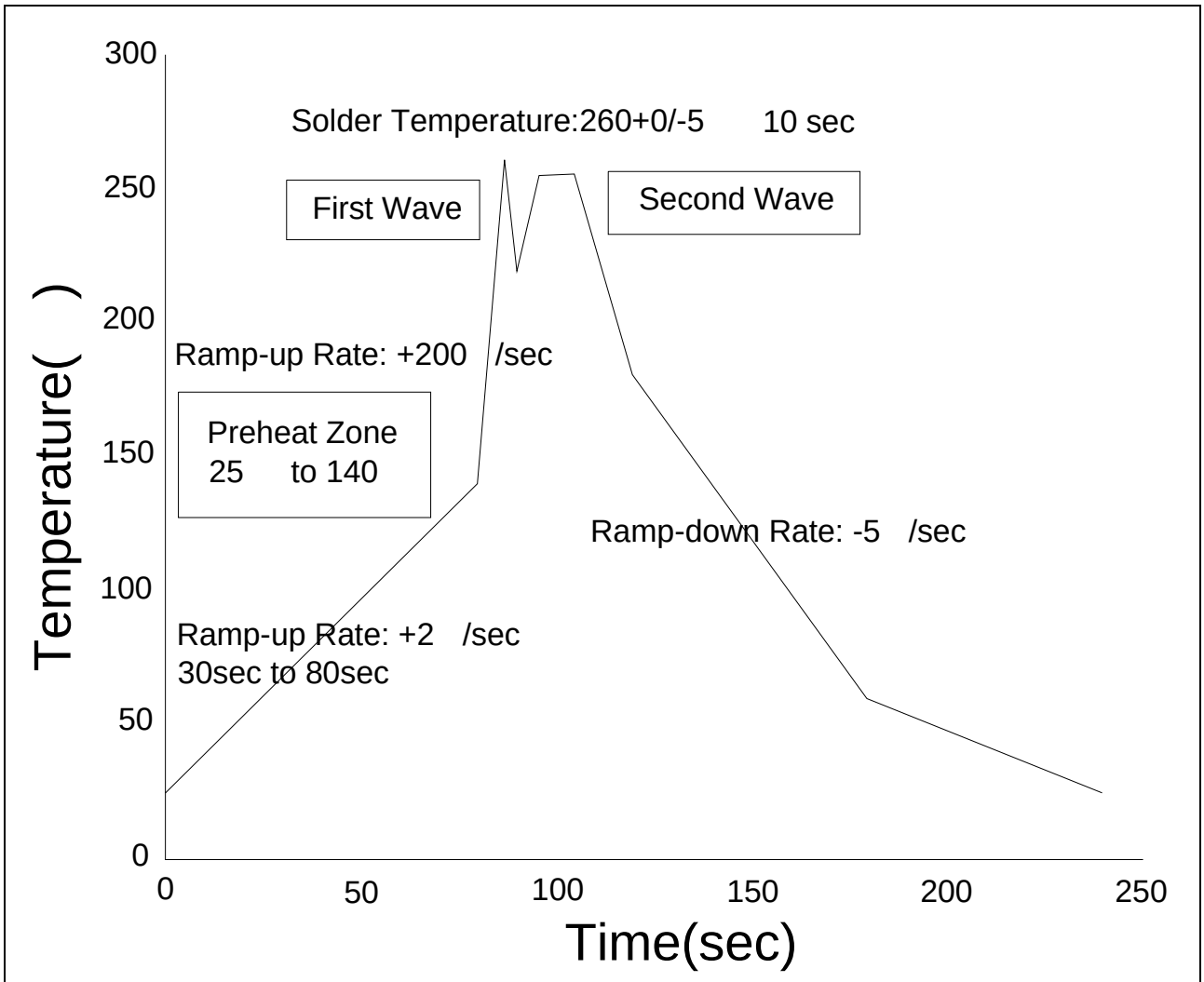
Option S/L



Ref.	Dimensions						
	Millimeters			Inches			
	Min.	Typ.	Max.	Min.	Typ.	Max.	
D0		1.50			0.059	4.10	0.1
P0	3.90	4.00		0.154	0.157	12.10	0.4
P1	11.90	12.00		0.469	0.472	2.10	0.0
P2	1.90	2.00		0.075	0.079		0.065 7.6
E		1.75		7.40	0.069		0.291 0.4
F		7.50		0.35	0.295		0.014
T		0.40			0.016		0.6
W	15.90	16.00		0.626	0.630		

REFLOW INFORMATION

WAVE SOLDERING



HAND SOLDERING BY SOLDERING IRON	
Soldering Temperature	360 ± 5
Soldering Time	3s 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 life of one year when stored under standard conditions.
6. Recommend storage Temp.: 0~40°C;

   Recommend storage humidity: <60%;

   MSL level: MSL 1