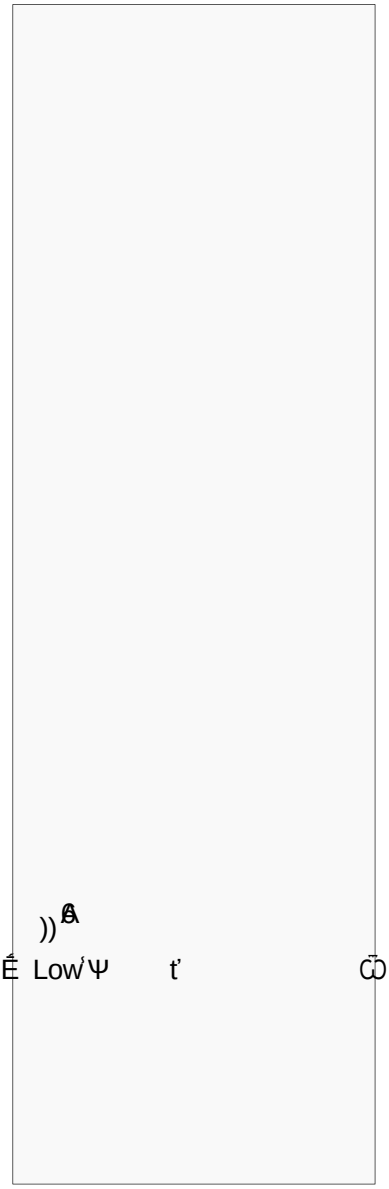
JOCDA3BB-D8P/S Series

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 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.



MAIN FEATURES

3A maximum peak output current
High isolation 5000 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

Truth Table

LED	V_{CC}-V_{EE} (Positive Going)	V_{CC}-V_{EE} (Negative Going)	Output
OFF	0-30V	0-30V	Low
ON	0-6.9V	0-5.9V	Low
ON	6.9V-8.7V	5.9V-7.5V	TRANSITION
ON	8.7V-30V	7.5V-30V	HIGHT

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}-4V, Pulse width≤50μs	-1	-	-	A
			V_O=V_{CC}-15V, Pulse width≤10μs	-3	-	-	A
	Peak Low-level Output Current	I_{OPL}	V_O=V_{EE}+2.5V, Pulse width≤50μs	1	-	-	A
			V_O=V_{EE}+15V, Pulse width≤10μs	3	-	-	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_O=-100mA	V_{CC}-0.3	V_{CC}-0.2	-	V
	Low Level Output Voltage	V_{OL}	I_O=100mA	-	-	0.2	V
	Threshold Input Current	I_{FLH}	V_O 5V	-	1.2	5	mA
	Threshold Input Voltage	V_{FHL}	V_O 5V	0.8	-	-	V
	Supply Voltage	V_{CC}	-	10	-	30	V
	UVLO Threshold	VUVLO+	V_O 2.5V, I_F=5.5mA	7.5	8.7	9.5	V

Recommended Operating Conditions

Characteristics	Symbol	Min.	Typ.	Max.	Unit
Input On-state Current	$I_{F(ON)}$	7	-	10	mA
Input Off-state Voltage	$V_{F(OFF)}$	0	-	0.8	V
Supply Voltage	V_{CC}	10	-	30	V
Operating Frequency	f	-	-	50	kHz

Note1: The recommended operating conditions are given as a design guide necessary to obtain the intended performance of the device. Each parameter is an independent value.

Characteristics Curves

FIG.1: Forward Current vs. Forward Voltage

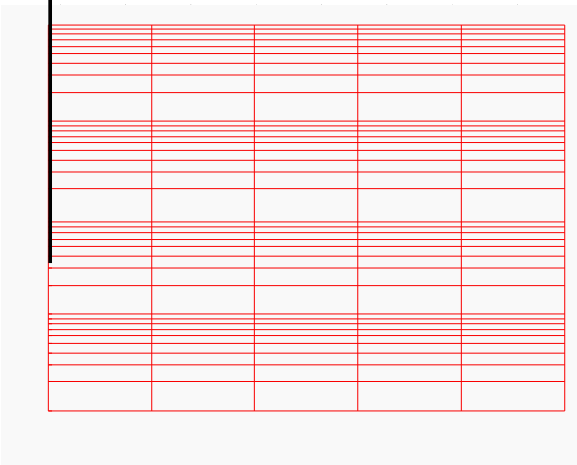


FIG.2: Max. Allowable LED Forward Current vs. Ambient Temperature

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

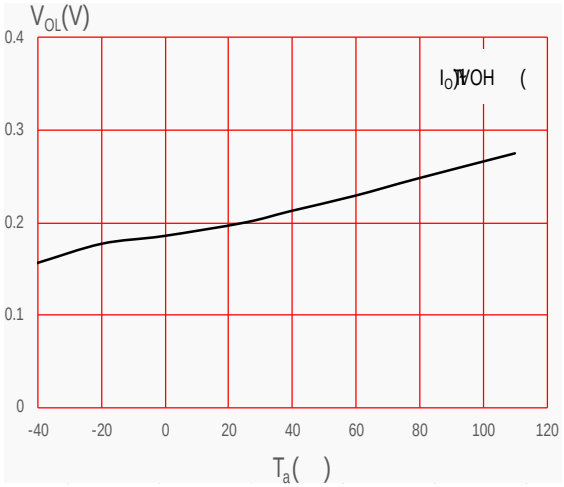
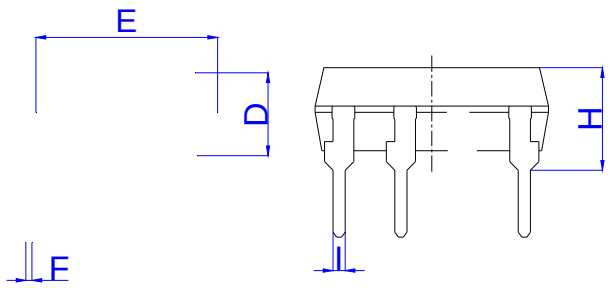


FIG.8: High-level Output Voltage vs. Ambient Temperature

JOCDA3BB

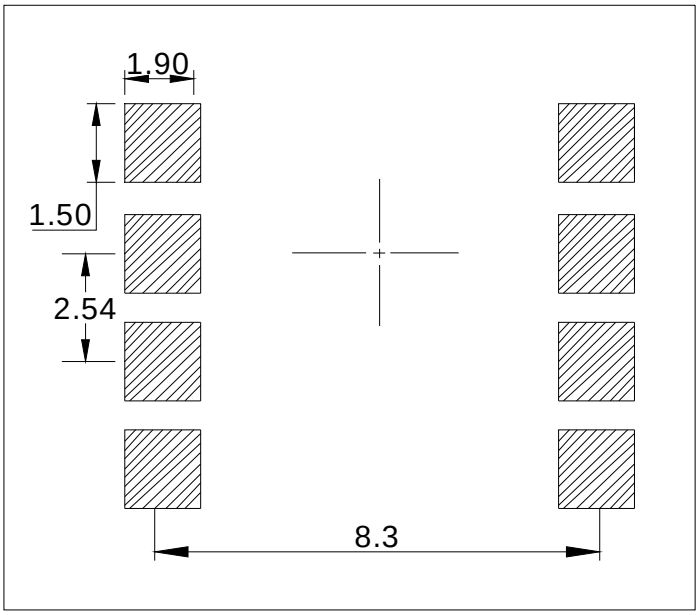
Package Dimension (Unit: mm)

Standard DIP Type:



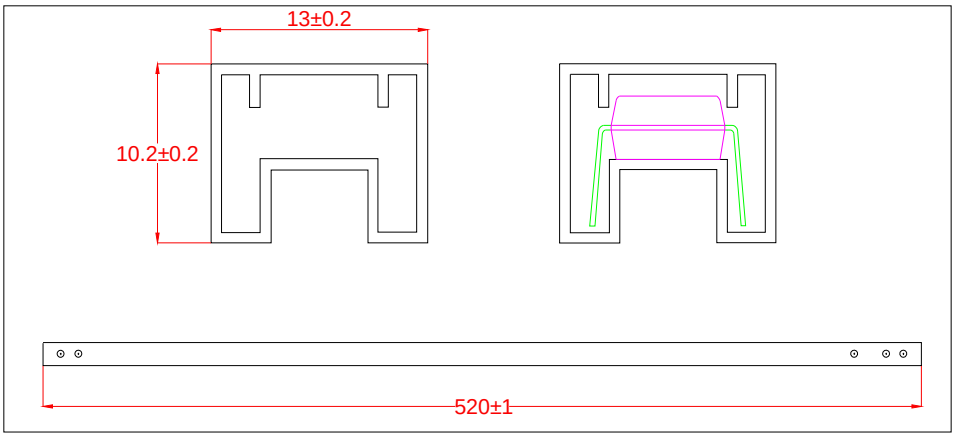
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	6.20		6.60	0.244		0.260
B	9.40		9.80	0.370		0.386
C	7.15		8.95	0.281		0.352
D	3.20		3.60	0.126		0.142
E	7.32		7.92	0.288		0.312
F	0.15		0.35	0.006		0.014
G	0.90		1.50	0.035		0.059
H	3.90		4.50	0.154		0.177
I	0.40		0.60	0.016		0.024
J						

RECOMMENDED SOLDER MASK (Dimensions in mm unless otherwise stated)



TUBE SPECIFICATIONS (Dimensions in mm unless otherwise stated)

Standard DIP



CARRIER TAPE SPECIFICATIONS (Dimensions in mm unless otherwise stated)

Option S

Ref.	Dimensions	
	Millimeters	Inches

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 e