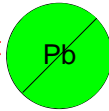


This component is RoHS compliant



# OPI-110 Series Optically Coupled Isolators ATEX and IECEx CERTIFIED

The OPI-110, A/B/C and D are a family of optically coupled isolators, each consisting of an infrared light emitting diode, coupled to an NPN silicon phototransistor sealed in an injection moulded plastic housing. This series is designed for applications requiring high voltage isolation between input and output.

All electrical parameters are 100% tested by manufacturing. Specifications are guaranteed to a 0.65% AQL.

- 10 KV electrical rating
- High current transfer ratio- 100% min @ 1mA If.



**CERTIFICATE BAS01ATEX1278U/2**

Confirmed conform to:-

EN60079-0:2006    EN61241-0:2006  
EN60079-11:2007    EN61241-11:2006  
EN60079-26:2004

Conditions of use apply:- See 'Schedule of limitations' on certificate



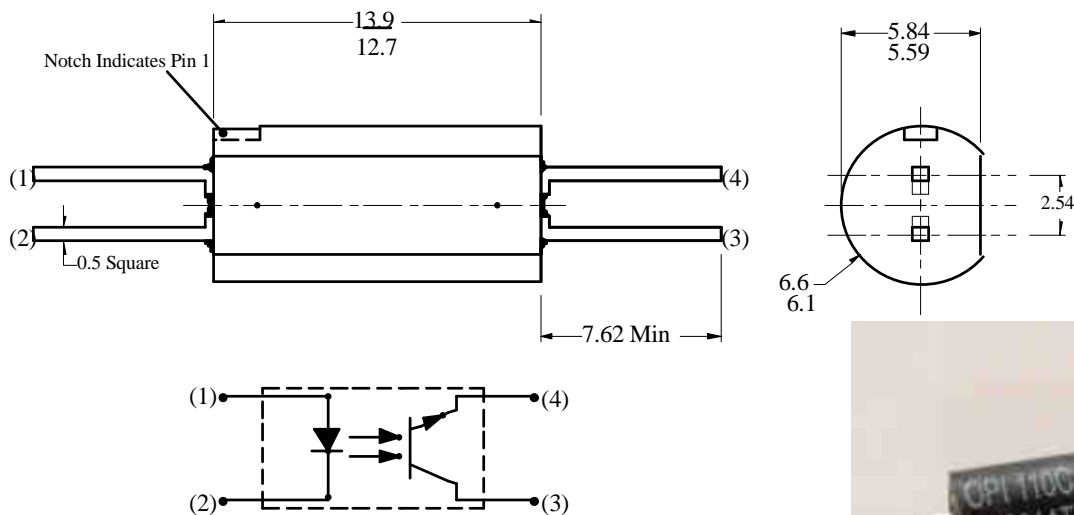
**CERTIFICATE IECEx BAS 06.0021U/1**

Designed and manufactured to:-

IEC 60079-0: 2000 Edition 3.1  
IEC 60079-11 :1999 Edition 4  
IEC 60097-26 :2004 Edition 1

Conditions of use apply:- See 'Schedule of limitations' on certificate.

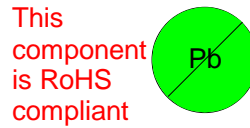
## MECHANICAL DATA



**BEDFORD OPTO TECHNOLOGY LTD**  
1, BIGGAR BUSINESS PARK, BIGGAR, LANARKSHIRE, ML12 6FX

Tel: +44 (0) 1899 221221 Fax: +44 (0) 1899 221009

Website: [bot.co.uk](http://bot.co.uk) E-mail: [bill@bot.co.uk](mailto:bill@bot.co.uk)



**ABSOLUTE MAXIMUM RATINGS** (25°C unless otherwise noted)

<b>INPUT DIODE</b>	
<b>FORWARD DC CURRENT</b>	50mA (3)
<b>REVERSE DC VOLTAGE</b>	2V
<b>POWER DISSIPATION</b>	100mW (4)
<b>OUTPUT PHOTOTRANSISTOR</b>	
<b>COLLECTOR-EMITTER VOLTAGE</b>	30 V
<b>EMITTER-COLLECTOR VOLTAGE</b>	5 V
<b>POWER DISSIPATION</b>	100 mW (5)
<b>OPERATING TEMP</b>	-40°C TO +85°C
<b>STORAGE TEMP</b>	-40°C TO +85°C
<b>INPUT-TO-OUTPUT ISOLATION VOLTAGE</b>	±10KV DC (1)
<b>LEAD SOLDERING TEMP (2) (1.6mm) from case for 5sec with soldering iron)</b>	240°C

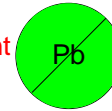
NOTES

- 1 Measured with input diode leads shorted together and output leads shorted together.
- 2 RMA Flux is recommended. Duration can be extened to 10 sec. max. when flow soldering.
- 3 Derate linearly 0.73 mA/ C above 25 C
- 4 Derate linearly 1.67 mA/ C above 25 C
- 5 Derate linearly 1.67 mA/ C above 25 C

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**OPTO ELECTRONIC DATA** (T<sub>A</sub> = 25°C)

This component is RoHS compliant



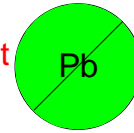
PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
<b>INPUT DIODE</b>						
Forward Voltage	V <sub>F</sub>			1.5	V	I <sub>f</sub> = 20mA
Reverse Current	I <sub>R</sub>			100	uA	V <sub>r</sub> = 2V
<b>OUTPUT PHOTOTRANSISTOR</b>						
Collector-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	30			V	I <sub>c</sub> = 1mA I <sub>f</sub> = 0
Emitter-Collector Breakdown Voltage	V <sub>(BR)ECO</sub>	5			V	I <sub>e</sub> = 100uA
Collector-Emitter Dark Current	I <sub>CEO</sub>			100	nA	V <sub>ce</sub> = 10V
<b>COUPLED CHARACTERISTICS</b>						
DC Current transfer ratio	I <sub>c</sub> /I <sub>f</sub>					
<b>OPI 110A</b>		25			%	I <sub>f</sub> =10mA, V <sub>ce</sub> =5V
<b>OPI 110B</b>		50			%	I <sub>f</sub> =10mA, V <sub>ce</sub> =5V
<b>OPI 110C</b>		100			%	I <sub>f</sub> =10mA, V <sub>ce</sub> =5V
<b>OPI 110D</b>		100			%	I <sub>f</sub> =1mA, V <sub>ce</sub> =5V
Isolation Voltage	V <sub>ISO</sub>	10			KV	See Note (1)
Collector-emitter saturation voltage	V <sub>CE(SAT)</sub>			0.4	V	I <sub>f</sub> =10mA, I <sub>c</sub> =1.6mA
Input-output capacitance	C <sub>io</sub>		0.06		pF	
Turn-on time	t <sub>on</sub>		5		uS	I <sub>c</sub> =10mA, V <sub>cc</sub> =10V, R <sub>L</sub> =100ohm
Turn-off time	t <sub>off</sub>		5		uS	I <sub>c</sub> =10mA, V <sub>cc</sub> =10V, R <sub>L</sub> =100ohm

NOTE:  
 Measured with input diode leads shorted together and output leads shorted together.  
 (Sample testing only).

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**Website: bot.co.uk E-mail: bill@bot.co.uk**

**CONFORMITY STATEMENT  
OPI110 SERIES**

This  
component  
is RoHS  
compliant



**Manufacturer:-** BEDFORD OPTO TECHNOLOGY LTD

**Address:-** 1 Biggar Business Park, Market Road, Biggar,  
Lanarkshire, ML12 6FX, Scotland

**Directive 94/9/EC**

EC-Type Examination Certificate:-

BAS01ATEX1278U – Latest supplement BAS01ATEX1278U/2 issued 30.10.07

Provisions of the Directive fulfilled by the component:-

Group II Category 1GD

EexialIC

Notified Body for EC-Type Examination & Production:- BaseefaLtd. – No. 1180

Baseefa Ltd.

Rockhead Business Park,

Staden Lane,

Buxton,

Derbyshire SK17 9RZ,

England

Tel:- +44 (0)1298 766600

Fax:- +44 (0)1298 766601

e-mail:- info@baseefa.com

Harmonised Standards used:-

EN60079-0:2006

EN60079-11:2007

EN61241-11:2006

Other Standards used:-

EN60079-26:2004 – (confirmed by Notified Body unit complies in all respects)

EN61241-0:2006 – (State of the Art – intended for harmonisation)

On Behalf of Bedford Opto Technology Ltd., I declare that, the date the component accompanied by this statement is placed on the market, the component conforms with all technical and regulatory requirements of the ATEX Directive 94/9/EC.

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Mr R.W.Stott  
Managing Director