

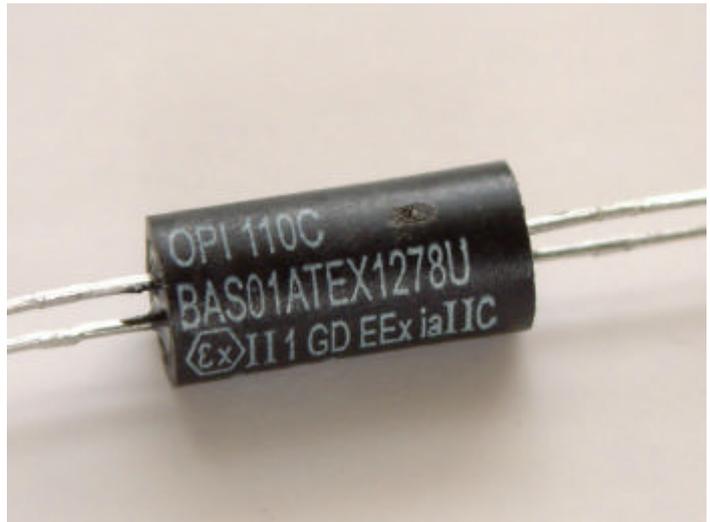
# OPI-110 Series Optically Coupled Isolators BASEEFA and ATEX CERTIFIED

The OPI-110, A/B/C and D are a family of optically coupled isolators, each consisting of a 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.

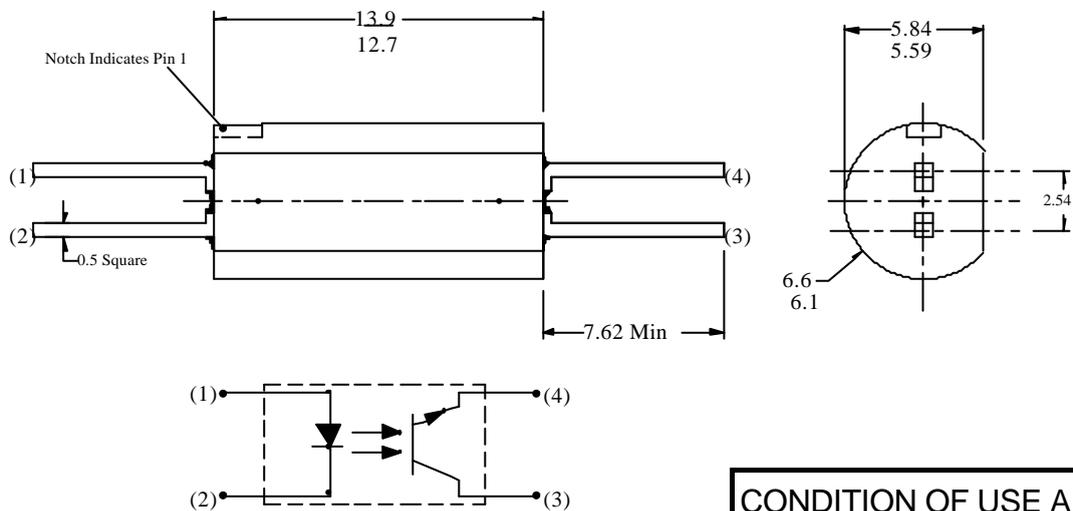
All electrical parameters are 100% tested by manufacturing. Specifications are guaranteed to a 0.65% AQL.

- 10 KV electrical rating
- High current transfer ratio- 100% min @ 1mA If.
- Designed and manufactured to EN50020 1995 and EN50014 1998

**BASEEFA Certified**  
 BAS No. Ex 95C2096U EEx ia IIC  
**ATEX Certified**  
 BAS 01ATEX1278U



## MECHANICAL DATA



CONDITION OF USE APPLY  
 EN50020 1994 CLAUSES  
 6..4.9 AND 8.8

**BEDFORD OPTO TECHNOLOGY LTD  
 LINDSAYLANDS, BIGGAR, ML12 6NR**

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

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

<b>INPUT DIODE</b> <b>FORWARD DC CURRENT</b> <b>REVERSE DC VOLTAGE</b>	50mA (3) 2V
<b>OUTPUT PHOTOTRANSISTOR</b> <b>COLLECTOR-EMITTER VOLTAGE</b> <b>EMITTER-COLLECTOR VOLTAGE</b>	30 V 5 V
<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</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 extended 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** ( $T_A = 25^\circ\text{C}$ )

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDIS- TIONS
<b>INPUT DIODE</b>						
Forward Voltage	$V_F$			1.5	V	$I_f = 20\text{mA}$
Reverse Current	$I_R$			100	$\mu\text{A}$	$V_r = 2\text{V}$
<b>OUTPUT PHOTOTRANSISTOR</b>						
Collector-Emitter Breakdown Volt-	$V_{(BR)CEO}$	30			V	$I_c = 1\text{mA}$ $I_f = 0$
Emitter-Collector Breakdown Volt-	$V_{(BR)ECO}$	5			V	$I_e = 100\mu\text{A}$
Collector-Emitter Dark Current	$I_{CEO}$			100	nA	$V_{ce} = 10\text{V}$
<b>COUPLED CHARACTERISTICS</b>						
DC Current transfer ratio	$I_C/I_F$					
<b>OPI 110A</b>		25			%	$I_f=10\text{mA}$ , $V_{ce}=5\text{V}$
<b>OPI 110B</b>		50			%	$I_f=10\text{mA}$ , $V_{ce}=5\text{V}$
<b>OPI 110C</b>		100			%	$I_f=10\text{mA}$ , $V_{ce}=5\text{V}$
<b>OPI 110D</b>		100			%	$I_f=1\text{mA}$ , $V_{ce}=5\text{V}$
Isolation Voltage	$V_{ISO}$	10			KV	See Note (1)
Collector-emitter saturation voltage	$V_{CE(SAT)}$			0.4	V	$I_f=10\text{mA}$ ,
Input-output capacitance	$C_{io}$		0.06		pF	
Turn-on time	$t_{on}$		5		$\mu\text{S}$	$I_c=10\text{mA}$ , $V_{cc}=10\text{V}$ ,
Turn-off time	$t_{off}$		5		$\mu\text{S}$	$I_c=10\text{mA}$ , $V_{cc}=10\text{V}$ ,

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

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ESSENTIAL HEALTH AND SAFETY INFORMATION IN ACCORDANCE WITH ATEX DIRECTIVE 94/9/EC

INFORMATION CONTAINED IN THIS DATASHEET IS DEEMED TO CONFORM TO THE ABOVE DIRECTIVE AND IS SUPPLIED IN RELATION TO THE FOLLOWING SHIPMENT: -

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QUANTITY\_\_\_\_\_

BATCH NUMBER\_\_\_\_\_

DATE CODE\_\_\_\_\_

DATE OF SHIPMENT\_\_\_\_\_