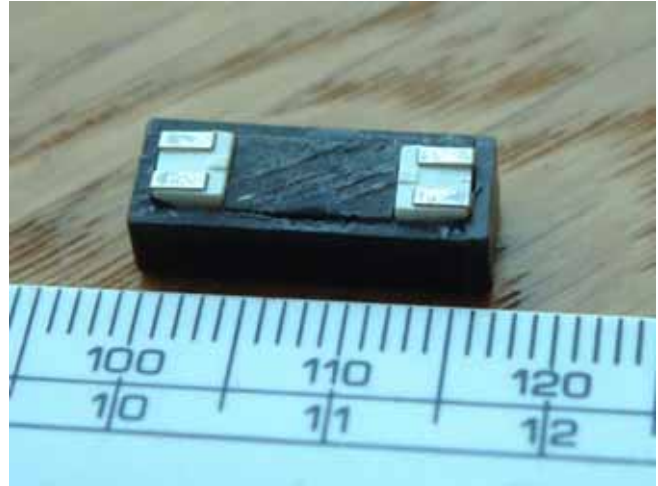


# OPI 5000 Series Optically Coupled Isolators Surface Mount Low Profile

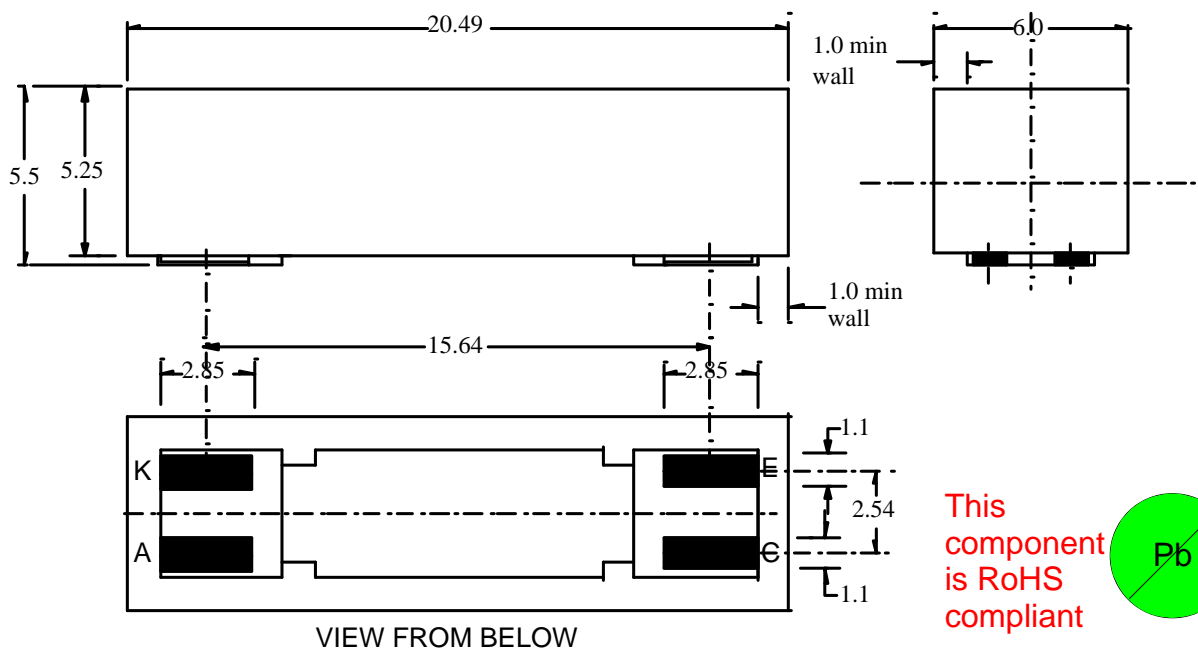
The OPI 5000 series of Optically Coupled Isolators each consisting of a Infrared emitter coupled to a silicon photo transistor. The series is designed for applications requiring ATEX certification and high voltage isolation between input & output.

- Surface Mount configuration in Tape & Reel
- 10KV isolation
- High Current Transfer ratio– 40% min @ 1mA If
- Low Profile
- To be designed and manufactured to EN50020 1995 and EN50014 1998
- True Surface Mount construction

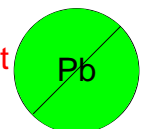


THIS IS A DEVELOPMENT DATA SHEET MEANT FOR GUIDANCE ONLY. CERTIFICATION ON THE FINAL PRODUCT WILL BE APPLIED FOR.

## MECHANICAL DATA



This component is RoHS compliant



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

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

OPI 5000

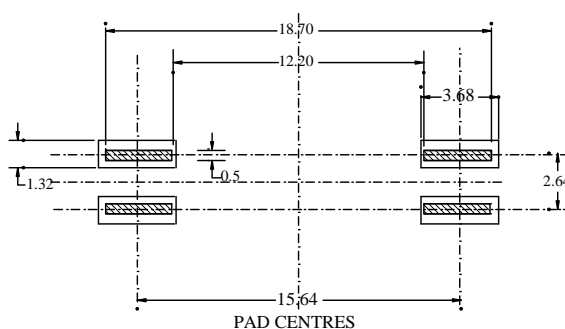
<b>INPUT DIODE</b> FORWARD DC CURRENT REVERSE DC VOLTAGE POWER DISSIPATION	100mA 5 Volts 165mW (ii)
<b>OUTPUT TRANSISTOR</b> COLLECTOR-EMITTER VOLTAGE COLLECTOR CURRENT POWER DISSIPATION	35 Volts 15 mA 165mW (iii)
<b>OPERATING TEMP</b>	-25°C TO +100°C
<b>STORAGE TEMP</b>	-25°C TO +100°C
<b>INPUT-TO-OUTPUT ISOLATION VOLTAGE</b>	± 10KV DC (i)

- i) Measured with the input leads and output leads shorted together for one min.
- ii) Thermal resistance 375 K/W
- iii) Thermal resistance 450 K/W

Whilst the devices are capable of operating continually at the noted elevated temperatures users should be aware of the possibility of a reduction in CTR over long periods at high temperatures & currents.

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## RECOMMENDED FOOTPRINT



### Packing

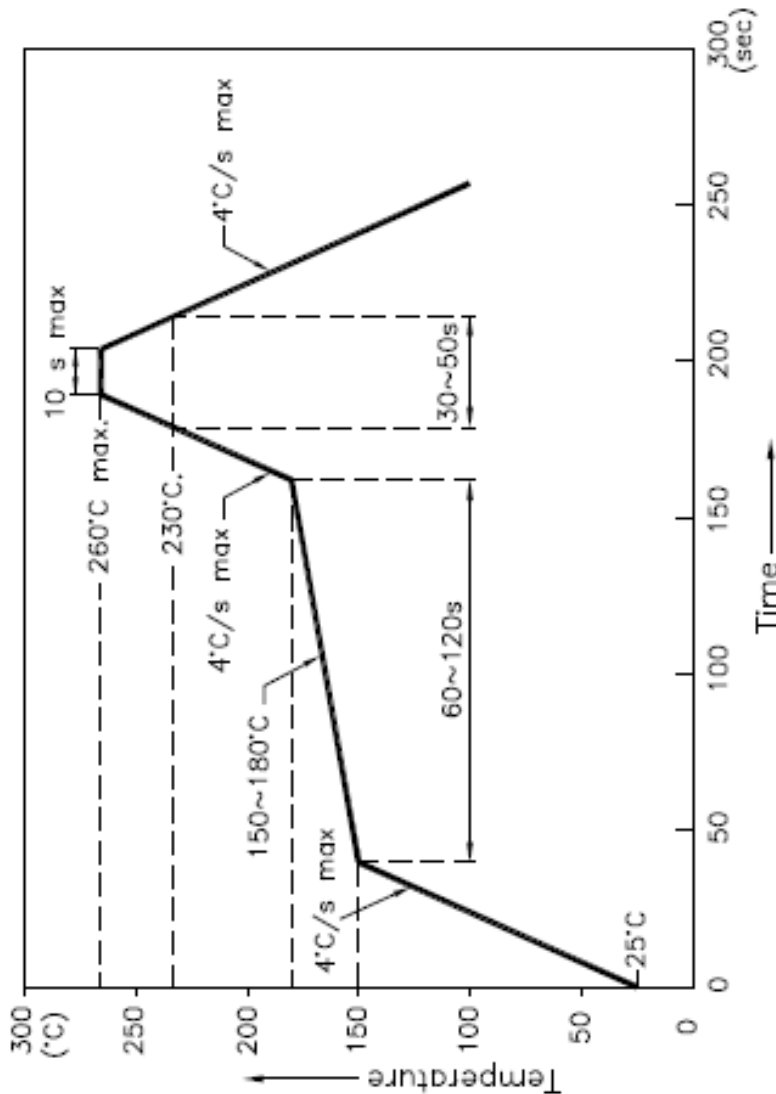
Waffle Trays - 100 per tray 290mm x 200mm.  
Tape & Reel - 400 Devices per 13" Diam Reel with 7" HuB 32mm Wide tape.

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Reflow Soldering Profile For Lead-free SMT Process.



- NOTES:
1. We recommend the reflow temperature 245°C(+/-5°C). The maximum soldering temperature should be limited to 260°C.
  2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
  3. Number of reflow process shall be 2 times or less.

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PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
<b>INPUT DIODE</b>						
Forward Voltage	V <sub>F</sub>	-	-	1.3	V	I <sub>f</sub> = 20mA
Reverse Voltage	V <sub>R</sub>	5.0	-	-	V	I <sub>r</sub> = 100uA
<b>OUTPUT TRANSISTOR</b>						
Collector-Emitter Breakdown Voltage	BV <sub>ceo</sub>	35	-	-	V	I <sub>c</sub> = 10 uA
Collector-Emitter Leakage Current	I <sub>ceo</sub>		-	10	nA	V <sub>ce</sub> = 30 V
Emitter-Collector Breakdown	BV <sub>eco</sub>	5.0	-	-	V	I <sub>c</sub> = 100uA
<b>COUPLED PAIR</b>						
DC Current Transfer Ratio	I <sub>c</sub> /I <sub>F</sub>					
OPI 5000L A	-	25	-	-	%	I <sub>f</sub> = 10 mA V <sub>ce</sub> = 5 V
OPI 5000L B	-	50	-	-	%	I <sub>f</sub> = 10 mA V <sub>ce</sub> = 5 V
OPI 5000L C	-	100	-	-	%	I <sub>f</sub> = 10 mA V <sub>ce</sub> = 5 V
OPI 5000L E	-	40	-	-	%	I <sub>f</sub> = 1mA V <sub>ce</sub> = 5 V
Isolation Voltage	V <sub>ISO</sub>	10	-	-	KV	-
Collector-emitter saturation voltage	V <sub>CE(SAT)</sub>	-	-	0.4	V	I <sub>f</sub> = 10 mA, I <sub>c</sub> =1.6mA
Turn-on time	t <sub>on</sub>	-	8	-	uS	I <sub>c</sub> =2mA
Turn-off time	t <sub>off</sub>	-	8	-	uS	V <sub>cc</sub> = 5V R <sub>L</sub> = 100ohm

TARGET  
VALUES

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