66353 HIGH VOLTAGE OPTOCOUPLER

OPTOELECTRONIC PRODUCTS DIVISION

09/18/2012

Features:

- 12 kV Isolation Voltage
- 850 nm Emitters
- 8 kV Output Reverse Breakdown Voltage
- Radiation tolerant by design

Applications

- High Voltage Power Supplies
- High Voltage Instruments
- Voltage Level Shifting
- Space Instrumentation

DESCRIPTION

The ***66353*** is a single channel High Voltage Optocoupler using 850 nm Infrared Light Emitting Diodes optically coupled to a series of high voltage Silicon Photodiodes. The High Voltage Optocoupler is mounted into a non hermetic 4 Pin custom package designed to withstand high isolation voltage and is available as a commercial device or screened according to methods of MIL-PRF-38534 (where applicable).

ABSOLUTE MAXIMUM RATINGS (t_A = 25° C unless otherwise noted)

Operating Free-Air Temperature Range ..... -40° C to +100° C
Storage Temperature ..... -40° C to +100° C
Lead Soldering Temperature (1.6 mm from case for 5 seconds) ..... 240° C
Input to output Isolation Voltage (Note 1) ..... 12 kVDC

Input Diode:

Reverse Voltage (at 25° C case temperature) ..... 7 VDC
Peak Forward Current (1μs pulse width, 300 pps) ..... 1 A
Forward Current-Continuous at 25° C case temperature ..... 100 mA
Input Power Dissipation (Note 2) ..... 550 mW

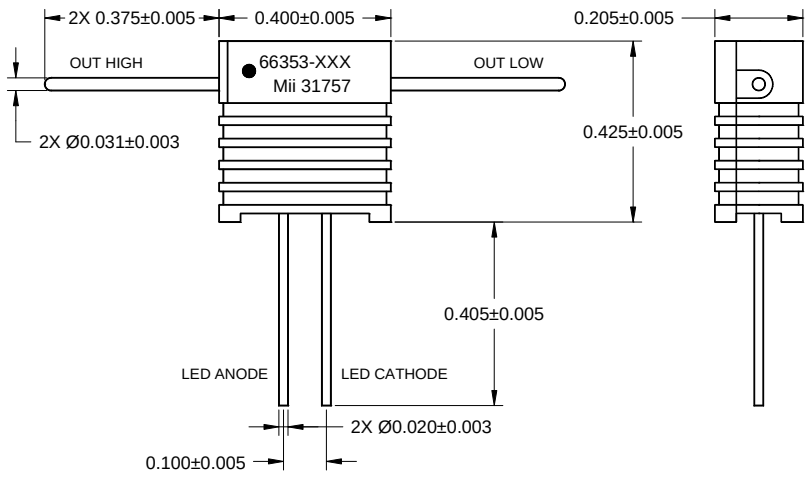
Output Photodetector:

Output Reverse Breakdown Voltage ..... 8 kVDC
Continuous Detector Current (V_{OUT} or P_{OUT} dependent) @ 2.5 kV ..... 600 μA
Power Dissipation at 25° C case temperature (Note 3) ..... 1.5 W

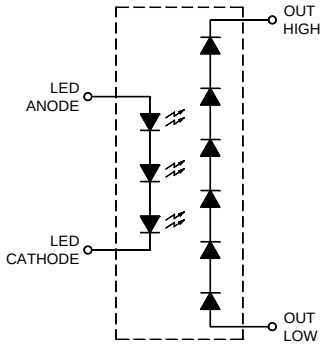
NOTES:

1. Measured with input leads shorted together and output leads shorted together.
2. Derate linearly at the rate of 15 mW/° C above 65° C case.
3. Derate linearly at the rate of 40 mW/° C above 65° C case.

Package Dimensions



Schematic Diagram



MICROPAC INDUSTRIES, INC. OPTOELECTRONIC PRODUCTS DIVISION • 725 E.Walnut St., Garland, TX 75040 • (972)272-3571 • Fax (972)487-6918
www.micropac.com E-MAIL: OPTOSALES @ MICROPAC.COM

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ELECTRICAL CHARACTERISTICS

T_A = 25°C unless otherwise specified.

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS	NOTE
Input Characteristic							
Input Forward Voltage	$V_{F(IN)}$	3.8		4.5	V	I_F = 20 mA	
		4.3		5.6		I_F = 100 mA	
Input Reverse Current	I_R			1	µA	V_R = 7 V	
Output Characteristic							
Output Forward Voltage	$V_{F(OUT)}$	3.8		5.0	V	I_F = 20 mA	
		4.3		6.0		I_F = 100 mA	
Reverse Breakdown Voltage	V_{BR}	8			kV	I_d = 1 µA	
Coupled Characteristic							
Input-Output Isolation Current	I_{IO}			10	µA	V_{IO} = 12 kV	
Dark Current	I_D			25	nA	I_F = 0 mA, V_{OUT} = 2.5 kV	
				50		I_F = 0 mA, V_{OUT} = 8 kV	
Current Transfer Ratio	CTR	1.3			%	I_F = 20 mA, V_{OUT} = 0 V	
		1.6				I_F = 100 mA, V_{OUT} = 0 V	
		2.0				I_F = 20 mA, V_{OUT} = 750 V	
		2.3				I_F = 20 mA, V_{OUT} = 2.5 kV	

RECOMMENDED OPERATING CONDITIONS:

PARAMETER	SYMBOL	MIN	MAX	UNITS
Forward Current	I_F		20	mA

SELECTION GUIDE

PART NUMBER	PART DESCRIPTION
66353-002	Commercial
66353-301	Screened to space level

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