

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 ($t_A = 25^\circ\text{C}$ 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

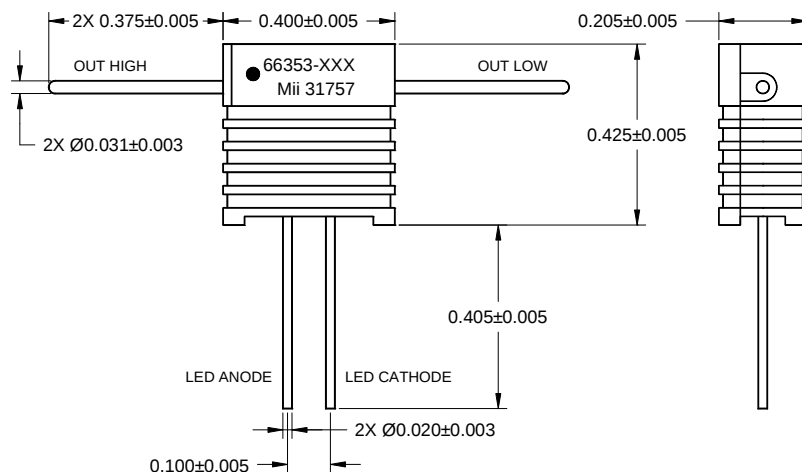
Output Photodetector:

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

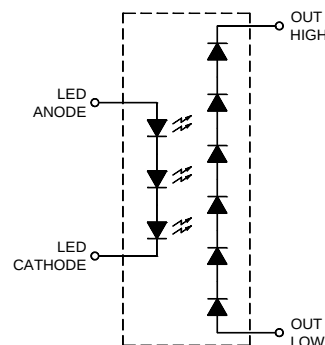
NOTES:

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



66353

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HIGH VOLTAGE OPTOCOUPLER**ELECTRICAL CHARACTERISTICS** $T_A = 25^\circ\text{C}$ 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	$I_F = 20\text{ mA}$	
		4.3		5.6		$I_F = 100\text{ mA}$	
Input Reverse Current	I_R			1	μA	$V_R = 7\text{ V}$	
Output Characteristic							
Output Forward Voltage	$V_{F(OUT)}$	3.8		5.0	V	$I_F = 20\text{ mA}$	
		4.3		6.0		$I_F = 100\text{ mA}$	
Reverse Breakdown Voltage	V_{BR}	8			kV	$I_d = 1\text{ }\mu\text{A}$	
Coupled Characteristic							
Input-Output Isolation Current	I_{IO}			10	μA	$V_{IO} = 12\text{ kV}$	
Dark Current	I_D			25	nA	$I_F = 0\text{ mA}, V_{OUT} = 2.5\text{ kV}$	
				50		$I_F = 0\text{ mA}, V_{OUT} = 8\text{ kV}$	
Current Transfer Ratio	CTR	1.3			%	$I_F = 20\text{ mA}, V_{OUT} = 0\text{ V}$	
		1.6				$I_F = 100\text{ mA}, V_{OUT} = 0\text{ V}$	
		2.0				$I_F = 20\text{ mA}, V_{OUT} = 750\text{ V}$	
		2.3				$I_F = 20\text{ mA}, V_{OUT} = 2.5\text{ kV}$	

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