

**66359**

**4 kV OPTOCOUPLER**



09/18/2012

**Features:**

- 5 kV Isolation Voltage
- 850 nm Emitters
- 4 kV Output Reverse Breakdown Voltage
- Radiation tolerant by design

**Applications**

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

**DESCRIPTION**

The **66359** is a single channel 4 kV 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).....	5 kVDC

**Input Diode:**

Reverse Voltage (at 25°C case temperature) .....	3 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

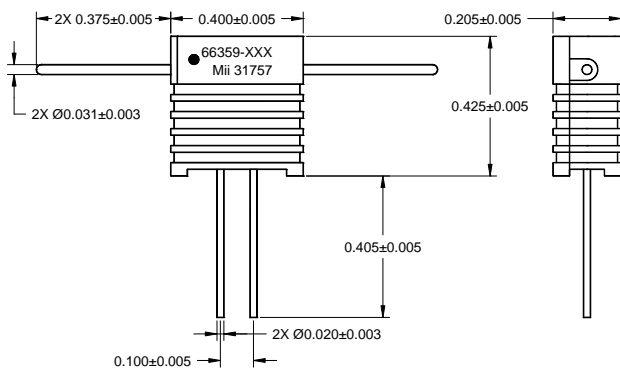
**Output Photodetector:**

Output Reverse Breakdown Voltage.....	4 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

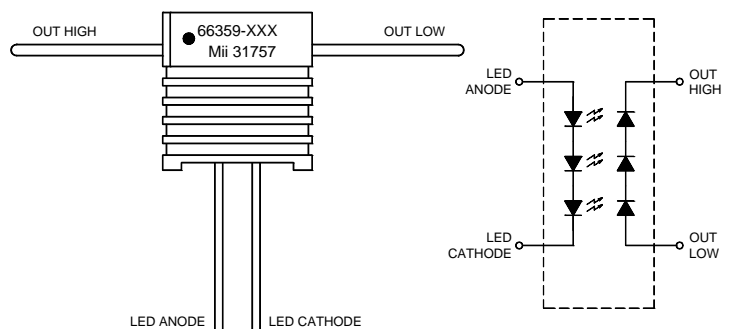
**NOTES:**

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**



09/18/2012

**ELECTRICAL CHARACTERISTICS**T<sub>A</sub> = 25°C unless otherwise specified.

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS	NOTE
<b>Input Characteristic</b>							
Input Forward Voltage	V <sub>F(IN)</sub>	3.8		4.5	V	I <sub>F</sub> = 20 mA	
		4.3		5.6		I <sub>F</sub> = 100 mA	
Input Reverse Current	I <sub>R</sub>			1	μA	V <sub>R</sub> = 3 V	
<b>Output Characteristic</b>							
Output Forward Voltage	V <sub>F(OUT)</sub>	2.0		3.0	V	I <sub>F</sub> = 20 mA	
		3.0		4.0		I <sub>F</sub> = 100 mA	
Reverse Breakdown Voltage	V <sub>BR</sub>	4			kV	I <sub>d</sub> = 1 μA	
<b>Coupled Characteristic</b>							
Input-Output Isolation Current	I <sub>IO</sub>			10	μA	V <sub>IO</sub> = 5 kV	
Dark Current	I <sub>D</sub>			10	nA	I <sub>F</sub> = 0 mA, V <sub>OUT</sub> = 2.5 kV	
				25		I <sub>F</sub> = 0 mA, V <sub>OUT</sub> = 4 kV	
Current Transfer Ratio	CTR	2.0			%	I <sub>F</sub> = 20 mA, V <sub>OUT</sub> = 0 V	
		2.2				I <sub>F</sub> = 100 mA, V <sub>OUT</sub> = 0 V	
		3.0				I <sub>F</sub> = 20 mA, V <sub>OUT</sub> = 750 V	
		3.5				I <sub>F</sub> = 20 mA, V <sub>OUT</sub> = 2.5 kV	

**RECOMMENDED OPERATING CONDITIONS:**

PARAMETER	SYMBOL	MIN	MAX	UNITS
Forward Current	I <sub>F</sub>		20	mA

**SELECTION GUIDE**

PART NUMBER	PART DESCRIPTION
66359-001	Commercial
66359-101	Screened