

**66156**

**SINGLE CHANNEL OPTOCOUPLER  
PHOTODIODE OUTPUT  
COAXIAL OR BULKHEAD MOUNT PACKAGES**

**Mii**  
OPTOELECTRONIC PRODUCTS  
DIVISION

**Features:**

- High Reliability
- Bulkhead or Press fit version
- Rugged package
- Stable over wide temperature
- +1.0kV electrical isolation

**Applications:**

- Analog isolation
- Secure telecom
- Line receiver
- Medical
- Monitor motor control voltage

**DESCRIPTION**

The **66156** contains a Gallium Aluminum Arsenide (GaAlAs) infrared LED optically coupled to a silicon photodiode. This 66156-20X is a hermetically sealed package which is threaded in order to provide convenient bulkhead mounting and is available in standard and screened versions or tested to customer specifications. The 66156-10X is a hermetically sealed coaxial package which can be soldered or press-fit mounted and is also available in the same versions.

**ABSOLUTE MAXIMUM RATINGS**

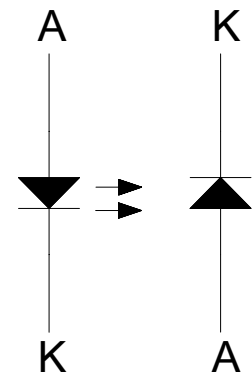
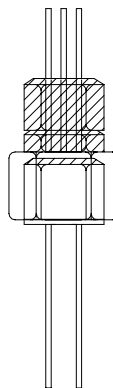
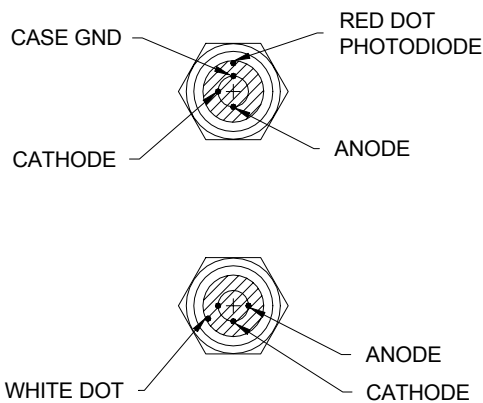
Input to Output Voltage .....	1.0kV
Reverse LED Input Voltage .....	3V
Peak Forward Input Current $\leq$ 1mS (LED, continuous) .....	100mA
Continuous Transistor Power Dissipation at (or below) 25°C Free-Air Temperature (see Note 2) .....	300mW
Average Forward Input Current .....	50mA
Reverse Current (LED) .....	100 $\mu$ A
Reverse Voltage (Detector, 1 min. max) .....	40V
Total Output Power Dissipation .....	100mW
Storage Temperature .....	-65°C to +150°C
Operating Free-Air Temperature Range .....	-40°C to +85°C
Lead Solder Temperature (10 seconds max.) .....	260°C

**Notes:**

1. Derate linearly to 125°C free-air temperature at the rate of 0.68 mA/°C above 65°C.
2. Derate linearly to 125°C free-air temperature at the rate of 3 mW/°C.

**Package Dimensions**

**Schematic Diagram**



**ELECTRICAL CHARACTERISTICS**

T<sub>A</sub> = 25°C Unless otherwise specified

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Input Diode Static Forward Voltage	V <sub>F</sub>			2.2	V	I <sub>F</sub> = 50mA
Reverse Breakdown Voltage	B <sub>VR</sub>	3			V	I <sub>R</sub> = 100μA
Input Diode Capacitance	C <sub>IN</sub>		25		pF	V = 0V, f = 1MHz

**OUTPUT TRANSISTOR**

T<sub>A</sub> = 25°C Unless otherwise specified

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Dark Current	I <sub>D</sub>				100μA	V <sub>R</sub> = 5V, R <sub>L</sub> = 1MΩ
Reverse Breakdown Voltage	B <sub>VR</sub>	30			V	I <sub>R</sub> = 100μA

**COUPLED CHARACTERISTICS**

T<sub>A</sub> = 25°C Unless otherwise specified

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Output Voltage	V <sub>O</sub>	1.5			V <sub>P-P</sub>	I <sub>F</sub> = 75Ma, R <sub>L</sub> = 3.3kΩ
Rise Time	t <sub>r</sub>			200	nS	I <sub>F</sub> = 75Ma, R <sub>L</sub> = 3.3kΩ
Fall Time	t <sub>f</sub>			200	nS	I <sub>F</sub> = 75Ma, R <sub>L</sub> = 3.3kΩ

**RECOMMENDED OPERATING CONDITIONS:**

PARAMETER	SYMBOL	MIN	MAX	UNITS
Input Current, Low Level	I <sub>FL</sub>	0	100	μA
Input Current, High Level	I <sub>FH</sub>	50	100	mA
Supply Voltage	V <sub>CE</sub>	5	10	V
Operating Temperature	T <sub>A</sub>	-40	+85	°C

**SELECTION GUIDE**

PART NUMBER	PART DESCRIPTION
66156-103	Single Channel, (0 to 70°C) operating range. Press-fit, coaxial package
66156-104	Single Channel, (-40 to 85°C) operating range. Press-fit, coaxial package
66156-203	Single Channel, (0 to 70°C) operating range. Bulkhead mount package
66156-204	Single Channel, (-40 to 85°C) operating range. Bulkhead mount package