

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

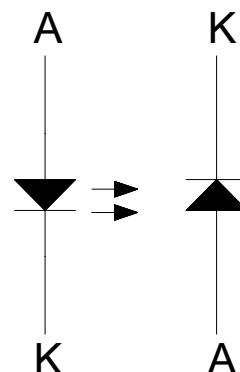
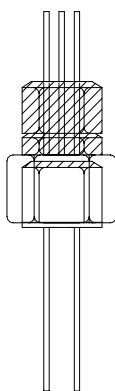
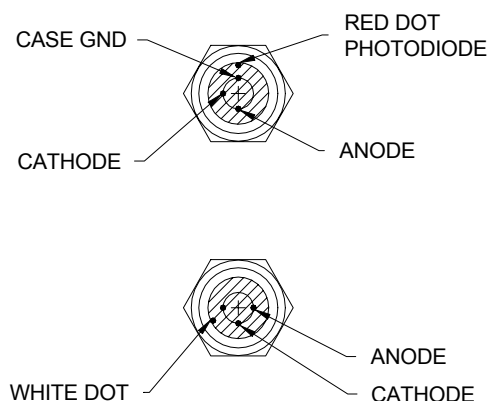
The **66156** contains a Gallium Aluminum Arsenide (GaAlAs) infrared LED optically coupled to a silicon photodiode. This 66156-20X is a hermetically sealed package which is threaded in order to provide convenient bulkhead mounting and is available in standard and screened versions or tested to customer 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 $\leq 1\text{ms}$ (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 μ 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 mW/°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 $T_A = 25^\circ\text{C}$ Unless otherwise specified

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Input Diode Static Forward Voltage	V_F			2.2	V	$I_F = 50\text{mA}$
Reverse Breakdown Voltage	B_{VR}	3			V	$I_R = 100\mu\text{A}$
Input Diode Capacitance	C_{IN}		25		pF	$V = 0\text{V}$, $f = 1\text{MHz}$

OUTPUT TRANSISTOR $T_A = 25^\circ\text{C}$ Unless otherwise specified

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Dark Current	I_D				$100\mu\text{A}$	$V_R = 5\text{V}$, $R_L = 1\text{M}\Omega$
Reverse Breakdown Voltage	B_{VR}	30			V	$I_R = 100\mu\text{A}$

COUPLED CHARACTERISTICS $T_A = 25^\circ\text{C}$ Unless otherwise specified

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Output Voltage	V_O	1.5			V_{P-P}	$I_F = 75\text{Ma}$, $R_L = 3.3\text{k}\Omega$
Rise Time	t_r			200	nS	$I_F = 75\text{Ma}$, $R_L = 3.3\text{k}\Omega$
Fall Time	t_f			200	nS	$I_F = 75\text{Ma}$, $R_L = 3.3\text{k}\Omega$

RECOMMENDED OPERATING CONDITIONS:

PARAMETER	SYMBOL	MIN	MAX	UNITS
Input Current, Low Level	I_{FL}	0	100	μA
Input Current, High Level	I_{FH}	50	100	mA
Supply Voltage	V_{CE}	5	10	V
Operating Temperature	T_A	-40	+85	$^\circ\text{C}$

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