

66212

**PROTON RADIATION TOLERANT 4 PIN LCC
OPTOCOUPLER WITH 850 nm LED**



**OPTOELECTRONIC PRODUCTS
DIVISION**

03/02/2011

Features:

- Hermetically Sealed
- Designed to be proton radiation tolerant
- High Current Transfer Ratio - 200% minimum
- 1000 Vdc electrical input to output isolation

Applications:

- Ground loop isolation
- Level shifting
- Line receiver
- Switching power supplies
- Motor control

DESCRIPTION

The **66212** optocoupler consists of an 850 nm GaAlAs LED optically coupled to a phototransistor detector all mounted in a hermetic 4 pin LCC package. This configuration has proven to be highly tolerant to proton radiation. The 850 nm LED has proven to be more tolerant of operating temperatures over 100°C than the more commonly used 660 nm LED.

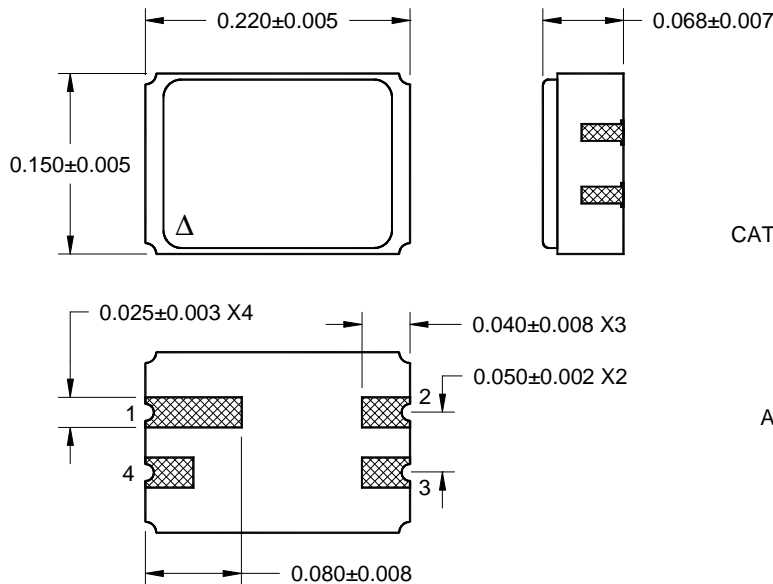
ABSOLUTE MAXIMUM RATINGS

Input Diode Forward DC Current.....	50 mA
Input Power Dissipation (see Note 1).....	360 mW
Reverse Input Voltage	2 V
Collector-Emitter Voltage	50 V
Continuous Collector Current	50 mA
Continuous Transistor Power Dissipation (see Note 2)	300 mW
Storage Temperature.....	-65°C to +150°C
Operating Free-Air Temperature Range	-55°C to +125°C
Lead Solder Temperature (1/16" (1.6mm) from case for 5 seconds)	260°C

Notes:

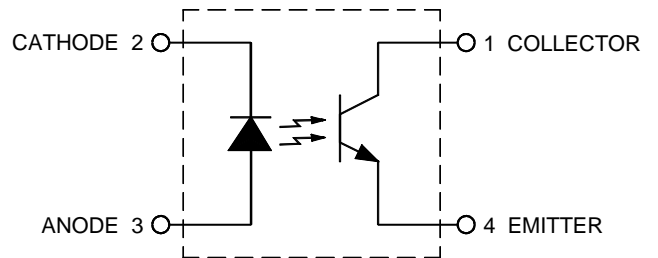
1. Derate linearly from 25°C to 125°C @ 3.6 mW/°C
2. Derate linearly from 25°C to 125°C @ 3.0 mW/°C

Package Dimensions



ALL DIMENSIONS ARE IN INCHES

Schematic Diagram



ELECTRICAL CHARACTERISTICS

T_A = 25°C unless otherwise specified.

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Input Diode Static Reverse Current	I _R			100	μA	V _R = 2 V
Input Diode Static Forward Voltage	V _F	0.80		1.5	V	I _F = 10 mA

OUTPUT TRANSISTOR CHARACTERISTICS

T_A = 25°C unless otherwise noted

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	40			V	I _C = 1mA, I _F = 0
Collector-Emitter Dark Current	I _{CEO}			100	nA	V _{CE} = 20 V, I _F = 0

COUPLED CHARACTERISTICS

T_A = 25°C unless otherwise noted

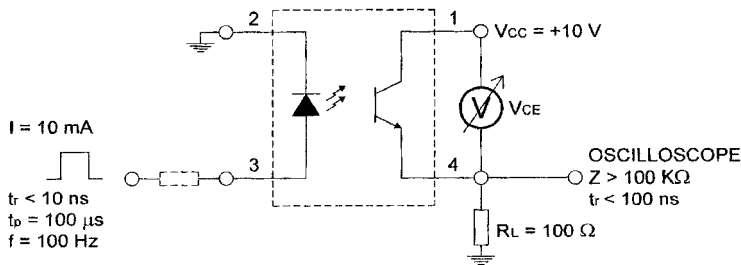
PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
On State Collector Current	I _{C(ON1)}	2.0			mA	V _{CE} = 1 V, I _F = 1.0 mA
On State Collector Current	I _{C(ON2)}	40			mA	V _{CE} = 5 V, I _F = 10.0 mA
Collector-Emitter Saturation Voltage	V _{CE(SAT)}			0.22	V	I _C = 10.0 mA, I _F = 20.0 mA
Emitter Collector Breakdown Voltage	V _{BR ECO}	5			V	I _E = 100 μA, I _F = 0 mA
Input-Output Isolation Voltage DC (Note 3)	V _{IN-OUT}	1000			V	T=5 sec
Rise Time (see Switching Time Test Circuit)	t _r			20	μs	V _{CC} = 10 V, I _F = 10 mA, R _L = 100 Ω
Fall Time	t _f			20	μs	V _{CC} = 10 V, I _F = 10 mA, R _L = 100 Ω

Note 3: Measurement with inputs shorted together and outputs shorted together

RECOMMENDED OPERATING CONDITIONS:

PARAMETER	SYMBOL	MIN	MAX	UNITS
Input Current, Low Level	I _{FL}	0	10	μA
Input Current, High Level	I _{FH}	1	20	mA
Operating Temperature	T _A	-55	125	°C

Switching Time Circuit



ORDERING INFORMATION:

PART NUMBER	DESCRIPTION
66212-001	Commercial
66212-101	Commercial with Group A
66212-103	Screened to TX Level
66212-105	Screened to TXV Level
66212-300	Screened to Space Level