

66342**PROTON RADIATION TOLERANT
FOUR CHANNEL, HERMETIC 16 PIN DUAL-IN-LINE,
OPTICALLY COUPLED ISOLATOR**

06/09/2011

Features:

- Proton Radiation Tolerant
- High Reliability
- Stability over wide temperature range
- +1 kVdc electrical isolation
- Screening available

Applications:

- Eliminate ground loops
- Level shifting
- Line receiver
- Switching power supplies
- Motor control

DESCRIPTION

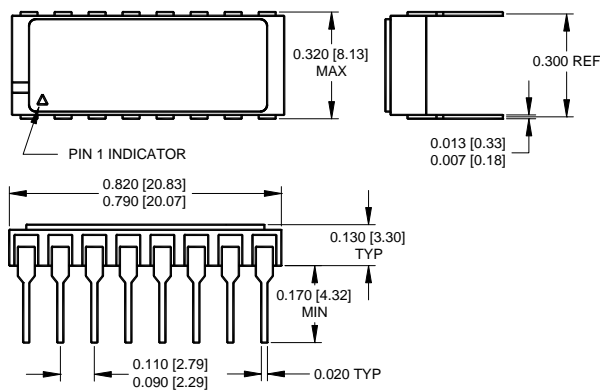
The Mii **66342** optically coupled isolator consists of four 850 nm GaAIAs LEDs and four silicon phototransistors mounted and coupled in a 16 pin dual-in-line package. Test studies have shown this LED to be even more radiation tolerant than the 660 nm LED typically used in radiation tolerant applications. Each unit contains four channels. These solid state couplers are ideal for designs where board space and device weight are important design considerations.

ABSOLUTE MAXIMUM RATINGS

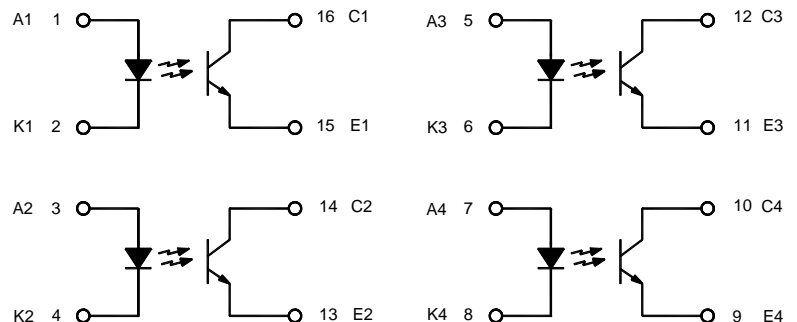
Input-to-output Voltage (Note 1)	±1 kV
Collector-Emitter Voltage	60 V
Emitter-Collector Voltage	7 V
Input Diode Reverse Voltage	3 V
Input Diode Continuous Forward Current at (or below) 25°C Free-Air Temperature (Note 2)	40 mA
Input Diode Power Dissipation	60 mW
Continuous Collector Current	50 mA
Continuous Transistor Power Dissipation at (or below) 25°C Free-Air Temperature (Note 3)	300 mW
Storage Temperature	-65°C to +150°C
Operating Free-Air Temperature Range	-55°C to +125°C
Lead Solder Temperature (10 seconds, 1/16" from case)	240°C

Notes:

1. Measured with Inputs shorted together and outputs shorted together.
2. Derate linearly to 125°C free-air temperature at the rate of 0.40 mA/°C above 65°C.
3. Derate linearly to 125°C free-air temperature at the rate of 3 mW/°C.

Package Dimensions

ALL DIMENSIONS ARE IN INCHES [MILLIMETERS]

Schematic Diagram

66342**PROTON RADIATION TOLERANT FOUR CHANNEL,
HERMETIC 16 PIN DUAL-IN-LINE OPTICALLY COUPLED ISOLATOR**

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ELECTRICAL CHARACTERISTICST_A = 25°C unless otherwise specified.

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS	NOTE
Input Diode Static Reverse Current	I _R			100	μA	V _R = 2 V	1
Input Diode Forward Voltage	V _F	1.0		2.2	V	I _F = 10 mA	
		0.8		2.0			
		0.7		1.9			

OUTPUT TRANSISTORT_A = 25°C unless otherwise specified.

Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	40			V	I _C = 1 mA, I _F = 0	
Emitter-Collector Breakdown Voltage	V _{(BR)ECO}	7			V	I _E = 100 μA, I _F = 0	

COUPLED CHARACTERISTICST_A = 25°C unless otherwise specified.

On State Collector Current T _a = +25°C	I _{C(ON)}	1.0			mA	V _{CE} = 5 V, I _F = 1 mA	
On State Collector Current T _a = -55°C	I _{C(ON)}	1.4			mA	V _{CE} = 5 V, I _F = 2 mA	
On State Collector Current = +125°C	I _{C(ON)}	1.0			mA	V _{CE} = 5 V, I _F = 2 mA	
Off State Collector Current	I _{C(OFF)}			100	nA	V _{CE} = 20 V, I _F = 0 mA	1
Off State Collector Current, T _a = +125°C	I _{C(OFF)}			100	μA	V _{CE} = 20 V, I _F = 0 mA	1
Collector-Emitter Saturation Voltage	V _{CE(SAT)}			0.3	V	I _F = 2 mA, I _C = 1 mA	
Input - Output Current	I _{IO}			100	μA	I _{IO} = 1.2 kV	
Input to Output Resistance	R _{IO}	10 ¹¹			Ω	V _{IO} = 1 kV	2
Input to Output Capacitance	C _{IO}			5	pF	F = 1 MHz, V _{IO} = 0	
Rise Time or Fall Time	t _r or t _f		10	20	μs	V _{CC} = 10 V, I _F = 5 mA, R _L = 100Ω	

NOTES:

- Parameter applies to all part numbers.
- These parameters are measured between all phototransistor leads shorted together and with all input diode leads shorted together.

SELECTION GUIDE

PART NUMBER	PART DESCRIPTION
66342-001	Commercial
66342-101	Screened to JANTX Level
66342-105	Screened to JANTXV Level
66342-300	Screened to JANS Level