66238 GULL WING RADIATION TOLERANT HERMETICALLY SEALED, SINGLE CHANNEL OPTOCOUPLER (Electrical Equivalent To 66099)

OPTOELECTRONIC PRODUCTS DIVISION

08/11/2011

Features:

- Current transfer ratio: 150% typical
- 1000 Vdc isolation test voltage
- Base lead provided for conventional transistor biasing
- Low power consumption
- Radiation tolerant

Applications:

- Military and Space
- High reliability systems
- Voltage Level Shifting
- Isolated Receiver Input
- Communication systems

DESCRIPTION

Radiation tests performed on the 66099 optocoupler have shown that the electrical performance of the device after irradiation is an order of magnitude better than the 4N49 optocouplers. The ***66238*** has the same components and layout in a 10 pin, hermetically sealed gull wing package.

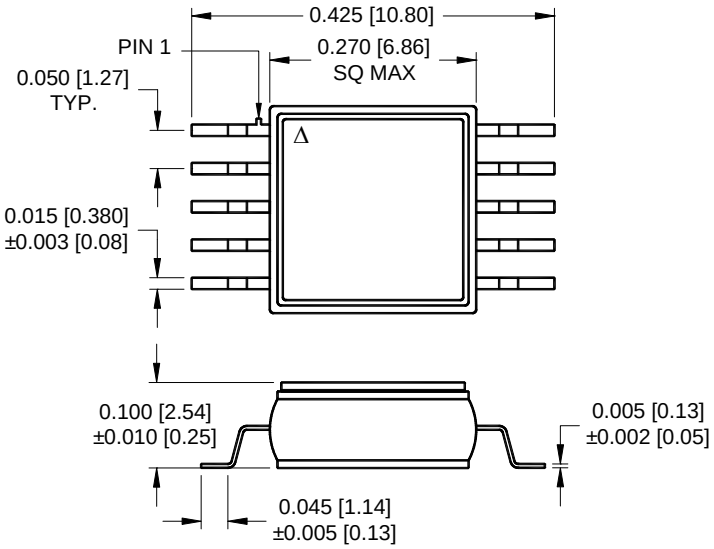
ABSOLUTE MAXIMUM RATINGS (t_A =25℃ unless otherwise noted)

Input to Output Isolation Voltage (Note 1)	1 kVdc
Peak Forward Input Current	40 mA
Reverse Input Voltage	3 V
Input Power Dissipation (Note 2)	80 mW
Continuous Collector Current	50 mA
Collector-Emitter Voltage	40 V
Emitter-Collector Voltage	4 V
Collector-Base Voltage	40 V
Power Dissipation (Note 3)	300 mW
Storage Temperature	-65℃ to +125℃
Operating Free-Air Temperature Range	-55℃ to +125℃
Lead Solder Temperature (5 seconds, 1/16" from case)	240℃

Notes:

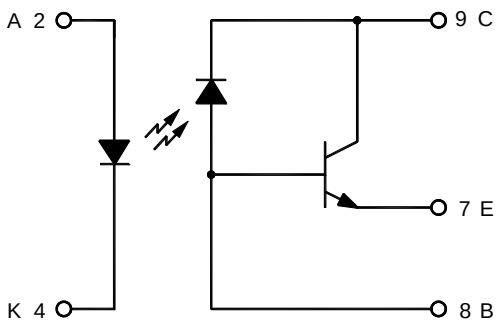
1. Measured with input diode leads shorted together and output leads shorted together.
2. Derate linearly 0.80 mW/℃ above 25℃.
3. Derate linearly 3.0 mW/℃ above 25℃.

Package Dimensions



ALL DIMENSIONS ARE IN INCHES [MILLIMETERS]

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	0.8		1.6	V	I_F = 10 mA

OUTPUT TRANSISTOR CHARACTERISTICS

T_A = 25°C unless otherwise noted

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	40			V	I_C = 100 µA, I_F = 0
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	40			V	I_C = 1 mA, I_B = 0, I_F = 0
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	4			V	I_C = 0 mA, I_E = 100 µA, I_F = 0
Collector-Emitter Cutoff Current	I_{CEO}			100	nA	V_{CE} = 20 V

COUPLED CHARACTERISTICS

T_A = 25°C unless otherwise noted

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Current Transfer Ratio	CTR	100			%	V_{CE} = 1 V, I_F = 10 mA
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$			0.3	V	I_F = 20 mA, I_C = 10 mA
Input-Output Isolation Current	I_{ISO}			100	nA	V_{I-O} = 1000 V
Rise Time	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

RECOMMENDED OPERATING CONDITIONS:

PARAMETERS	SYMBOL	MIN	MAX	UNITS
Input Current, Low Level	I_{FL}	0	100	µA
Input Current, High Level	I_{FH}	10	20	mA
Supply Voltage	V_{CC}	5.0	20	V
Operating Temperature	T_A	-55	+100	°C

SELECTION GUIDE

PART NUMBER	PART DESCRIPTION
66238-001	Commercial
66238-101	Commercial with Group A
66238-103	Screened to TX level
66238-105	Screened to TXV level