***66099*-401**	**RADIATION TOLERANT OPTOCOUPLER**	**OPTOELECTRONIC PRODUCTS DIVISION**

Features:

- Meets or exceeds MIL-PRF-19500 radiation requirements
- Current Transfer Ratio - 200% typical
- 1kVdc electrical input to output isolation
- Base lead provided for conventional transistor biasing
- Proton radiation tolerant

Applications:

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

DESCRIPTION

The ***66099-401*** optocoupler consists of a GaAlAs LED optically coupled to a high voltage phototransistor mounted in a hermetic TO-5 package. Figures 1 and 2 from the 66099 data sheet illustrate the radiation performance of the device. Micropac's 66099-401 performs beyond the levels shown in MIL-PRF-19500 for a level H (total dose>10^6 rads, neutron fluence >1X10^{12} n/cm^2) RHA designation.

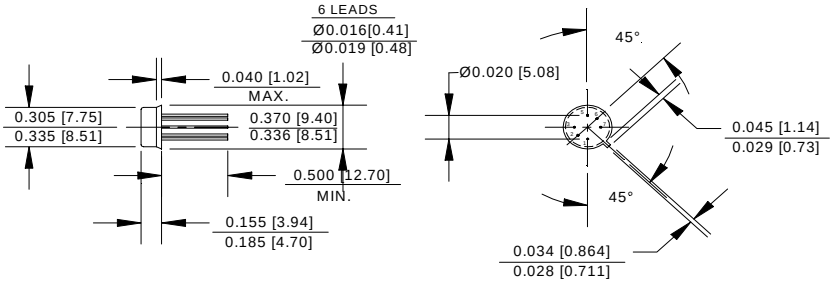
ABSOLUTE MAXIMUM RATINGS

Storage Temperature ..... -65°C to +150°C
Operating Free-Air Temperature Range ..... -55°C to +100°C
Lead Solder Temperature (1/16" (1.6mm) from case for 5 seconds) ..... 240°C
Input Diode Forward DC Current 40mA
Input Power Dissipation (see Note 1) 80mW
Reverse Input Voltage 3V
Collector-Base Voltage 150V
Collector-Emitter Voltage 150V
Emitter-Base Voltage 6V
Continuous Collector Current 300mA
Continuous Transistor Power Dissipation (see Note 2) 300mW

Notes:

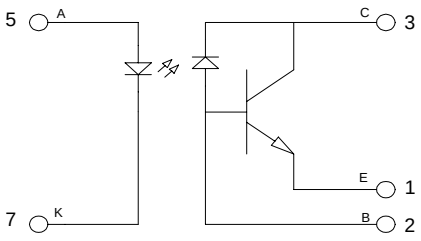
1. Derate linearly 0.80 mW/°C above 25°C.
2. Derate linearly 3.0 mW/°C above 25°C.

Package Dimensions



NOTE: ALL LINEAR DIMENSIONS ARE IN INCHES (MILLIMETERS)

Schematic Diagram



ELECTRICAL CHARACTERISTICS

$T_A = 25^{\circ}C$ unless otherwise specified.

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Input Diode Static Reverse Current	I_R			100	µA	$V_R = 2V$
Input Diode Static Forward Voltage	V_F	0.8		2	V	$I_F = 10mA$

OUTPUT TRANSISTOR CHARACTERISTICS

$T_A = 25^{\circ}C$ unless otherwise noted

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	150			V	$I_C = 100\mu A$, $I_B = 0$, $I_F = 0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	150			V	$I_C = 1mA$, $I_B = 0$, $I_F = 0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	4			V	$I_C = 0mA$, $I_E = 100\mu A$, $I_F = 0$
Collector-Emitter Cutoff Current	I_{CEO}			100	nA	$V_{CE} = 20V$

COUPLED CHARACTERISTICS

$T_A = 25^{\circ}C$ unless otherwise noted

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

RECOMMENDED OPERATING CONDITIONS:

PARAMETER	SYMBOL	MIN	MAX	UNITS
Input Current, Low Level	I_{FL}	0	10	µA
Input Current, High Level	I_{FH}	10	20	mA
Operating Temperature	T_A	-55	100	°C