66092-317 LINEAR OPTOCOUPLER

OPTOELECTRONIC PRODUCTS DIVISION

MII 66092-317
FOR POWER SUPPLY APPLICATION

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FEATURES:

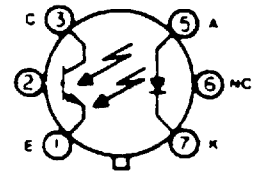
- Hermetically sealed
- High reliability
- Base lead eliminated for improved noise immunity
- Rugged package - able to withstand high acceleration load
- High-voltage electrical isolation.....1-KV rating
- Case is electrically isolated
- Stability over wide temperature range

DESCRIPTION:

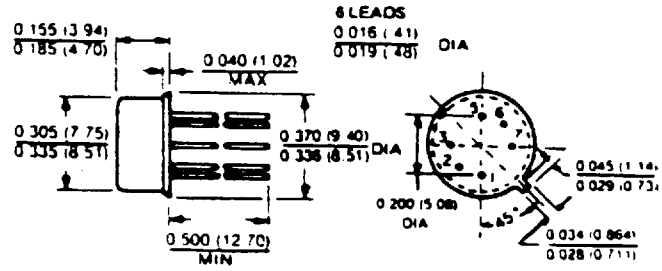
These devices consist of a gallium arsenide infrared emitting diode optically coupled to a monolithic silicon phototransistor detector. They have been designed and specified to meet the requirements of switchmode power supplies and other applications requiring very closely matched current transfer ratios (CTR), linearity and stable performance over the temperature range. The internal base-to-pin connection has been eliminated for improved noise immunity.

TESTING:

The 66092-317 optocouplers can be supplied to customer specification as well as JANTX and JANTXV quality levels.



NC-NO INTERNAL CONNECTION



NOTE: All linear dimensions are in inches (millimeters).

ABSOLUTE MAXIMUM RATINGS:

Input-to-Output Voltage	±1 KV
Emitter-Collector	7 V
Collector-Emitter Voltage (see note 1)	30 V
Input Diode Reverse Voltage	2 V
Input Diode Continuous Forward Current at (or below) 65°C Free-Air Temperature (see Note 2)	40 mA
Continuous Collector Current	50 mA
Peak Diode Current (see note 3)	1 A
Continuous Transistor Power Dissipation at (or below) 25°C Free-Air Temperature (see note 4)	300 mW
Operating Free-Air Temperature Range	-55°C to +100°C
Storage Temperature	-65°C to +125°C
Lead Temperature 1.6 mm (1/16 inch) from Case for 10 Seconds	240°C

NOTES:

1. This value applies with the emitter-base diode open-circuited and the input-diode current equal to zero.
2. Derate linearly to 125° C free-air temperature at the rate of 0.67 mA/°C.
3. This value applies for $t_w \leq 1$ us. PRR<300 pps.
4. Derate linearly to 125°C free-air temperature at the rate of 3 mW/°C.

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ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

CHARACTERISTIC	SYMBOL	MIN	TYP	MAX	UNIT
INPUT LED					
Forward Voltage (I_F = 10 mA)	V_F	1.0	1.15	1.5	V
Reverse Leakage Current (V_R = 5.0 V)	IR	-	0.05	100	µA
OUTPUT TRANSISTOR					
Collector-Emitter Dark Current (V_{CE} = 10V, T_A = 25°C)	I_{CEO1}	-	-	100	nA
(V_{CE} = 10V, T_A = 100°C)	I_{CEO2}	-	-	100	µA
Collector-Emitter Breakdown Voltage (I_C = 1.0 mA)	$V_{(BR)CEO}$	30	45	-	V
Emitter - Collector Breakdown Voltage (I_E = 100 µA)	$V_{(BR)CEO}$	7.0	7.8	-	V
COUPLED					
Output Collector Current (I_F = 10 mA, V_{CE} = 4 V)	$I_{C(ON)}$	13.6	17	20.4	mA
@ T_A = +100°C		10.2	-	-	mA
@ T_A = -55°C		6.8	-	-	mA
Collector-Emitter Saturation Voltage (I_C = 500 µA, I_F = 5.0 mA)	$V_{CE(sat)}$	-	0.15	0.4	V
Turn-On Time (I_C = 2.0 mA, V_{CC} = 10 V, R_L = 100 Ω	t_{on}	-	7.5	20	µs
Turn-Off Time (I_C = 2.0 mA, V_{CC} = 10 V, R_L = 100 Ω	t_{off}	-	5.7	20	µs
Rise Time (I_C = 2.0 mA, V_{CC} = 10 V, R_L = 100 Ω	t_r	-	3.2	-	µs
Fall Time (I_C = 2.0 mA, V_{CC} = 10 V, R_L = 100 Ω	t_f	-	4.7	-	µs
Isolation Resistance (V_{I-O} = 1000 V)	R_{ISO}	10^{11}	-	-	Ω