66166-XXX LINEAR OPTOCOUPLER	**Mii** OPTOELECTRONIC PRODUCTS DIVISION

Features:

- Hermetically sealed 6 pin LCC
- Surface mountable on ceramic or printed circuit board
- High reliability
- High voltage electrical isolation – 1000 volts
- Base lead eliminated for improved noise immunity
- Screened per MIL-STD-883 upon request

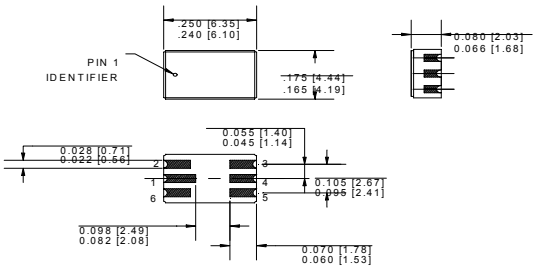
DESCRIPTION

The 66166 linear optocoupler consists of one gallium arsenide infrared emitting diode optically coupled to a monolithic silicon phototransistor detector and is sealed in a miniature ceramic leadless chip carrier. The miniature six pin ceramic package is ideal for designs where board space and device weight are important design considerations. These devices 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 military temperature range. The internal base-to-pin connection has been eliminated for improved noise immunity. The 66166 is available in commercial (-003), screened in accordance with MIL-STD-883 (-000), and military temperature (-002) versions or tested to customer specifications.

ABSOLUTE MAXIMUM RATINGS

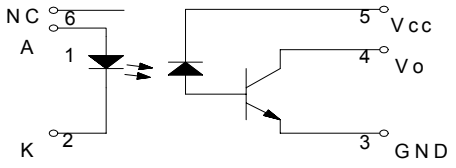
Lead Solder Temperature……(1/16 inch [1.6mm] from case for 10 seconds)	260°C
Average Input Current	25mA
Peak Output Current……(IF – 50% duty cycle, 1 ms pulse width)	50mA
Peak Transient Input Current……..(IF - ≤ µs pulse width, 300pps)	1.0 A
Reverse Input Voltage	5.0 V
Input Power Dissipation	45mW
Average Output Current	8.0mA
Peak Output Current	16.0mA
Emitter-Base Reverse Voltage	5.0 V
Supply and Output Voltage	-0.5 V to 20 V
Base Current	5.0mA
Output Power Dissipation	100mW

Package Dimensions



ALL DIMENSIONS ARE IN INCHES [MILLIMETERS]
UNSPECIFIED TOLERANCE ±.005 INCHES

Schematic Diagram



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ELECTRICAL CHARACTERISTICS

25°C unless otherwise noted

PARAMETER	SYMBOL	MIN	TYP*	MAX	UNITS	TEST CONDITIONS
Current Transfer Ratio	CTR	15 15 15	30 28 25	40 40 40	% % %	I_F = 16mA, V_O = 0.50V, V_{cc} = 4.5V, T_A = 25°C I_F = 16mA, V_O = 0.50V, V_{cc} = 4.5V, T_A = 125°C I_F = 16mA, V_O = 0.50V, V_{cc} = 4.5V, T_A = -55°C
Logic Low Output Voltage	V_{OL}			0.40	V	I_F = 16mA, I_O = 2.4mA, V_{cc} = 4.5V
Logic High Output Current	I_{OH}			500 1	nA µA	I_F = 0mA, V_O = V_{cc} 5.5V I_F = 0mA, V_O = V_{cc}18.0V
Logic Low Supply Current	I_{CCL}		40		µA	I_F = 16.0mA, V_O = open, V_{cc} = 18.0V
Logic High Supply Current	I_{CCH}			1.00	µA	I_F = 0mA, V_O = open, V_{cc} = 18.0V
Input Forward Voltage	V_F			1.7	V	I_F = 16.0mA
Temperature Coefficient of Forward Voltage	$\Delta V_F/\Delta T_A$		-1.80		mV/°C	I_F = 16.0mA
Input Reverse Breakdown Voltage	B_{VR}	5.0			V	I_R = 10.0µA
Input Capacitance	C_{IN}		42		pF	f = 1.00MHz, V_F = 0
Input-Output Insulation Leakage Current	I_{10}			1.00	µA	45% Relative Humidity, t = 5.0sec V_{10} = 1000Vdc
Input-Output Resistance	R_{10}		10^{12}		Ω	V_{10} = 500Vdc
Input-Output Capacitance	C_{10}		0.50		pF	f = 1.00MHz
Transistor DC Current Gain	h_{FE}		150		--	V_o = 5.0V, I_O = 3.0mA

SWITCHING SPECIAFICATIONS

T_A = 25°C, V_{CC} = 5.0V, IF = 16.0mA, Unless otherwise noted

PARAMETER	SYMBOL	MIN	TYP*	MAX	UNITS	TEST CONDITIONS
Propagation Delay Time to Logic Low at Output	t_{PHL}			1.3	µs	R_L = 1.90KΩ
Propagation Delay Time to High Output Level	t_{PLH}			1.3	µs	R_L = 1.90KΩ
Common Mode Transient immunity at Logic High Level Output	CH_H		1000		Vµs	I_F = 0mA, V_{CM} = 10.0V_{p-p}, R_L = 1.90KΩ
Common Mode Transient immunity at Logic Low Level Output	CH_L		1000		Vµs	V_{CM} = 10.0V_{p-p}, R_L = 1.90KΩ

*All Typical parameters are not tested but guaranteed by design.