66124	**TWO CHANNEL, HERMETICALLY SEALED 20 PIN LCC ELECTRICALLY SIMILAR TO 6N140**	**OPTOELECTRONIC PRODUCTS DIVISION**

Features:

- DSCC Approved 89785022X
- High current transfer ratio: 1000% typical
- 1500 Vdc isolation test voltage
- Low input current requirement: 0.5mA
- Low power consumption
- High radiation immunity
- Faraday shield to provide high common mode rejection

Applications:

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

DESCRIPTION

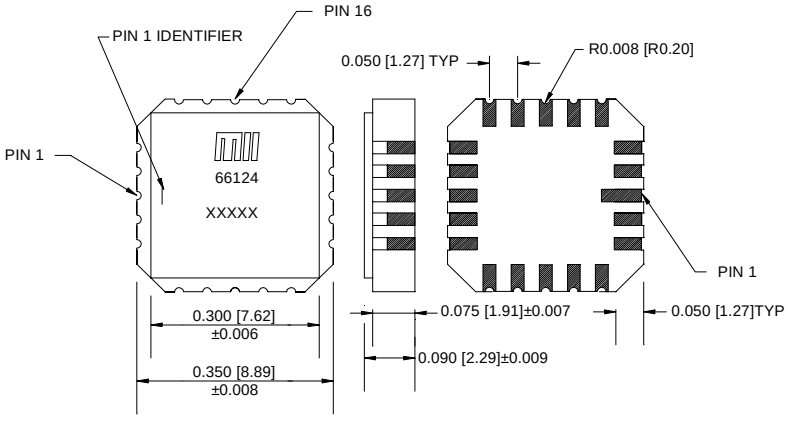
The ***66124*** optocoupler consists of two infrared LEDs optically coupled to two corresponding high gain darlington detectors. This unique quad optocoupler provides high CTR and low leakage currents over the full military temperature range (-55° to +125°C). The 66124 is a 20pin leadless chip carrier hermetically sealed package and is available in standard and screened versions or tested to customer specifications. MIL-PRF-38534.

ABSOLUTE MAXIMUM RATINGS

(No derating required up to 125°C)

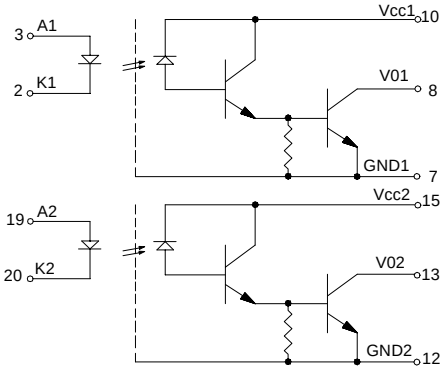
Storage Temperature ..... -65°C to +150°C
Operating Free-Air Temperature Range ..... -55°C to +125°C
Lead Solder Temperature ..... 260°C for 10s (1.6mm below seating plane)
Peak Forward Input Current ..... 40mA (1ms duration)
Average Forward Input Current 20mA
Input Power Dissipation 35mW
Reverse Input Voltage 5V
Supply Voltage - V_{CC} ..... 7V(1 minute maximum)
Output Current - I_O 25mA
Output Power Dissipation 40mW
Output Voltage - V_O 7V
Total Power Dissipation 350mW

Package Dimensions



ALL DIMENSIONS ARE IN INCHES [MILLIMETERS]

Schematic Diagram



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ELECTRICAL CHARACTERISTICS

T_a = -55°C to 125°C unless otherwise specified.

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS	NOTE
Current Transfer Ratio	CTR	300	1000		%	I_F = 0.5mA, V_O = 0.4V, V_{CC} = 4.5V	1,2
		300	750		%	I_F = 1.6mA, V_O = 0.4V, V_{CC} = 4.5V	1,2
		200	400		%	I_F = 5.0mA, V_O = 0.4V, V_{CC} = 4.5V	1,2
Logic Low Output Voltage	V_{OL}		0.2	0.4	V	I_F = 0.5mA, I_{OL} = 1.5mA, V_{CC} = 4.5V	1
			0.1	0.4	V	I_F = 1.6mA, I_{OL} = 4.8mA, V_{CC} = 4.5V	
			0.1	0.4	V	I_F = 5.0mA, I_{OL} = 10mA, V_{CC} = 4.5V	
Logic High Output Current	I_{OH}		.005	250	µA	I_F = 2µA, V_O = V_{CC} = 18V	1,3
High Level Output Current	I_{CCH}		.010	20	µA	I_{F1} = I_{F2} = 0mA, V_{CC} = 18V	
Low Level Supply Current	I_{CCL}		1	2	mA	I_{F1} = I_{F2} = 1.6mA, V_{CC} = 18V	
Input Forward Voltage	V_F		1.4	1.8	V	I_F = 1.6mA	1
Input Reverse Breakdown Voltage	BV_R	5			V	I_R = 10µA	1
Input-Output Insulation Leakage Current	$I_{I—O}$			1.0	µA	$V_{I—O}$ = 1500Vdc, Relative Humidity = 45% t_A = 25°C, t = 5s	4
Propagation Delay Time To High Output Level	t_{PLH}			60	µs	I_F = 0.5mA, V_{CC} = 5.0V, R_L = 4.7kΩ	
				50	µs	I_F = 1.6mA, V_{CC} = 5.0V, R_L = 1.5kΩ	
				30	µs	I_F = 5mA, V_{CC} = 5.0V, R_L = 680Ω	
Propagation Delay Time To Low Output Level	t_{PHL}			100	µs	I_F = 0.5mA, V_{CC} = 5.0V, R_L = 4.7kΩ	
				30	µs	I_F = 1.6mA, V_{CC} = 5.0V, R_L = 1.5kΩ	
				10	µs	I_F = 5mA, V_{CC} = 5.0V, R_L = 680Ω	

TYPICAL CHARACTERISTICS

T_a = 25°C, V_{CC} = 5V Each Channel

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS	NOTE
Capacitance (Input-Output)	C_{I-O}		1.5		pF	f = 1MHz, t_a = 25°C	1, 4
Resistance (Input-Output)	R_{I-0}		10^{12}		Ω	$V_{I—O}$ = 500V, t_a = 25°C	1, 4
Common Mode Transient immunity at High Output Level	CM_H	500	1000		V/µs	V_{CM} = 50V $_{P-P}$, V_{CC} = 5.0V, R_L = 1.5kΩ, I_F = 0mA t_a = 25°C	5
Common Mode Transient Immunity at Low Output Level	CM_L	500	1000		V/µs	V_{CM} = 50V $_{P-P}$, V_{CC} = 5.0V, R_L = 1.5kΩ, I_F = 1.6mA t_a = 25°C	6

NOTES:

1. Each channel.
2. CURRENT TRANSFER RATIO is defined as the ratio of output collector current, I_O, to the forward LED input current., I_F, times 100%.
3. I_F = 2µA for channel under test. For all other channels, I_F = 10mA.
4. Measured with input pins shorted together and output pins shorted together.
5. CM_H is the maximum tolerable common mode transient to assure that the output will remain in a high logic state (ie. V_O > @.0V).
6. CM_L is the maximum tolerable common mode transient to assure that the output will remain in a low logic state (ie. V_O < 0.8V).

RECOMMENDED OPERATING CONDITIONS:

PARAMETER	SYMBOL	MIN	MAX	UNITS
Input Current, Low Level	I_{FL}	0	2	µA
Input Current, High Level	I_{FH}	0.5	5	mA
Supply Voltage	V_{CC}	2.0	18	V