66400

MICROCOUPLER, PHOTODARLINGTON OUTPUT

MICROPAC
OPTOELECTRONIC PRODUCTS
DIVISION

05/29/03

Features:

- Photodarlington output
- Small size saves real estate
- Large thick film gold bond pads
- Element evaluation on request
- Electrically similar to 6N140

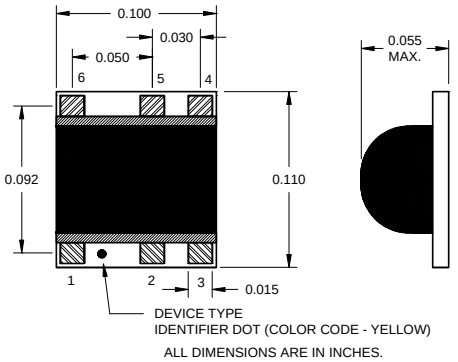
Applications:

- Eliminate ground loops
- Level shifting
- Line receiver
- Solid state switching
- Switching power supplies

DESCRIPTION

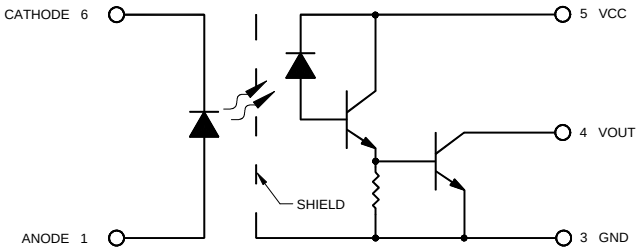
The ***66400*** microcoupler is a single channel optocoupler consisting of an LED optically coupled to a light sensitive photodarlington transistor. Each microcoupler is provided with full 100% DC testing (+125°C test option upon request) or 100% element evaluation. All microcouplers are capable of operating over the full military temperature range.

Package Dimensions



ALL DIMENSIONS ARE IN INCHES.

Schematic Diagram



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			%	I_F = 0.5mA, V_O = 0.4V, V_{CC} = 4.5V	1
		300				I_F = 1.6mA, V_O = 0.4V, V_{CC} = 4.5V	
		200				I_F = 5.0mA, V_O = 0.4V, V_{CC} = 4.5V	
Logic Low Output Voltage	V_{OL}		0.1	0.4	V	I_F = 0.5mA, I_{OL} = 1.5mA, V_{CC} =4.5V	
			0.2	0.4		I_F = 5.0mA, I_{OL} = 10mA, V_{CC} =4.5V	
Logic High Output Current	I_{OH}		0.005	250	µA	I_F = 2.0µA, V_O = 18.0V, V_{CC} = 18.0V	
Logic High Supply Current	I_{CCH}		0.01	40	µA	I_F = 0mA, V_{CC} = 18V	
Low Level Supply Current	I_{CCL}		0.8	2	mA	I_F = 1.6mA, V_{CC} = 18V	
Input Forward Voltage	V_F	0.9		1.7	V	I_F = 2.0mA	
Input Reverse Current	I_R			10	µA	V_R = 5.0V	
Input-Output Insulation Leakage Current	$I_{I—O}$			1.0	µA	$V_{I—0}$ = 1500VDC, R.H. < 50% T_A = 25°C	2
Propagation Delay Time To High Output Level	T_{PLH}		5	60	µs	I_F = 0.5mA (pulsed), V_{CC} = 5.0V, R_L = 4.7KΩ, Cbypass = 0.1µF	3 Figure 1
			10	30		I_F = 5.0mA (pulsed), V_{CC} = 5.0V, R_L = 680Ω, Cbypass = 0.1µF	
Propagation Delay Time To Low Output Level	T_{PHL}		8	100	µs	I_F = 0.5mA (pulsed), V_{CC} = 5.0V, R_L = 4.7KΩ, Cbypass = 0.1µF	3 Figure 1
			2	10		I_F = 5.0mA (pulsed), V_{CC} = 5.0V, R_L = 680Ω, Cbypass = 0.1µF	

1. Current Transfer Ratio is defined as the ratio of output collector current, I_O, to the forward LED input current., I_F, times 100%.
2. Measurement between pins 1 and 6 shorted together and pins 2, 3, 4, and 5 shorted together for duration of 1 second.
3. Pulsed at F = 10KHz, 50% Duty Cycle and Amplitude adjusted for indicated forward LED current through I_F monitor resistor.

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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

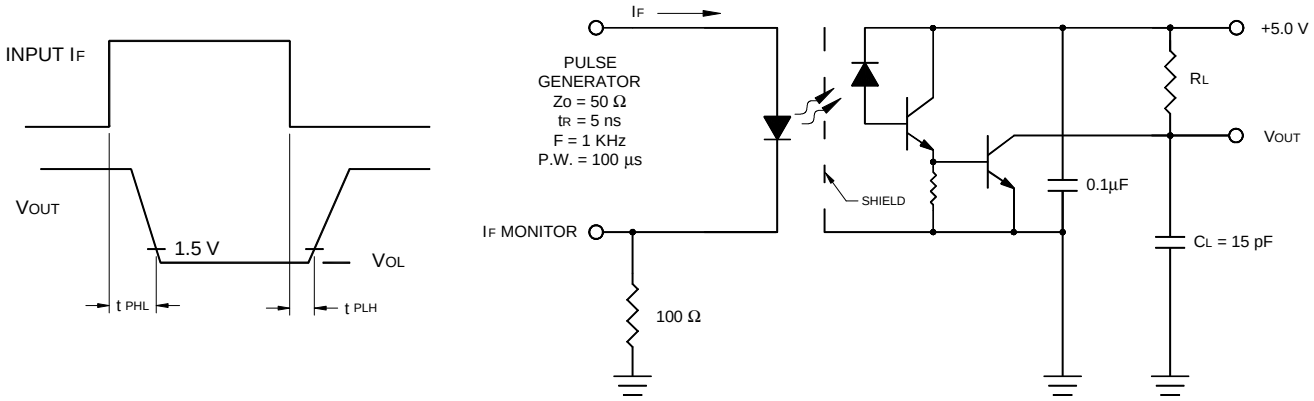

Figure 1. Switching Test Circuit