

**66083****MINIATURE 4 PIN LCC OPTOCOUPLER**

11/12/2009

**Features:**

- Electrically similar to 4N22, 4N23, or 4N24
- Standard and screened versions available
- Hermetically sealed 4 pin LCC
- High-voltage electrical isolation 1 kV rating

**Applications:**

- High density surface mount circuits
- Ground loop isolation
- Feedback controls
- General purpose switching circuits

**DESCRIPTION**

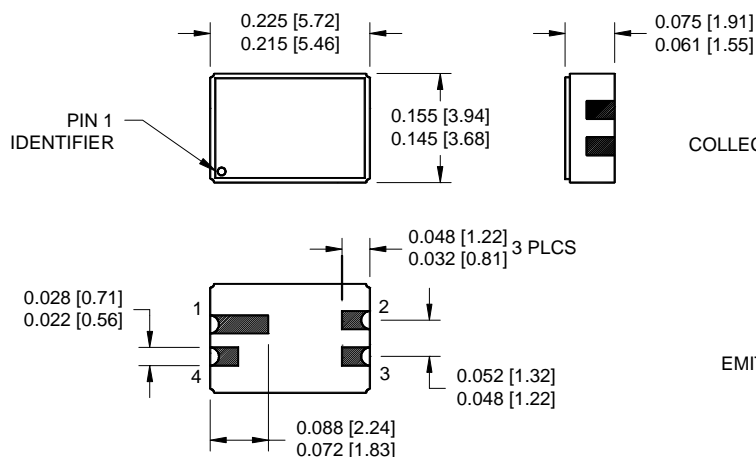
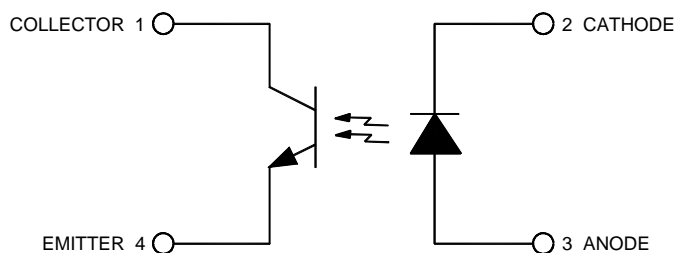
The **66083** series optocouplers consist of an infrared LED and a silicon phototransistor in a 4 pin hermetically sealed leadless chip carrier. The 66083 is electrically similar to the 4N22, 4N23, or 4N24 series optocouplers, and is available in standard and screened versions. The 66083 miniature LCC is ideal for surface mount applications where board space is limited.

**ABSOLUTE MAXIMUM RATINGS**

Input-to-Output Voltage .....	$\pm 1$ kV
Collector-Emitter Voltage.....	40 V
Input Diode Reverse Voltage.....	2 V
Input Diode Continuous Forward Current at (or below) 65°C Free-Air Temperature (Note 1) .....	40 mA
Continuous Collector Current .....	50 mA
Peak Diode Current ( $t_w \leq 1\mu\text{s}$ , PRR < 300 pps).....	1 A
Continuous Transistor Power Dissipation at (or below) 25°C Free-Air Temperature (Note 2) .....	300 mW
Operating and Storage Free-Air Temperature Range .....	-55°C to +125°C
Lead Temperature (10 seconds max) .....	240°C

Note 1: Derate linearly to 125°C free-air temperature at the rate of 0.67 mA/°C

Note 2: Derate linearly to 125°C free-air temperature at the rate of 3 mW/°C

**Package Dimensions****Schematic Diagram**

ALL DIMENSIONS ARE IN INCHES [MILLIMETERS]

66083

11/12/2009

## MINIATURE 4 PIN LCC OPTOCOUPLER

ELECTRICAL CHARACTERISTICS INPUT LED  $T_A = 25^\circ\text{C}$  Unless otherwise specified

PARAMETER	SYMBOL	MIN	MAX	UNITS	TEST CONDITIONS	NOTE
Input Diode Static Reverse Current	$I_R$		100	$\mu\text{A}$	$V_R = 2\text{ V}$	
Input Diode Static Forward Voltage	$V_F$	1.0	1.7	V	$I_F = 10\text{ mA}$	
		0.8	1.5			
		0.7	1.3			

OUTPUT TRANSISTOR  $T_A = 25^\circ\text{C}$  Unless otherwise specified

PARAMETER	SYMBOL	MIN	MAX	UNITS	TEST CONDITIONS	NOTE
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	40		V	$I_C = 1\text{ mA}, I_B = 0, I_F = 0$	
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	7		V	$I_C = 0, I_E = 100\text{ }\mu\text{A}, I_F = 0$	

COUPLED CHARACTERISTICS  $T_A = 25^\circ\text{C}$  Unless otherwise specified

PARAMETER	SYMBOL	MIN	MAX	UNITS	TEST CONDITIONS	NOTE
On State Collector Current	$I_{C(ON)1}$	0.15		mA	$V_{CE} = 5\text{ V}, I_F = 2\text{ mA}$	
		0.2				
		0.4				
On State Collector Current	$I_{C(ON)2}$	2.5		mA	$V_{CE} = 5\text{ V}, I_F = 10\text{ mA}$	
		6.0				
		10.0				
On State Collector Current	$I_{C(ON)}$	1.0		mA	$V_{CE} = 5\text{ V}, I_F = 10\text{ mA}$	
-55°C		2.5				
		4.0				
On State Collector Current	$I_{C(ON)}$	1.0		mA	$V_{CE} = 5\text{ V}, I_F = 10\text{ mA}$	
+100°C		2.5				
		4.0				
Off State Collector Current	$I_{C(OFF)}$		100	nA	$V_{CE} = 20\text{ V}, I_B = 0, I_F = 0\text{ mA}$	
Off State Collector Current	$I_{C(OFF)}$		100	$\mu\text{A}$	$V_{CE} = 20\text{ V}, I_B = 0, I_F = 0\text{ mA}$	
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$		0.3	V	$I_C = 2.5\text{ mA}, I_B = 0, I_F = 20\text{ mA}$	
			0.3		$I_C = 5\text{ mA}, I_B = 0, I_F = 20\text{ mA}$	
			0.3		$I_C = 10\text{ mA}, I_B = 0, I_F = 20\text{ mA}$	
Input to Output Resistance	$R_{I-O}$	$10^{11}$			$V_{IN-OUT} = 1\text{ kV}$	1
Input to Output Capacitance	$C_{I-O}$		5	pF	$F = 1\text{ MHz}, V_{IN-OUT} = 1\text{ kV}$	1
Rise Time	$t_r$		15	$\mu\text{s}$	$V_{CC} = 10\text{ V}, I_F = 10\text{ mA}, R_L = 100\text{ }\Omega$	
or			20			
Fall Time			20			

## NOTES:

- These parameters are measured between all phototransistor leads shorted together and with both input diode leads shorted together.

## RECOMMENDED OPERATING CONDITIONS:

PARAMETER	SYMBOL	MIN	MAX	UNITS
Input Current, Low Level	$I_{FL}$	0	100	$\mu\text{A}$
Input Current, High Level	$I_{FH}$	2	10	mA
Supply Voltage	$V_{CE}$	5	10	V

## SELECTION GUIDE

PART NUMBER	PART DESCRIPTION
66083-001	Commercial, 4N22 Equivalent
66083-002	Commercial, 4N23 Equivalent
66083-003	Commercial, 4N24 Equivalent
66083-101	TX Screened, 4N22 Equivalent
66083-102	TX Screened, 4N23 Equivalent
66083-103	TX Screened, 4N24 Equivalent
66083-201	TXV Screened, 4N22 Equivalent
66083-202	TXV Screened, 4N23 Equivalent
66083-203	TXV Screened, 4N24 Equivalent