

66095**MINIATURE LCC OPTOCOUPLER**
**OPTOELECTRONIC PRODUCTS
DIVISION**

08/14/2008

Features:

- Electrically similar to 4N47, 4N48, or 4N49
- 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

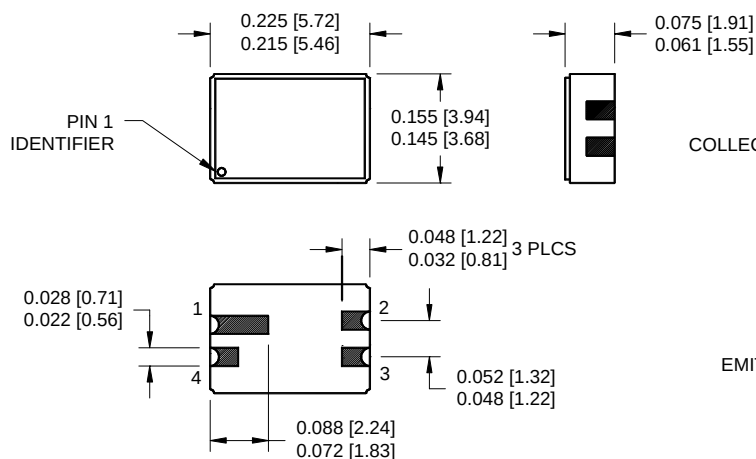
The **66095** series optocouplers consist of an infrared LED and a silicon phototransistor in a 4 pin hermetically sealed leadless chip carrier. The 66095 is electrically similar to the 4N47, 4N48, or 4N49 series optocouplers, and is available in standard and screened versions. The 66095 miniature LCC is ideal for surface mount applications where board space is limited.

ABSOLUTE MAXIMUM RATINGS

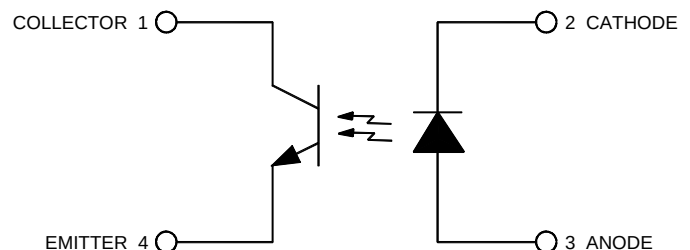
Input-to-Output Voltage	± 1 kV
Collector-Emitter Voltage.....	40 V
Input Diode Reverse Voltage.....	2 V
Input Diode Continuous Forward Current at (or below) 65°C Free-Air Temperature Note 1.....	40 mA
Continuous Collector Current	50 mA
Peak Diode Current.....($t_w \leq 1\mu s$, PRR < 300 pps).....	1A
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)	245°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

ALL DIMENSIONS ARE IN INCHES [MILLIMETERS]

Schematic Diagram

66095

08/14/2008

MINIATURE LCC OPTOCOUPLER**ELECTRICAL CHARACTERISTICS** $T_A = 25^\circ\text{C}$ unless otherwise specified.

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS	NOTE
Input Diode Static Reverse Current	I_R			100	nA	$V_R = 2\text{ V}$	
Input Diode Static Forward Voltage	V_F	1.0	1.4	1.7	V	$I_F = 10\text{ mA}$	
-55°C		0.8		1.5	V		
+25°C		0.7		1.3	V		
+100°C							

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

Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	40			V	$I_C = 1\text{ mA}, I_B = 0, I_F = 0$	
Emitter-Collector Breakdown Voltage	$V_{(BR)ECO}$	7			V	$I_B = 0, I_E = 100\text{ }\mu\text{A}, I_F = 0$	

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

On State Collector Current	-X01	0.5		-		$V_{CE} = 5\text{ V}, I_B = 0, I_F = 1\text{ mA}$	
$T_A = +25^\circ\text{C}$	-X02	1.0		5	mA		
	-X03	2.0		10			
On State Collector Current	-X01	0.7				$V_{CE} = 5\text{ V}, I_B = 0, I_F = 2\text{ mA}$	
$T_A = -55^\circ\text{C}$	-X02	1.4			mA		
	-X03	2.8					
On State Collector Current	-X01	0.5				$V_{CE} = 5\text{ V}, I_B = 0, I_F = 2\text{ mA}$	2
$T_A = +100^\circ\text{C}$	-X02	1.0			mA		
	-X03	2.0					
Off State Collector Current		$I_{C(OFF)}$		100	nA	$V_{CE} = 20\text{ V}, I_B = 0, I_F = 0\text{ mA}$	
+25°C							
Off State Collector Current, + 100°C		$I_{C(OFF)}$		100	μA	$V_{CE} = 20\text{ V}, I_B = 0, I_F = 0\text{ mA}$	
Collector-Emitter Saturation Voltage	-X01	$V_{CE(SAT)}$		0.3	V	$I_F = 2\text{ mA}, I_B = 0, I_C = 0.5\text{ mA}$	
	-X02	$V_{CE(SAT)}$		0.3	V	$I_F = 2\text{ mA}, I_B = 0, I_C = 1\text{ mA}$	
	-X03	$V_{CE(SAT)}$		0.3	V	$I_F = 2\text{ mA}, I_B = 0, I_C = 2\text{ mA}$	
Input to Output Resistance		R_{IO}	10^{11}		Ω	$V_{IN-OUT} = 1\text{ kV}$	1
Input to Output Capacitance		C_{IO}		5	pF	$F = 1\text{ MHz}, V_{IN-OUT} = 1\text{ kV}$	1
Rise Time (Phototransistor Operation)	-X01	t_r		20		$V_{CC} = 10\text{ V}, I_F = 10\text{ mA}, R_L = 100\text{ }\Omega$	
or	-X02	or		25	μs		
Fall Time	-X03	t_f		25			

NOTES:

- These parameters are measured between all phototransistor leads shorted together and with both input diode leads shorted together.
- This parameter must be measured using pulse techniques. $t_w = 100\text{ }\mu\text{s}$, duty cycle $\leq 1\%$.

RECOMMENDED OPERATING CONDITIONS:

PARAMETER	SYMBOL	MIN	MAX	UNITS
Input Current, Low Level	I_{FL}	0	100	μA
Input Current, High Level	I_{FH}	2	10	mA
Supply Voltage	V_{CC}	5	35	V
Operating Temperature	T_A	-55	125	$^\circ\text{C}$

SELECTION GUIDE

PART NUMBER	PART DESCRIPTION
66095-001	4N47 Optocoupler Commercial
66095-002	4N48 Optocoupler, Commercial
66095-003	4N49 Optocoupler, Commercial
66095-101	4N47 Optocoupler, Screened
66095-102	4N48 Optocoupler, Screened
66095-103	4N49 Optocoupler, Screened