

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

- Electrically similar to 4N47, 4N48, or 4N49
- Standard and screened versions available
- Hermetically sealed 4 pin LCC
- High-voltage electrical isolation...1kV rating

Applications:

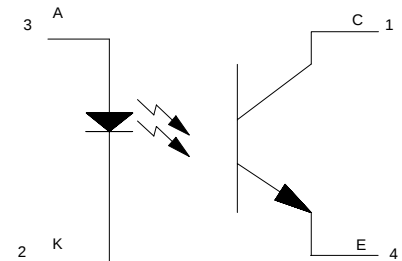
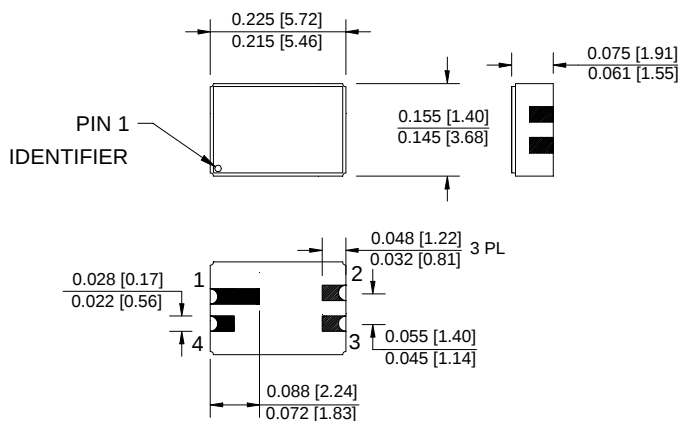
- High density surface mount circuits
- Ground loop isolation
- Feedback controls
- General purpose switching circuits

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
(This value applies with the input-diode current equal to zero)	
Input Diode Reverse Voltage	2 V
Input Diode Continuous Forward Current at (or below) 65°C Free-Air Temperature	40 mA
(Derate linearly to 125°C free-air temperature at the rate of 0.67 mA/°C)	
Continuous Collector Current	50 mA
Peak Diode Current.....(This Value applies for $t_w \leq 1\mu s$, PRR < 300 pps)	1A
Continuous Transistor Power Dissipation at (or below) 25°C Free-Air Temperature	300mW
(Derate linearly to 125°C free-air temperature at the rate of 3 mW/°C)	
Operating and Storage Free-Air Temperature Range	-55°C to +125°C
Lead Temperature 1.6mm (1/16 inch) from Case for 10 seconds	245°C

Package Dimensions**Schematic Diagram**

ALL DIMENSIONS ARE IN INCHES [MILLIMETERS]

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	μA	$V_R = 2\text{V}$	
Input Diode Static Forward Voltage	V_F	1.3	1.5	1.7	V	$I_F = 10\text{mA}$	
-55°C		1.3	1.5	1.7	V		
+25°C		1.3	1.5	1.7	V		
+100°C		1.3	1.5	1.7	V		

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

Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	40			V	$I_C = 1\text{mA}, I_F = 0$	
-------------------------------------	---------------	----	--	--	---	-----------------------------	--

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

On State Collector Current	-XX1	$I_{C(ON)}$	0.5		-	$V_{CE} = 5\text{V}, I_F = 1\text{mA}$	
$T_A = +25^\circ\text{C}$	-XX2		1		5		
	-XX3		2		10		
On State Collector Current	-XX1	$I_{C(ON)}$	0.7			$V_{CE} = 5\text{V}, I_F = 2\text{mA}$	
$T_A = -55^\circ\text{C}$	-XX2		1.4				
	-XX3		2.8				
On State Collector Current	-XX1	$I_{C(ON)}$	0.5			$V_{CE} = 5\text{V}, I_F = 2\text{mA}$	2
$T_A = +100^\circ\text{C}$	-XX2		1.0				
	-XX3		2.0				
Off State Collector Current		$I_{C(OFF)}$			100	$V_{CE} = 20\text{V}, I_F = 0\text{mA}$	
Off State Collector Current, $T_A = 100^\circ\text{C}$		$I_{C(OFF)}$			100	$V_{CE} = 20\text{V}, I_F = 0\text{mA}$	
Collector-Emitter Saturation Voltage	-X01	$V_{CE(SAT)}$			0.3	$I_F = 2\text{mA}, I_C = 0.5\text{mA}$ $I_F = 2\text{mA}, I_C = 1\text{mA}$ $I_F = 2\text{mA}, I_C = 2\text{mA}$	
	-X02	$V_{CE(SAT)}$			0.3		
	-X03	$V_{CE(SAT)}$			0.3		
Input to Output Resistance		R_{IO}	10^{11}			$V_{IN-OUT} = 1\text{kV}$	1
Input to Output Capacitance		C_{IO}		2.5	5	$F = 1\text{MHz}, V_{IN-OUT} = 0$	1
Rise Time (Phototransistor Operation)	-XX1	t_r		10	20	$V_{CC} = 10\text{V}, I_C = 5\text{mA},$ $R_L = 100\Omega$	
or	-XX2	or		10	25		
Fall Time	-XX3	t_f		10	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. $t_w = 100 \mu\text{s}$, 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}	1	2	mA
Supply Voltage	V_{CC}	5.0	20	V
Operating Temperature	T_A	-55	125	$^\circ\text{C}$