

05/13/2016

**Features:**

- Current transfer ratio: 150% typical
- 1000 Vdc isolation test voltage
- Base lead provided for conventional transistor biasing
- Low power consumption
- 150V  $BV_{CEO}$
- Radiation tolerant

**Applications:**

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

**DESCRIPTION**

Radiation tests performed on the 66099 optocoupler have shown that the electrical performance of the device after irradiation is an order of magnitude better than the 4N49 optocouplers. The **66192** has the same components and layout as the 66099 devices in a 10 pin, hermetically sealed gull wing package.

**ABSOLUTE MAXIMUM RATINGS** ( $t_a = 25^\circ\text{C}$  unless otherwise noted)

• **Input Diode.**

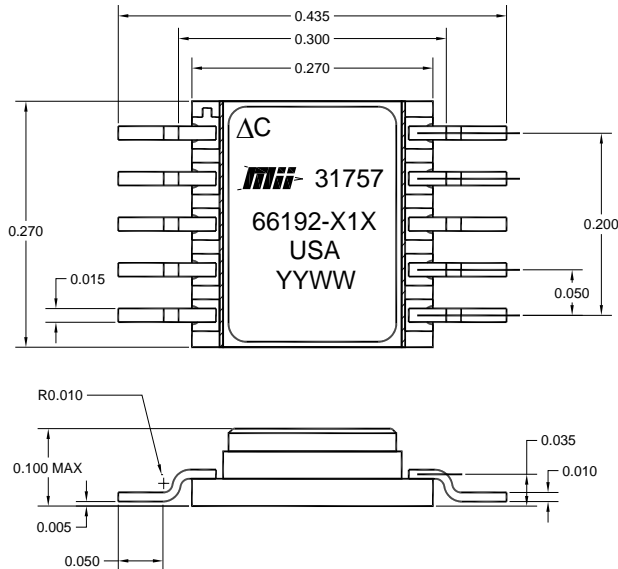
Continuous Forward Input Current .....	40 mA
Reverse Input Voltage .....	3 V
Input Power Dissipation (Note 2) .....	80 mW

• **Output Photodetector**

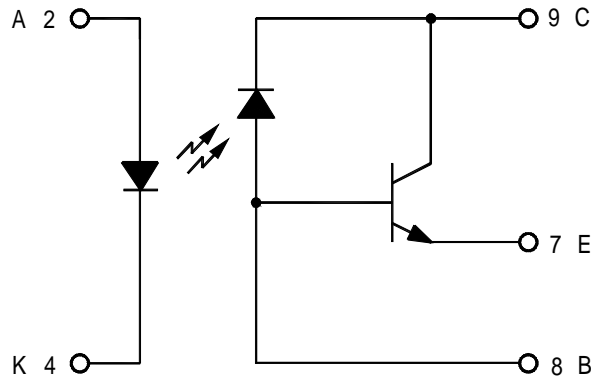
Continuous Collector Current .....	50 mA
Collector-Emitter Voltage .....	150 V
Emitter-Collector Voltage .....	4 V
Collector-Base Voltage .....	150 V
Power Dissipation (Note 3) .....	300 mW
Input to Output Isolation Voltage (Note 1) .....	1kVdc
Storage Temperature .....	$-65^\circ\text{C}$ to $+125^\circ\text{C}$
Operating Free-Air Temperature Range .....	$-55^\circ\text{C}$ to $+100^\circ\text{C}$
Lead Solder Temperature (10 seconds, 1/16" from case) .....	240°C

- Notes: 1) Measured with input diode leads shorted together and output leads shorted together.  
 2) Input power dissipation, derate linearly @ 1.10 mW/°C above 65/°C.  
 3) Output power dissipation, derate linearly @ 4.58 mW/°C above 65/°C.

Package Dimensions



Schematic Diagram



5-13-16

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

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Input Diode Static Reverse Current	$I_R$			100	$\mu\text{A}$	$V_R = 3\text{ V}$
Input Diode Static Forward Voltage	$V_F$	0.8		2	V	$I_F = 10\text{ mA}$

**OUTPUT TRANSISTOR CHARACTERISTICS** $T_A = 25^\circ\text{C}$  unless otherwise noted

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	150			V	$I_C = 100\ \mu\text{A}$ , $I_F = 0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	150			V	$I_C = 1\text{ mA}$ , $I_B = 0$ , $I_F = 0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	4			V	$I_E = 100\ \mu\text{A}$ , $I_F = 0$
Collector-Emitter Cutoff Current	$I_{CEO}$			250	nA	$V_{CE} = 20\text{ V}$

**COUPLED CHARACTERISTICS** $T_A = 25^\circ\text{C}$  unless otherwise noted

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Current Transfer Ratio	CTR	100			%	$V_{CE} = 1\text{ V}$ , $I_F = 10\text{ mA}$
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$			0.3	V	$I_F = 20\text{ mA}$ , $I_C = 10\text{ mA}$
Input-Output Isolation Current	$I_{ISO}$			100	nA	$V_{I-O} = 1000\text{ V}$
Rise Time	$t_r$			20	$\mu\text{s}$	$V_{CC} = 10\text{ V}$ , $I_F = 10\text{ mA}$ , $R_L = 100\ \Omega$
Fall Time	$t_f$			20	$\mu\text{s}$	$V_{CC} = 10\text{ V}$ , $I_F = 10\text{ mA}$ , $R_L = 100\ \Omega$

**RECOMMENDED OPERATING CONDITIONS:**

PARAMETERS	SYMBOL	MIN	MAX	UNITS
Input Current, Low Level	$I_{FL}$	0	100	$\mu\text{A}$
Input Current, High Level	$I_{FH}$	10	20	mA
Supply Voltage	$V_{CC}$	5.0	100	V
Operating Temperature	$T_A$	-55	+100	$^\circ\text{C}$

**SELECTION GUIDE**

PART NUMBER	PART DESCRIPTION
66192-010	Commercial
66192-111	Commercial plus Group A (19500 flow)
66192-113	Screened to TX Level
66192-115	Screened to TXV Level
66192-310	Screened to Space Level