

66226**6 PIN LCC RADIATION TOLERANT OPTOCOUPLER
WITH 850 nm LED**

01/17/2007

Features:

- Designed to meet or exceed MIL-PRF-19500 radiation requirements
- High Current Transfer Ratio - 200% typical
- 1000 Vdc electrical input to output isolation
- Base lead provided for conventional transistor biasing

Applications:

- Eliminate ground loops
- Level shifting
- Line receiver
- Switching power supplies
- Motor control

DESCRIPTION

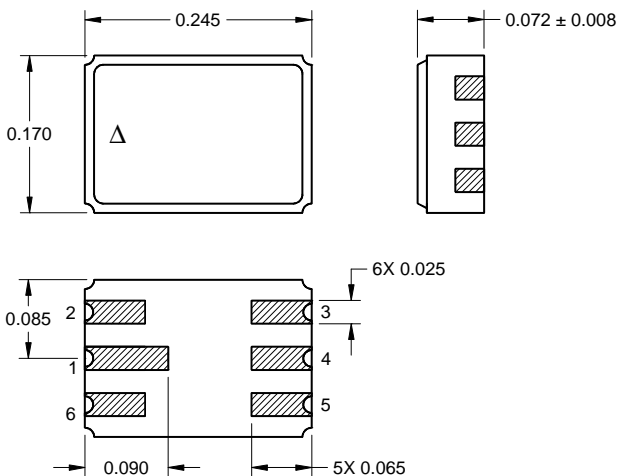
The **66226** optocoupler consists of an 850 nm GaAlAs LED optically coupled to a photodiode detector and a 2N2222 transistor all mounted in a hermetic 6 pin LCC package. This configuration has proven to be highly tolerant to both proton and total dose radiation. The 850 nm LED has proven to be more tolerant of operating temperatures over 100°C than the more commonly used 660 nm LED.

ABSOLUTE MAXIMUM RATINGS

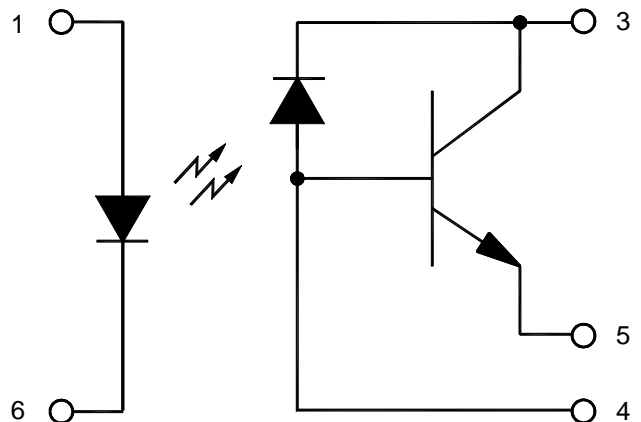
Input Diode Forward DC Current.....	50 mA
Input Power Dissipation (see Note 1).....	80 mW
Reverse Input Voltage	7 V
Collector-Emitter Voltage	40 V
Continuous Collector Current	50 mA
Continuous Transistor Power Dissipation (see Note 2).....	230 mW
Storage Temperature.....	-65°C to +150°C
Operating Free-Air Temperature Range.....	-55°C to +125°C
Lead Solder Temperature (10 seconds maximum).....	240°C

Notes:

1. Derate linearly @ 1.33 mW/°C above 65°C case.
2. Derate linearly @ 2.3 mW/°C above 25°C case.

Package Dimensions

ALL DIMENSIONS ARE IN INCHES.
ALL TOLERANCES ARE ± 0.005 UNLESS OTHERWISE SPECIFIED.

Schematic Diagram

66226

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6 PIN LCC RADIATION TOLERANT OPTOCOUPLER WITH 850 nm LED**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			1	μA	$V_R = 3\text{ V}$
Input Diode Static Forward Voltage	V_F			1.5	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-Emitter Breakdown Voltage	$V_{(BR)CEO}$	40			V	$I_C = 1\text{ mA}, I_B = 0, I_F = 0$
Collector-Emitter Cutoff Current	I_{CEO}			100	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	200		%	$V_{CE} = 1\text{ V}, I_F = 10\text{ mA}$
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			10	μs	$V_{CE} = 10\text{ V}, I_F = 10\text{ mA}, R_L = 100\ \Omega$
Fall Time	t_f			10	μs	$V_{CE} = 10\text{ V}, I_F = 10\text{ mA}, R_L = 100\ \Omega$

RECOMMENDED OPERATING CONDITIONS:

PARAMETER	SYMBOL	MIN	MAX	UNITS
Input Current, Low Level	I_{FL}	0	10	μA
Input Current, High Level	I_{FH}	1	20	mA
Operating Temperature	T_A	-55	125	$^\circ\text{C}$

ORDERING INFORMATION:

PART NUMBER	DESCRIPTION
66226-001	Commercial
66226-101	Screened