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

04/10/2013

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 switching 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℃ than the more commonly used 660 nm LED.

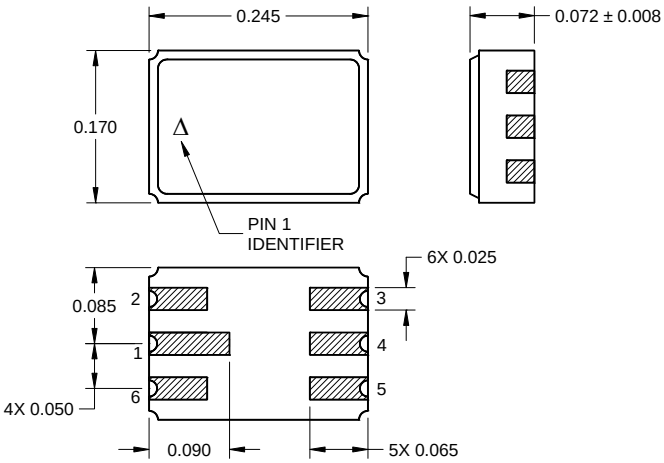
ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

Continuous Forward Input Current (Note 1)	50 mA
Reverse Input Voltage	7 V
Input Power Dissipation (Note 2)	80 mW
Continuous Collector Current	50 mA
Collector-Emitter Voltage	40 V
Emitter-Collector Voltage	5 V
Collector-Base Voltage	40 V
Power Dissipation (Note 3)	230 mW
Input to output Isolation Voltage (Note 4)	+1 kVdc
Storage Temperature	-55°C to +150°C
Operating Temperature	-55°C to +100°C
Lead Solder Temperature (10 seconds)	240°C

Notes:

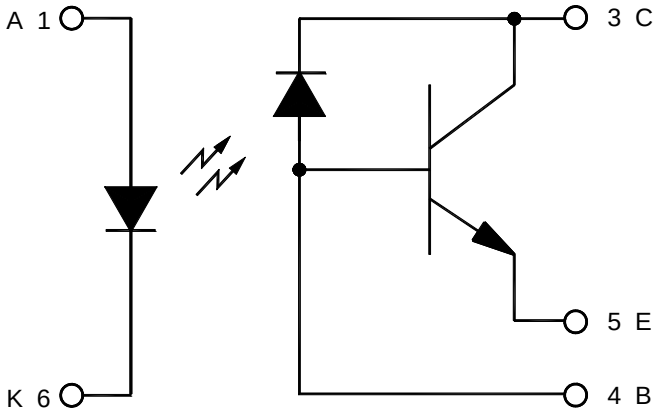
1 Derate linearly at 0.67 mA/°C.
2. Derate linearly at 0.8 mW/°C above 25°C.
3. Derate linearly at 2.3mW/°C above 25°C.
4. Measured with input diode leads shorted together and output leads shorted together.

Package Dimensions



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

Schematic Diagram



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ELECTRICAL CHARACTERISTICS
INPUT DIODE

T_A = 25°C unless otherwise specified.

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS	NOTE
Input Diode Static Reverse Current	I_R			1.0	µA	V_R = 3 V	
Input Diode Static Forward Voltage	V_F	0.8	1.4	1.6	V	I_F = 10 mA	

OUTPUT TRANSISTOR

T_A = 25°C unless otherwise specified.

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS	NOTE
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	40			V	I_C = 100 µA, I_F = 0	
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	40			V	I_C = 1 mA, I_B = 0, I_F = 0	
Emitter-Collector Breakdown Voltage	$V_{(BR)ECO}$	5			V	I_E = 100 µA, I_F = 0	
Collector-Emitter Dark Current +100°C	I_{CEO}			100 20	nA µA	V_{CE} = 20 V	

COUPLED CHARACTERISTICS

T_A = 25°C unless otherwise specified.

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS	NOTE
On-State Collector Current	$I_{C(ON)}$	10			mA	V_{CE} = 1 V, I_F = 10 mA	
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$			0.3	V	I_F = 20 mA, I_C=10 mA	
Input -Output Isolation Voltage	V_{I-O}			1000	V	I_{I-O} = 100 nA	1
Input to Output Capacitance	C_{I-O}		2.5	5	pF	f = 1 MHz, V_{I-O} = 0	1
Rise Time	t_r			5	µs	V_{CC} = 5 V, I_C = 2 mA, R_L = 100Ω	
Fall Time	t_f			7	µs	V_{CC} = 5 V, I_C = 2 mA, R_L = 100 Ω	

NOTES:

1) 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	µA
Input Current, High Level	I_{FH}	10	20	mA
Supply Voltage	V_{CE}	5	20	V
Operating Temperature	T_A	-55	+100	°C

SELECTION GUIDE

PART NUMBER	PART DESCRIPTION
66226-001	Commercial
66226-101	Screened to JAN level
66226-103	Screened to JANTX level
66226-105	Screened to JANTXV level
66226-300	Screened to Space level