

66266

6 PIN GULL WING
PROTON RADIATION TOLERANT OPTOCOUPLER
WITH 850 nm LED



05/31/2013

Features:

- High Reliability
- Base lead provided for conventional transistor biasing
- Rugged package
- Stability over wide temperature
- +1000 V electrical isolation

Applications:

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

DESCRIPTION

The 66266 is a single channel device electrically similar to the 4N49. This product has been designed to be more tolerant to proton radiation and uses an 850 nm LED for higher CTR and greater durability. The 66266 optocoupler is packaged in a hermetically sealed 6 pin gull wing package. This device can be supplied to customer specifications as well as tested and screened to the requirements of MIL-PRF-19500 up to space (JANS) level.

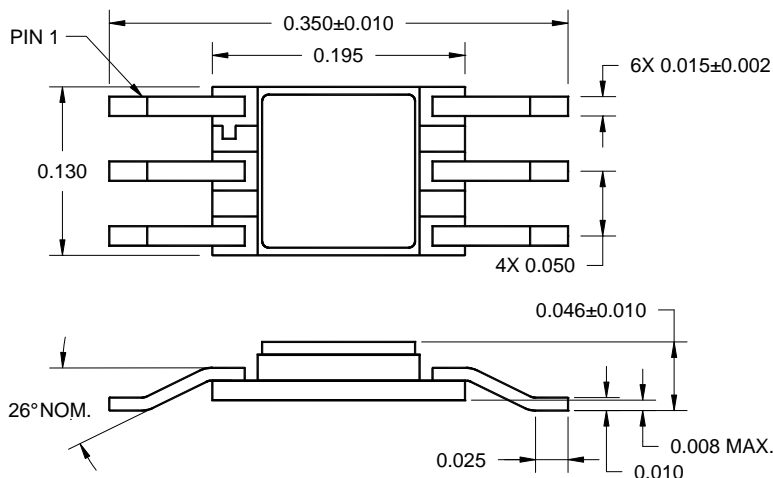
ABSOLUTE MAXIMUM RATINGS

Input to Output Voltage.....	1 kV
Emitter-Base Voltage.....	7 V
Collector-Emmitter Voltage (Value applies to emitter-base open-circuited & the input-diode equal to zero).....	70 V
Collector-Base Voltage.....	70 V
Reverse Input Voltage.....	7 V
Input Diode Continuous Forward Current at (or below) 25°C Free-Air Temperature (see note 1).....	50 mA
Peak Forward Input Current (Value applies for $t_w \leq 1 \mu s$, PRR < 300 pps).....	1 A
Continuous Collector Current.....	50 mA
Continuous Transistor Power Dissipation at (or below) 25°C Free-Air Temperature (see Note 2).....	300 mW
Storage Temperature.....	-65°C to +125°C
Operating Free-Air Temperature Range.....	-55°C to +125°C
Lead Solder Temperature (10 seconds max.).....	240°C

Notes:

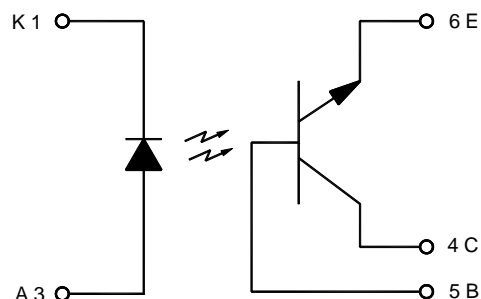
1. Derate linearly to 125°C free-air temperature at the rate of 0.50 mA/°C above 25°C.
2. Derate linearly to 125°C free-air temperature at the rate of 3 mW/°C above 25 °C.

Package Dimensions



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

Schematic Diagram



A - ANODE
B - BASE
C - COLLECTOR
E - EMITTER
K - CATHODE

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ELECTRICAL CHARACTERISTICST_A = 25°C unless otherwise specified.

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS	NOTE
Input Diode Static Reverse Current	I _R			1	μA	V _R = 3 V	
Input Diode Static Forward Voltage -55°C	V _F	0.8		1.7	V	I _F = 10 mA	
Input Diode Static Forward Voltage +25°C	V _F	0.8	1.35	1.7	V	I _F = 10 mA	
Input Diode Static Forward Voltage +100°C	V _F	0.8		1.7	V	I _F = 10 mA	

OUTPUT TRANSISTORT_A = 25°C unless otherwise specified.

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS	NOTE
Collector-Base Breakdown Voltage	V _{(BR)CBO}	45			V	I _C = 100 μA, I _B = 0, 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 _C = 0 mA, I _E = 100 μA, I _F = 0	
Off-State Collector Current	I _{CEO}			100	nA	V _{CE} = 20 V, I _F = 0 mA, I _B = 0	
+100°C				100	μA	V _{CE} = 20 V, I _F = 0 mA, I _B = 0	

COUPLED CHARACTERISTICST_A = 25°C unless otherwise specified.

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS	NOTE
On State Collector Current	I _{C(ON)}	4.0			mA	V _{CE} = 5 V, I _F = 1 mA, I _B = 0	
On State Collector Current +100°C	I _{C(ON)}	4.0			mA	V _{CE} = 5.0 V, I _F = 2 mA, I _B = 0	
On State Collector Current -55°C	I _{C(ON)}	4.0			mA	V _{CE} = 5 V, I _F = 2 mA, I _B = 0	
Collector-Emitter Saturation Voltage	V _{CE(SAT)}			0.3	V	I _F = 2 mA, I _C = 1 mA	
Input to Output Internal Resistance	R _{IO}	10 ¹¹			Ω	V _{IN-OUT} = 1000 V	1
Input to Output Capacitance	C _{IO}		2.5	5	pF	f = 1MHz, V _{IN-OUT} = 1000 V	1
Rise Time-Phototransistor Operation	t _r		5	10	μs	V _{CC} = 10 V, I _F = 10 mA, R _L = 100 Ω, I _B = 0	
Fall Time-Phototransistor Operation	t _f		5	10	μs	V _{CC} = 10 V, I _F = 10 mA, R _L = 100 Ω, I _B = 0	

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 μs duty cycle ≤ 1%).

RECOMMENDED OPERATING CONDITIONS:

PARAMETER	SYMBOL	MIN	MAX	UNITS
Input Current, Low Level	I _{FL}	0	90	μA
Input Current, High Level	I _{FH}	2	10	mA
Supply Voltage	V _{CE}	5	25	V
Operating Temperature	T _A	-55	125	°C

SELECTION GUIDE

PART NUMBER	PART DESCRIPTION
66266-001	Commercial
66266-101	Commercial with Group A
66266-103	Screened to TX Level
66266-105	Screened to TXV Level
66266-300	Screened to Space Level
66266-303	Screened to Space Level with 96 hours HTRB and 125°C steady state life test

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