

66287

**TRANSISTOR OUTPUT GULL WING
DUAL CHANNEL OPTOCOUPLERS**



OPTOELECTRONIC PRODUCTS
DIVISION

06/06/06

Features:

- High Reliability
- Hermetic Ceramic package
- SMT mounting / SOIC-8 footprint
- Proton Radiation tolerant
- +1000V electrical isolation

Applications:

- Eliminate ground loops
- Level shifting
- Line receiver
- Switching circuits
- Monitor and Detection circuits

DESCRIPTION

The **66287** contains 2 proton tolerant LEDs optically coupled to 2 silicon planar phototransistors. The optocoupler is in a hermetic ceramic Gullwing-8 package with a standard SOIC-8 footprint with 0.050" lead spacing. The package eliminates the need for thru-hole mounting and is well suited for high density applications.

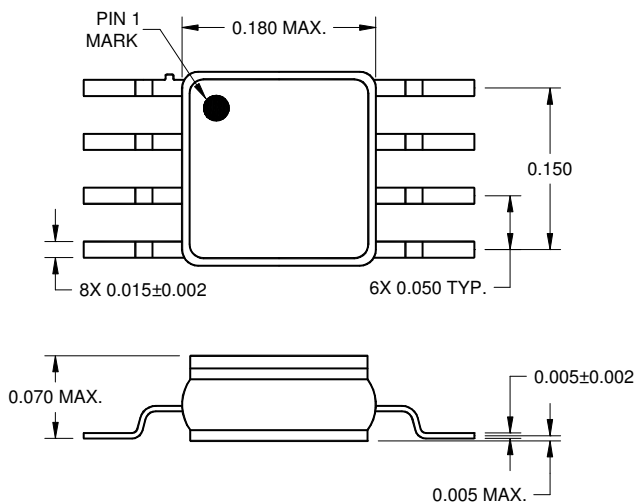
ABSOLUTE MAXIMUM RATINGS

Input to Output Voltage	1000V
Emitter-Collector Voltage	7V
Collector-Emitter Voltage (Value applies to emitter-base open-circuited & the input-diode equal to zero)	30V
Reverse Input Voltage	6V
Input Diode Continuous Forward Current at (or below) 65°C Free-Air Temperature (see note 1)	60mA
Peak Forward Input Current (Value applies for $t_w \leq 1\mu s$, PRR < 300 pps)	1A
Continuous Collector Current	150mA
Continuous Transistor Power Dissipation at (or below) 25°C Free-Air Temperature (see Note 2)	150mW
Storage Temperature	-65°C to +150°C
Operating Free-Air Temperature Range	-55°C to +125°C
Lead Solder Temperature (10 seconds max.)	240°C

Notes:

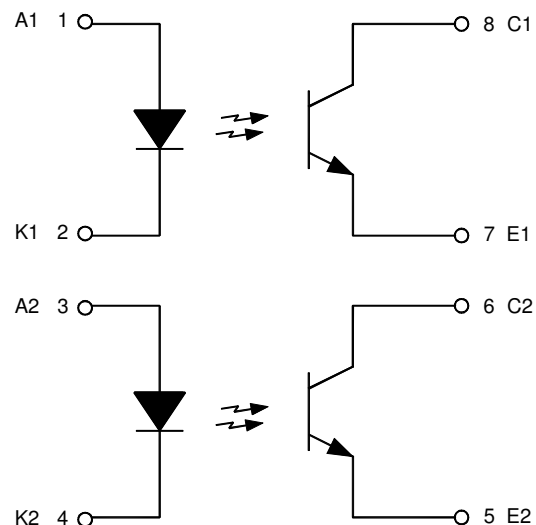
1. Derate linearly above +65°C free-air temperature at the rate of 1.15 mA/°C.
2. Derate linearly above +25°C free-air temperature at the rate of 1.76 mW/°C.

Package Dimensions



GULLWING 8 LEAD PACKAGE
ALL DIMENSIONS ARE IN INCHES

Schematic Diagram



ELECTRICAL CHARACTERISTICS

T_A = 25°C unless otherwise specified.

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Input Diode Static Reverse Current	I _R			100	μA	V _R = 6V
Input Diode Static Forward Voltage	V _F			1.3	V	I _F = 1.0mA
Reverse Breakdown Voltage	B _{VR}	5			V	I _R = 10μA
Peak Wavelength	λ _p		850		nm	I _F = 1.0mA
Input Diode Capacitance	C _{IN}		18		PF	V = 0V, f = 1MHz

OUTPUT TRANSISTOR

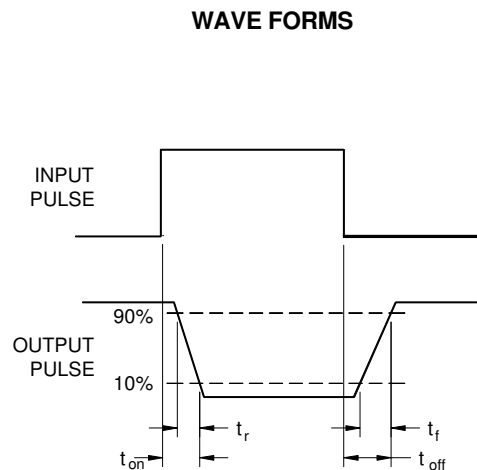
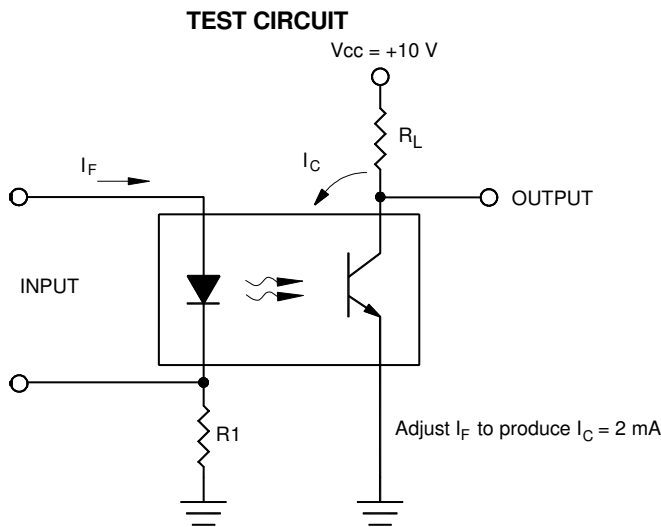
T_A = 25°C unless otherwise specified.

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	30			V	I _C = 1mA, I _B = 0, I _F = 0
Emitter-Collector Breakdown Voltage	V _{(BR)ECO}	7			V	I _C = 10μA
Collector-Emitter Dark Current	I _{CEO1}			50	nA	V _{CE} = 10V, I _F = 0mA
Collector-Emitter Dark Current +100° C	I _{CEO2}			1	μA	V _{CE} = 10V, T _A = +100° C

COUPLED CHARACTERISTICS

T_A = 25°C unless otherwise specified.

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
On State Collector Current	I _{C(ON)}	1			mA	V _{CE} = 5V, I _F = 1.0mA
Collector-Emitter Saturation Voltage	V _{CE(SAT)}			0.4	V	I _F = 1.0mA, I _C = 100μA
Isolation Resistance	R _{ISO}	10 ¹¹			Ω	V _{IN-OUT} = 500V
Input to Output Capacitance	C _{IO}		0.2		pF	V _{IN-OUT} = 0V f = 1MHz
Turn-on Time	T _{on}		7.0		μs	V _{CE} = 5V, I _F = 2mA, R _L = 100Ω
Turn-off Time	T _{off}		5.5		μs	V _{CE} = 5V, I _F = 2mA, R _L = 100Ω
Rise Time	t _r		3.0		μs	V _{CE} = 10V, I _F = 2mA, R _L = 100Ω
Fall Time	t _f		4.5		μs	V _{CE} = 10V, I _F = 2mA, R _L = 100Ω



Switching Time Test Circuit and Waveforms

66287

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TRANSISTOR OUTPUT GULL WING DUAL CHANNEL OPTOCOUPLER**RECOMMENDED OPERATING CONDITIONS:**

PARAMETER	SYMBOL	MIN	MAX	UNITS
Input Current, Low Level	I _{FL}	0	1	μA
Input Current, High Level	I _{FH}	1	20	mA
Supply Voltage	V _{CE}	5	30	V
Operating Temperature	T _A	-55	100	°C

SELECTION GUIDE

PART NUMBER	PART DESCRIPTION
66287-001	Dual Channel optocoupler, commercial
66287-101	Dual Channel optocoupler -55 to +100°C Screened