

66005 16kV HIGH VOLTAGE ISOLATOR WITH PHOTOTRANSISTOR
or PHOTODARLINGTON OUTPUT, CERAMIC PACKAGE



12/01/03

Features:

- High Reliability
- Rugged package
- Stability over wide temperature
- +16kV electrical isolation

Applications:

- Grid current modulator
- Power Supply Feedback
- Switching between power supplies
- Patient station isolation

DESCRIPTION

The **66005**, high voltage isolator is provided with a GaAlAs light emitting diode and, by choice of outputs, either a silicon phototransistor or a photodarlington, hermetically sealed in TO-46 packages and mounted in a high reliability, hermetically sealed, ceramic package. Available as commercial, screened or full Military temperature range (-55° to +125°C). **Contact the factory for special custom or multi-channel requirements!**

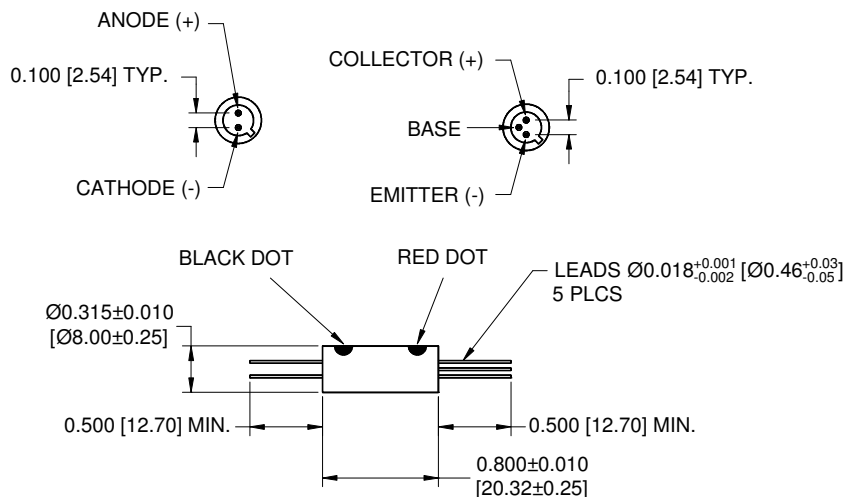
ABSOLUTE MAXIMUM RATINGS

Collector-Emitter Voltage (Note 3).....	50 V
Emitter-Collector Voltage.....	7 V
Continuous Collector Current.....	50 mA
Continuous Transistor Power Dissipation (Note 1).....	250 mW
Input to Output Isolation Voltage.....	16 kV
Input Diode Continuous Forward Current.....	100 mA
Reverse Input Voltage.....	2 V
Continuous LED Power Dissipation (Note 1).....	250 mW
Storage Temperature.....	-65°C to +150°C
Operating Free-Air Temperature Range.....	-55°C to +125°C
Lead Solder Temperature (10 seconds, 1/16" from case).....	240°C

Notes:

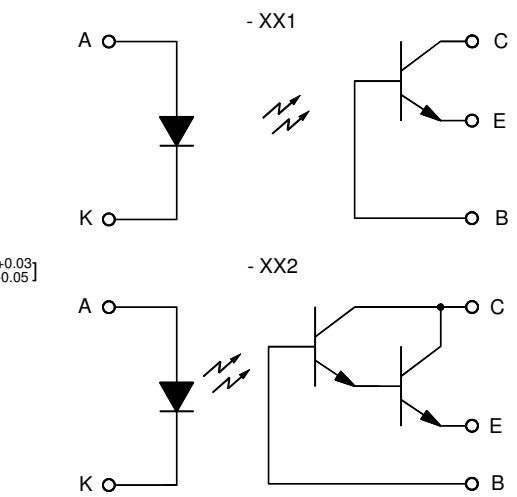
1. Derate linearly to 125°C free-air temperature at the rate of 2.5 mW/°C above 25°C.
2. Derate linearly to 125°C free-air temperature at the rate of 1.0 mA/°C above 25°C.
3. Value applies to emitter-base open-circuited & the input-diode equal to zero.

Package Dimensions



ALL DIMENSIONS ARE IN INCHES [MILLIMETERS]

Schematic Diagram



NOTE:
BLACK DOT INDICATES ANODE OF LED.
RED DOT INDICATES COLLECTOR OF TRANSISTOR.

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ELECTRICAL CHARACTERISTICST_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 = 2V
Input Diode Static Forward Voltage	V _F		1.15	1.8	V	I _F = 20mA
Reverse Breakdown Voltage	B _{VR}	2	10		V	I _R = 100μA
Input Diode Capacitance	C _{IN}		25		pF	V = 0V, f = 1MHz

OUTPUT TRANSISTORT_A = 25°C unless otherwise specified.

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	35			V	I _C = 1mA, I _B = 0, I _F = 0
Collector-Emitter Dark Current	I _{CEO}			75 300	nA nA	V _{CE} = 10V, I _F = 0mA

COUPLED CHARACTERISTICST_A = 25°C unless otherwise specified.

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Current Transfer Ratio	CTR	15 300			%	V _{CE} = 5V, I _F = 10mA
Collector-Emitter Saturation Voltage	V _{CE(SAT)}			0.5 1.2	V	I _F = 50mA, I _C = 1mA
DC Isolation Voltage	V _{ISO}	16			kV	
Rise Time	t _r		15 25		μs	V _{CC} = 5V, I _F = 16mA, R _L = 100Ω
Fall Time	t _f		15 25		μs	V _{CC} = 5V, I _F = 16mA, R _L = 100Ω

RECOMMENDED OPERATING CONDITIONS:

PARAMETER	SYMBOL	MIN	MAX	UNITS
Input Current	I _{FH}	16	50	mA
Supply Voltage	V _{CE}	5	10	V
Operating Temperature	T _A	-55	125	°C

SELECTION GUIDE

PART #	PART DESCRIPTION
66005-001	Transistor output (-55° to +125°C)
66005-101	Transistor output, Screened
66005-011	Transistor output, Commercial
66005-002	Darlington output (-55° to +125°C)
66005-102	Darlington output, Screened
66005-012	Darlington output, Commercial