

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



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

In the **66005**, high voltage isolation is provided with a GaAlAs light emitting diode and by your choice of outputs, either silicon phototransistor or photodarlington, hermetically sealed in TO-46 packages and mounted in a high reliability, hermetically sealed, ceramic package. Available in commercial (0° to +70°C), extended temperature range (-40° to +85°C) and full Military temperature range (-55° to +125°C). **Contact the factory for special custom or multi-channel requirements!**

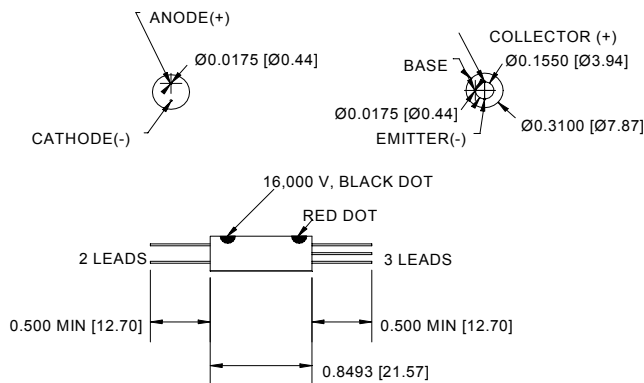
ABSOLUTE MAXIMUM RATINGS

Collector-Emitter Voltage (Value applies to emitter-base open-circuited & the input-diode equal to zero)	35V
Emitter-Collector Voltage.....	7V
Continuous Collector Current	50mA
Continuous Transistor Power Dissipation	(see Note 1) 250mW
Input to Output Isolation Voltage	16kV
Input Diode Continuous Forward Current at (or below) 65°C Free-Air Temperature	100mA
Reverse Input Voltage	2V
Continuous LED Power Dissipation	(see Note 1) 250mW
Storage Temperature.....	-65°C to +150°C
Operating Free-Air Temperature Range	-55°C to +125°C
Lead Solder Temperature (1/16" from case for 10 seconds max.).....	240°C

Notes:

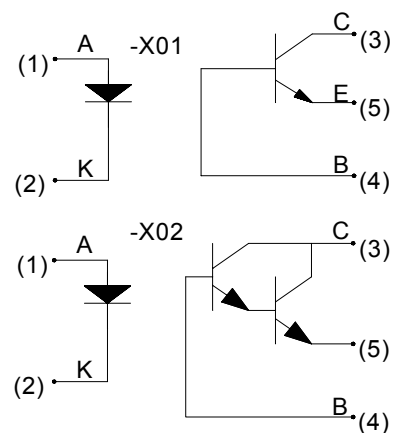
1. Derate linearly to 125°C free-air temperature at the rate of 2.45 mW/°C.

Package Dimensions



ALL DIMENSIONS ARE IN INCHES [MILLIMETERS] NOMINAL

Schematic Diagram



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

ELECTRICAL CHARACTERISTICS

T_A = 25°C unless otherwise specified.

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Input Diode Static Reverse Current 66005-X01 66005-X02	I _R			100	μA	V _R = 2V
Input Diode Static Forward Voltage 66005-X01 66005-X02	V _F		1.15	1.8	V	I _F = 20mA
Reverse Breakdown Voltage 66005-X01 66005-X02	B _V R	2	10		V	I _R = 100μA
Input Diode Capacitance 66005-X01 66005-X02	C _{IN}		25		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}	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 CHARACTERISTICS

T_A = 25°C unless otherwise specified.

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Current Transfer Ratio 66005-X01 66005-X02	CTR	15 300			%	V _{CE} = 5V, I _F = 10mA
Collector-Emitter Saturation Voltage 66005-X01 66005-X02	V _{CE(SAT)}			0.5 1.2	V	I _F = 50mA, I _C = 1mA
DC Isolation Voltage 66005-X01 66005-X02	V _{ISO}	16 16			kV	
Rise Time 66005-X01 66005-X02	t _r		15 25		μs	V _{CC} = 5V, I _F = 16mA, R _L = 100Ω
Fall Time 66005-X01 66005-X02	t _f		15 25		μs	V _{CC} = 5V, I _F = 16mA, R _L = 100Ω

RECOMMENDED OPERATING CONDITIONS:

PARAMETER	SYMBOL	MIN	MAX	UNITS
Input Current, High Level	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, military operating range (-55° to +125°C)
66005-101	Transistor output, full mil-temp (-55° to +125°C) with 100% device screening (on discrete components)
66005-011	Transistor output, commercial version Isolator (0° to 70°C)
66005-002	Darlington output, military operating range (-55° to +125°C)
66005-102	Darlington output, full mil-temp (-55° to +125°C) with 100% device screening (on discrete components)
66005-012	Darlington output, commercial version Isolator (0° to 70°C)