

**66229 CONSTANT CURRENT TRANSFER RATIO, SINGLE CHANNEL OPTOCOUPLERS, SCREENED TO JAN, JANTX, JANTXV**



10/17/02 Rev B

**Features:**

- $V_{in}$  (volts) =  $I_{out}$  (mA)
- $V_{in}/I_{out}$  is constant within 4.0% over temperature
- Minimum component count for high reliability
- Rugged package (TO-5 )
- Internal amplifier for regulation
- Rugged output transistor

**Applications:**

- Eliminate ground loops
- Level shifting of signals
- Line receiver
- Power supply feedback loops
- Motor control
- Signal Isolation

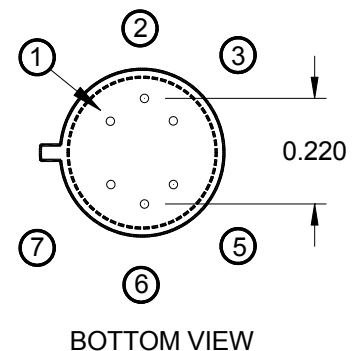
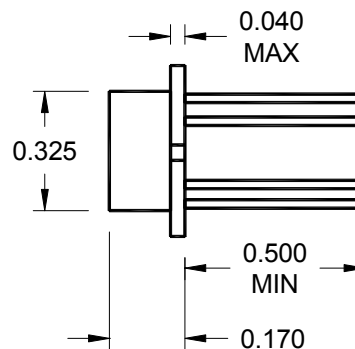
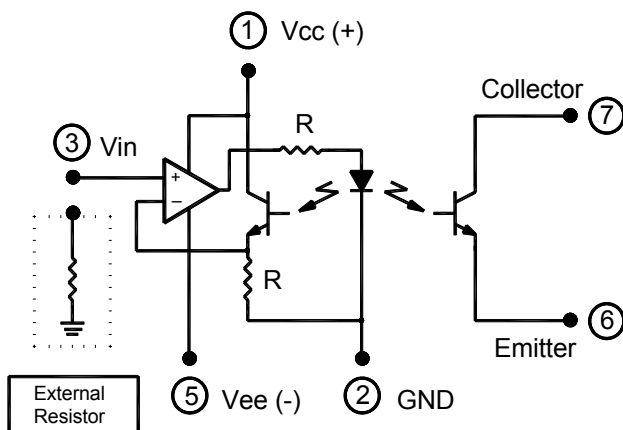
**DESCRIPTION**

A Gallium Aluminum Arsenide (GaAlAs) infrared LED controlled by a high gain op amp illuminates two matched phototransistors, one of which provides feedback to the op amp allowing a consistent output from the other. The regulation provides protection against output signal degradation normally associated with time, temperature and even radiation. The 66229 can be tested to customer specifications, as well as to MIL-PRF-19500 JAN, JANTX, JANTXV and JANS quality levels. CTR degradation worries are gone when you use the 66229.

**ABSOLUTE MAXIMUM RATINGS**

Input to Output Voltage.....	1000V
Emitter-Collector Voltage.....	7V
Collector-Emitter Voltage.....	40V
Reverse Input Voltage.....	0.1V
Continuous Output Phototransistor Collector Current.....	10mA
Power Supply Voltage.....	+15Volts
Negative Supply Voltage.....	-15Volts
Storage Temperature.....	-65°C to +125°C
Operating Free-Air Temperature Range.....	-55°C to +125°C
Lead Solder Temperature (1/16" (1.6mm) from case for 10 seconds).....	240°C

**Notes:**



**66229****CONSTANT CURRENT TRANSFER RATIO, SINGLE OPTOCOUPLERS  
SCREENED TO JAN, JANTX, JANTXV**

10/17/02 Rev B

**ELECTRICAL CHARACTERISTICS**  $T_A = 25^\circ\text{C}$  Unless otherwise specified

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Input Signal	$V_{in}$	0		10	volts	$V_{cc} = +15$ volts, $V_{EE} = -5V$

**OUTPUT TRANSISTOR**  $T_A = 25^\circ\text{C}$  Unless otherwise specified

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	40			V	$I_{in} = 0$ , $V_{cc} = 0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	40			V	$I_{in} = 0$ , $V_{cc} = 0$
Emitter-Collector Breakdown Voltage	$V_{(BR)EBO}$	7			V	$I_{in} = 0$ , $V_{cc} = 0$

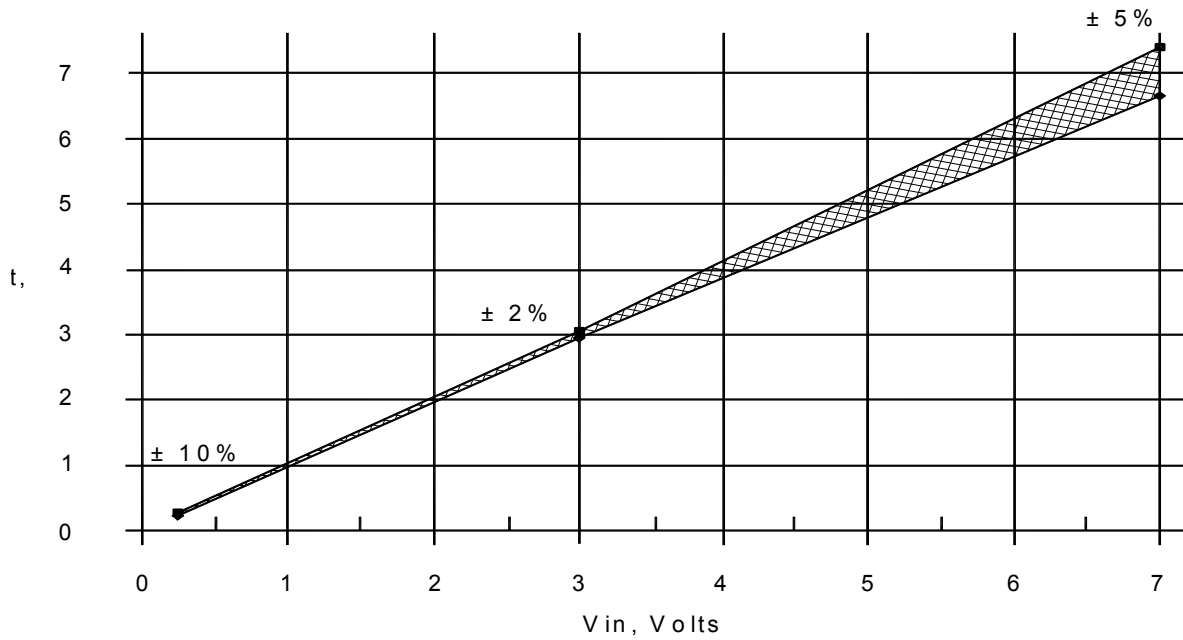
**COUPLED CHARACTERISTICS**  $T_A = 25^\circ\text{C}$  Unless otherwise specified

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Supply Voltage	$V_{cc}$	7	12	15	VDC	
Supply Voltage	$V_{EE}$	-3	-5	-15	VDC	
On State Collector Current	$I_{C(ON)}$	0.5		5	mA	$V_{cc} = +15$ volts, $V_{in} = .5 < 5$ volts
Off State Collector Current	$I_{C(OFF)}$	0		100	$\mu\text{A}$	$V_{cc} = 15$ volts, $V_{in} = 0$ volts
Collector – Emitter Saturation Voltage	$V_{ce(sat)}$		0.3	0.5	Volts	$V_{cc} = 15$ volts, $V_{in} = 5$ volts
Rise time/ Fall time	$t_r/t_f$		5.0		$\mu\text{S}$	$V_{cc} = 15$ volts, $V_{in} = 5$ volts
Input to Output Resistance	$R_{I-O}$	$10^{11}$				$V_{IN-OUT} = 1\text{kV}$
Input to Output Capacitance	$C_{I-O}$			5	pF	$f = 1\text{MHz}$ , $V_{IN-OUT} = 1\text{kV}$
Delay Time $T_{DR}$ & $T_{DF}$	$t_d$		5.0		$\mu\text{S}$	$V_{cc} = 12V$

**RECOMMENDED OPERATING CONDITIONS:**

PARAMETER	SYMBOL	MIN	MAX	UNITS
Input Current, Low Level	$I_{FL}$	0	100	$\mu\text{A}$
Input Current, High Level	$I_{FH}$	2	10	mA
Supply Voltage	$V_{CC}$	+5	+15	VDC
Supply Voltage	$V_{EE}$	-15	-3	VDC

Input - Output Linearity  
Over 0.250 V to 7.00 V Input



VARIATION OVER TEMPERATURE  
( $V_{in} = 3.0$  V)

