

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

Mii
OPTOELECTRONIC PRODUCTS
DIVISION

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

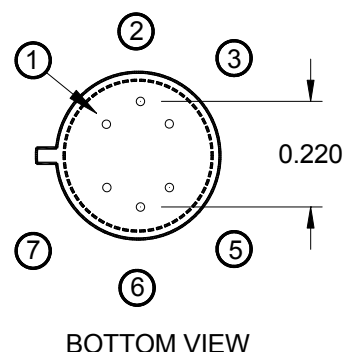
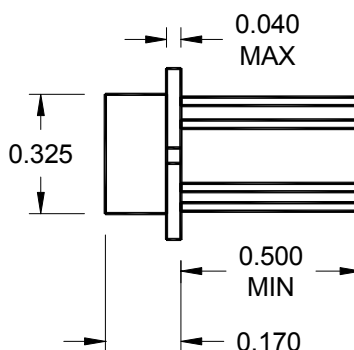
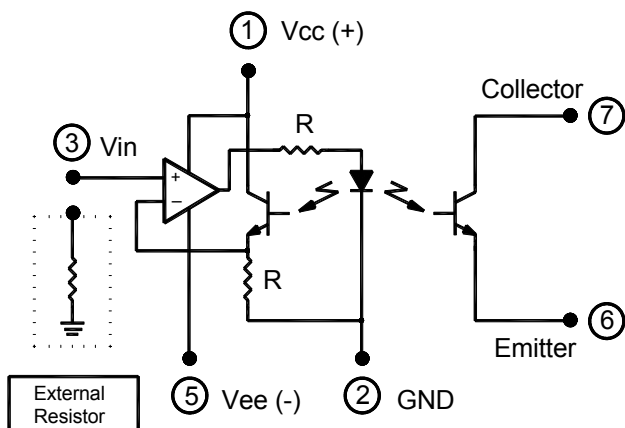
DESCRIPTION

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 OPTOCOUPLEDERS
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

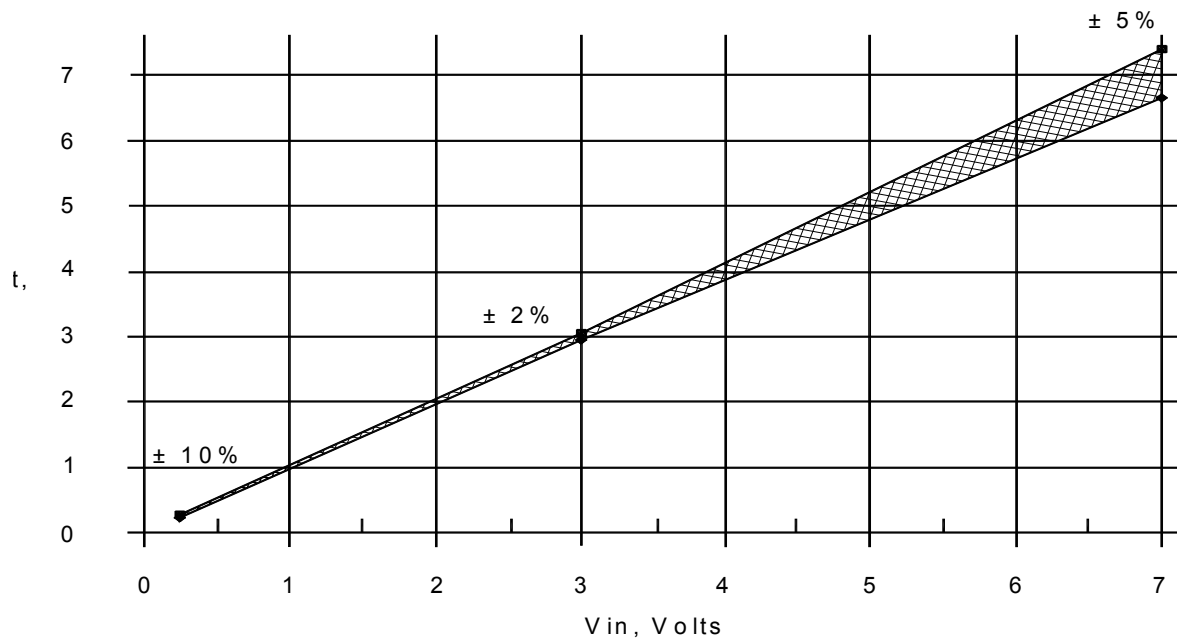
PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	40			V	$I_{in} = 0$, $V_{cc} = 0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	40			V	$I_{in} = 0$, $V_{cc} = 0$
Emitter-Collector Breakdown Voltage	$V_{(BR)EBO}$	7			V	$I_{in} = 0$, $V_{cc} = 0$

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	μA	$V_{cc} = 15$ 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		μS	$V_{cc} = 15$ 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		μS	$V_{CC} = 12V$

RECOMMENDED OPERATING CONDITIONS:

PARAMETER	SYMBOL	MIN	MAX	UNITS
Input Current, Low Level	I_{FL}	0	100	μA
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 InputVARIATION OVER TEMPERATURE
($V_{in} = 3.0$ V)