

Photon Coupled Isolator CNY48

Ga As Infrared Emitting Diode & NPN Silicon Photo-Darlington Amplifier

The GE Solid State CNY48 consists of a gallium arsenide, infrared emitting diode coupled with a silicon photo-darlington amplifier in a dual-in-line package. This device is also available in Surface-Mount packaging.

absolute maximum ratings: (25°C)

INFRARED EMITTING DIODE

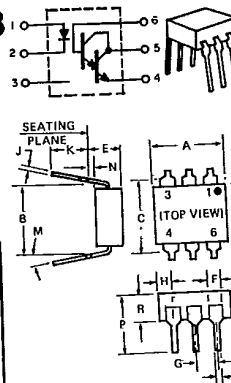
Power Dissipation	*100	milliwatts
Forward Current (Continuous)	60	milliamps
Forward Current (Peak)	3	ampere
(Pulse width 1 μ s 300 pps)		
Reverse Voltage	3	volts

*Derate 1.33mW/°C above 25°C ambient.

PHOTO-DARLINGTON

Power Dissipation	**150	milliwatts
V _{CEO}	30	volts
V _{CBO}	30	volts
V _{EBO}	6	volts
Collector Current (Continuous)	100	milliamps

**Derate 2.0mW/°C above 25°C ambient.



SYMBOL	MILLIMETERS		INCHES		NOTES
	MIN.	MAX.	MIN.	MAX.	
A	8.38	8.89	.330	.350	1
B	7.62 REF.	—	.300 REF.	—	2
C	—	8.64	—	.340	
D	.406	5.08	.016	.200	3
E	—	5.08	—	.200	
F	1.01	1.78	.040	.070	
G	2.28	2.80	.090	.110	
H	—	2.16	—	.085	4
I	—	—	—	.012	
J	.203	.305	.008	.012	
K	2.54	—	.100	—	
L	—	15	—	.15	
M	.381	—	.015	—	
N	—	9.53	—	.375	
P	2.92	3.43	.115	.135	
R	6.10	6.86	.240	.270	

NOTES.

1. INSTALLED POSITION LEAD CENTERS.
2. OVERALL INSTALLED DIMENSION.
3. THESE MEASUREMENTS ARE MADE FROM THE SEATING PLANE.
4. FOUR PLACES.

TOTAL DEVICE

Storage Temperature -65 to 150°C
 Operating Temperature -55 to 100°C
 Lead Soldering Time (at 260°C) 10 seconds
 Surge Isolation Voltage (Input to Output).
 2120_(peak) 1500V_(RMS)
 Steady-State Isolation Voltage (Input to Output).
 1270V_(peak) 900V_(RMS)

individual electrical characteristics (25°C)

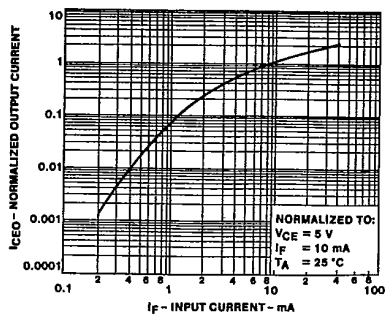
INFRARED EMITTING DIODE	TYP.	MAX.	UNITS
Forward Voltage (I _F = 10mA)	1.1	1.3	volts
Reverse Current (V _R = 3V)	—	10	microamps
Capacitance (V = 0, f = 1 MHz)	50	—	picofarads

PHOTO-DARLINGTON	MIN.	TYP.	MAX.	UNITS
Breakdown Voltage—V _{(BR)CEO} (I _C = 10mA, I _F = 0)	30	—	—	volts
Breakdown Voltage—V _{(BR)CBO} (I _C = 100 μ A, I _F = 0)	30	—	—	volts
Breakdown Voltage—V _{(BR)EBO} (I _F = 100 μ A, I _F = 0)	6	—	—	volts
Collector Dark Current—I _{CEO} (V _{CE} = 10V, I _F = 0)	—	5	100	nanoamps
Capacitance (V _{CE} = 10V, f = 1 MHz)	—	6	—	picofarads

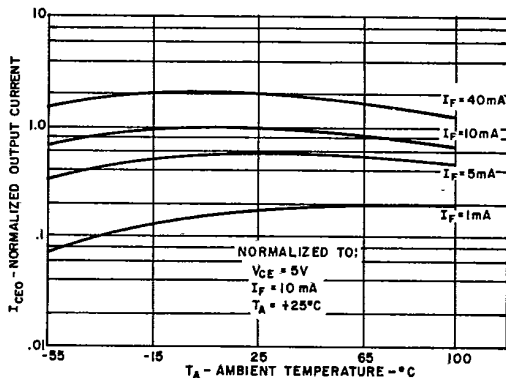
coupled electrical characteristics (25°C)

	MIN.	TYP.	MAX.	UNITS
DC Current Transfer Ratio (I _F = 10mA, V _{CE} = 1V)	600	—	—	%
Saturation Voltage—Collector to Emitter (I _F = 1mA, I _C = 2mA)	—	—	.8	volts
(I _F = 5mA, I _C = 10mA)	—	—	.8	volts
(I _F = 10mA, I _C = 60mA)	—	—	1.0	volts
Isolation Resistance (V _{IO} = 500V _{DC})	100	—	—	gigaohms
Input to Output Capacitance (V _{IO} = 0, f = 1MHz)	—	—	2	picofarads
Switching Speeds: (V _{CE} = 10V, I _C = 10mA, R _L = 100 Ω)	—	125	—	microseconds
On-Time	—	100	—	microseconds
Off-Time	—	—	—	—

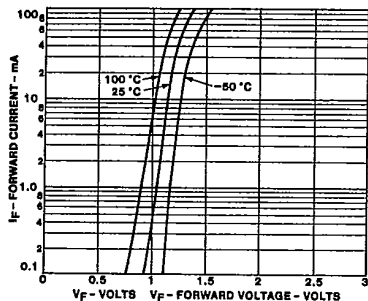
TYPICAL CHARACTERISTICS



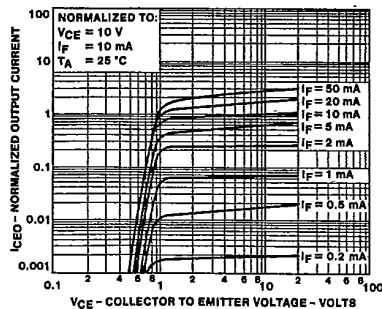
1. OUTPUT CURRENT VS INPUT CURRENT



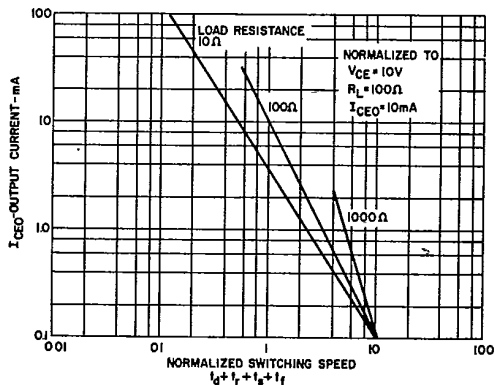
2. OUTPUT CURRENT VS TEMPERATURE



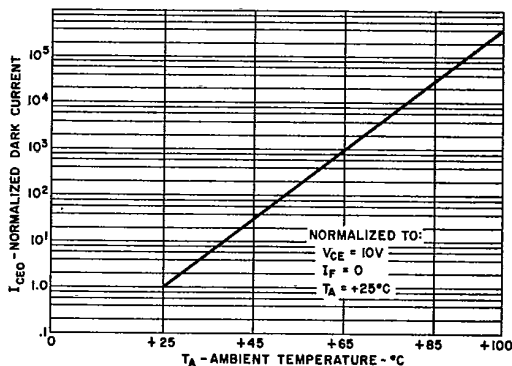
3. INPUT CHARACTERISTICS



4. OUTPUT CHARACTERISTICS



5. SWITCHING SPEED VS OUTPUT CURRENT



6. NORMALIZED DARK CURRENT VS TEMPERATURE