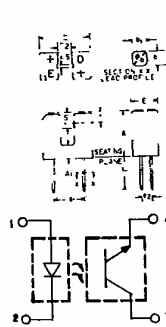


# Photon Coupled Interrupter Module CNY36

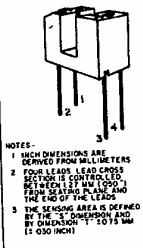
The GE Solid State CNY36 is a gallium arsenide infrared emitting diode coupled with a silicon phototransistor in a plastic housing. The gap in the housing provides a means of interrupting the signal with tape, cards, shaft encoders, or other opaque material, switching the output transistor from an "ON" into an "OFF" state.

### FEATURES:

- Low cost, plastic module
- Non-contact switching
- Fast switching speeds
- Solid state reliability
- I/O compatible with integrated circuits



SYMBOL	MILLIMETERS		DINCHES		NOTES
	MIN	MAX	MIN	MAX	
A	10.7	11.0	.422	.433	
A1	3.0	3.2	.119	.125	
Φa	.600	.750	.024	.030	2
Φb	50 NOM		200 NOM		2
D1	11.6	12.0	.457	.472	
D2	3.0	3.3	.119	.129	
H1	6.9	7.5	.272	.295	
H2	2.3	2.8	.091	.110	
E	6.15	6.35	.243	.248	
L	8.00		.315		
S	.85	1.0	.034	.039	
S1	3.45	3.75	.136	.147	
T	2.4 NOM		.103 NOM		3



NOTES -  
 1 DIMENSIONS ARE DERIVED FROM MILLIMETERS  
 2 FROM LEAD LEAD CROSS SECTION IS CONTROLLED BETWEEN 15° AND 20° FROM SEATING PLANE AND THE END OF THE LEAD.  
 3 THE SENSING AREA IS DEFINED BY THE "S" DIMENSION AND BY DIMENSION "T" 10.75 MM (1.050 INCH)

absolute maximum ratings: (25°C) (unless otherwise specified)

Storage and Operating Temperature -55° to 85°C. Lead Soldering Time (at 260°C) 10 seconds.

INFRARED EMITTING DIODE			PHOTO-TRANSISTOR		
Power Dissipation	*100	milliwatts	Power Dissipation	**150	milliwatts
Forward Current (Continuous)	60	milliamps	Collector Current (Continuous)	100	milliamps
Forward Current (peak, 100µs, 1% duty cycle)	1	amp	V <sub>CEO</sub>	30	volts
Reverse Voltage	3	volts	V <sub>ECO</sub>	5	volts
*Derate 1.67mW/°C above 25°C ambient			**Derate 2.5mW/°C above 25°C ambient		

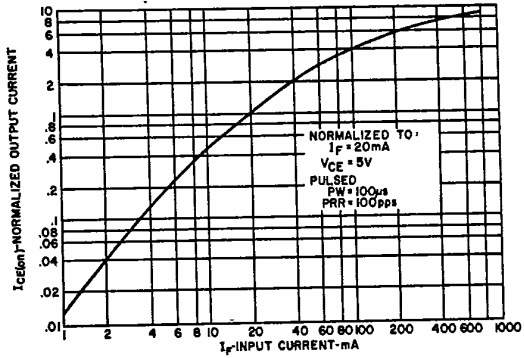
### individual electrical characteristics (25°C)

INFRARED EMITTING DIODE	TYP.	MAX.	UNITS	PHOTO-TRANSISTOR	MIN.	MAX.	UNITS
Forward Voltage (I <sub>F</sub> = 10 mA)	1.2	1.7	volts	Breakdown Voltage V <sub>(BR)CEO</sub> (I <sub>C</sub> = 10 mA)	30	-	volts
Reverse Current (V <sub>R</sub> = 2V)	-	10	µamps	Breakdown Voltage V <sub>(BR)ECO</sub> (I <sub>E</sub> = 100µA)	5	-	volts
Capacitance (V = 0, f = 1 Mhz)	150	-	pf	Collector Dark Current I <sub>CEO</sub> (V <sub>CE</sub> = 10V, I <sub>F</sub> = 0, H=0)	-	100	nA

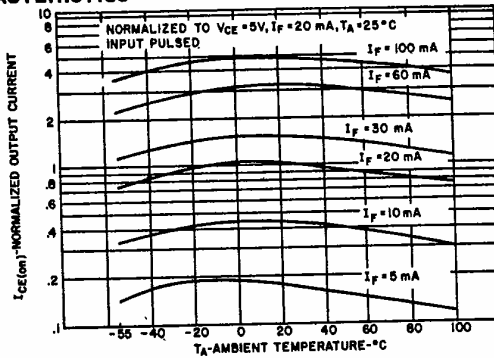
### coupled electrical characteristics (25°C)

	MIN.	TYP.	MAX.	UNITS
Output Current (I <sub>F</sub> = 20mA, V <sub>CE</sub> = 10V)	200	400	-	µamps
Saturation Voltage (I <sub>F</sub> = 20mA, I <sub>C</sub> = 25µA)	-	0.2	0.4	volts
Switching Speeds (V <sub>CE</sub> = 10V, I <sub>C</sub> = 2mA, R <sub>L</sub> = 100Ω)				
On Time (t <sub>d</sub> + t <sub>r</sub> )	-	5	-	µsec
Off Time (t <sub>s</sub> + t <sub>f</sub> )	-	5	-	µsec

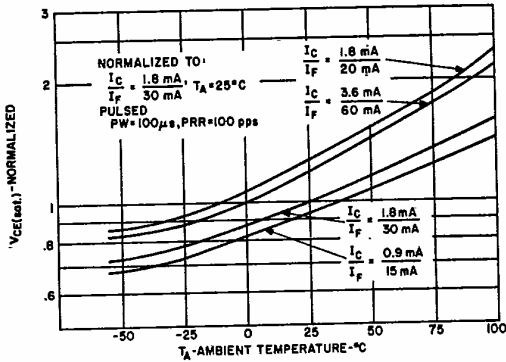
### TYPICAL CHARACTERISTICS



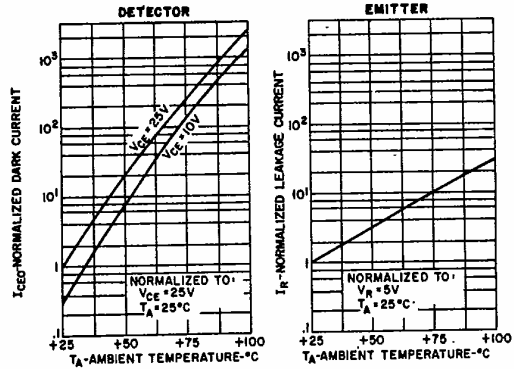
1. OUTPUT CURRENT VS. INPUT CURRENT



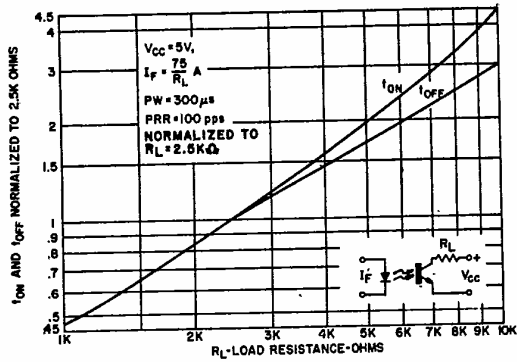
2. OUTPUT CURRENT VS. TEMPERATURE



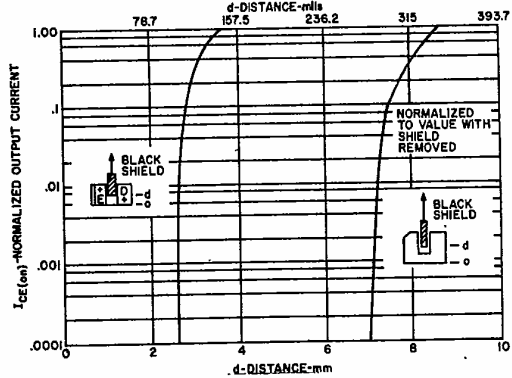
3.  $V_{CE(sat)}$  VS. TEMPERATURE



4. LEAKAGE CURRENTS VS. TEMPERATURE



5. SWITCHING SPEED VS.  $R_L$



6. OUTPUT CURRENT VS. DISTANCE