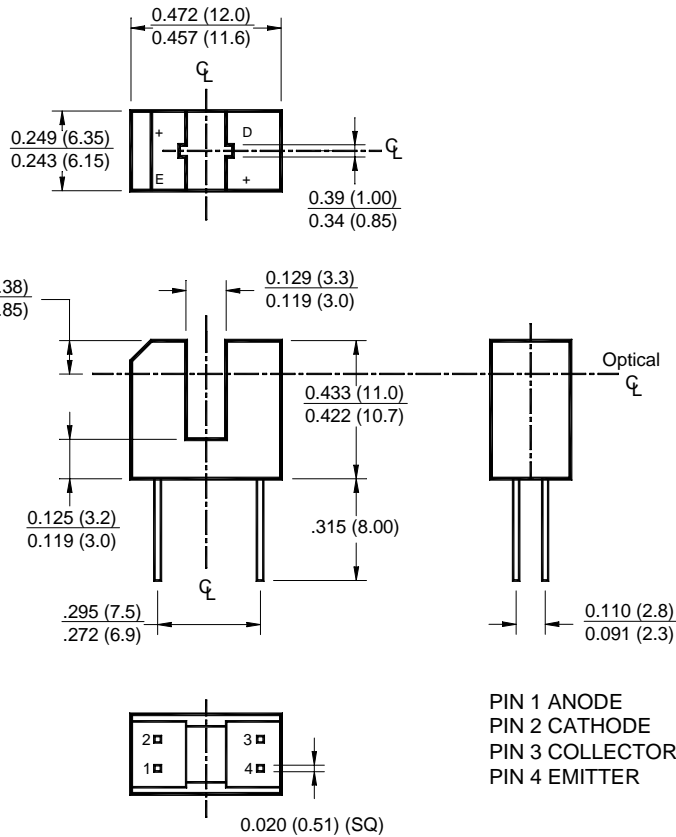
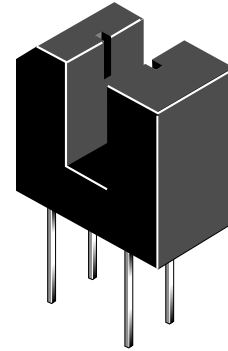


PACKAGE DIMENSIONS

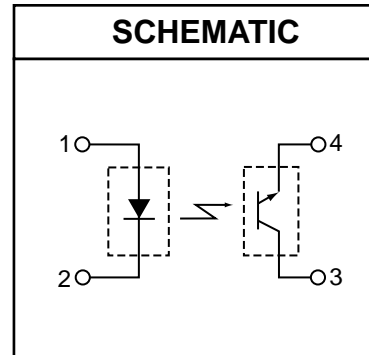


NOTES:

1. Dimensions for all drawings are in inches (mm).
2. Tolerance of $\pm .010 (.25)$ on all non-nominal dimensions unless otherwise specified.



SCHEMATIC



DESCRIPTION

The 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 from an "ON" to an "OFF" state.

FEATURES

- Opaque housing
- Low cost
- .035" apertures
- European "Pro Electron" registered

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Rating	Unit
Operating Temperature	T_{OPR}	-55 to +85	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 to +85	$^\circ\text{C}$
Soldering Temperature (Iron) ^(3,4 and 5)	T_{SOL-I}	240 for 5 sec	$^\circ\text{C}$
Soldering Temperature (Flow) ^(3 and 4)	T_{SOL-F}	260 for 10 sec	$^\circ\text{C}$
INPUT (EMITTER)			
Continuous Forward Current	I_F	60	mA
Reverse Voltage	V_R	3	V
Power Dissipation ⁽¹⁾	P_D	100	mW
OUTPUT (SENSOR)			
Collector to Emitter Voltage	V_{CEO}	30	V
Emitter to Collector Voltage	V_{ECO}	5.0	V
Power Dissipation ($T_C = 25^\circ\text{C}$) ⁽¹⁾	P_D	150	mW

ELECTRICAL / OPTICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)(All measurements made under pulse condition)

PARAMETER	TEST CONDITIONS	SYMBOL	DEVICES	MIN	TYP	MAX	UNITS
INPUT (EMITTER)							
Forward Voltage	$I_F = 10 \text{ mA}$	V_F	All	—	—	1.7	V
Reverse Leakage Current	$V_R = 2 \text{ V}$	I_R	All	—	—	1.0	μA
OUTPUT (SENSOR)							
Emitter to Collector Breakdown	$I_E = 100 \mu\text{A}, E_e = 0$	BV_{ECO}	All	5.0	—	—	V
Collector to Emitter Breakdown	$I_C = 10 \text{ mA}, E_e = 0$	BV_{CEO}	All	30	—	—	V
Collector to Emitter Leakage	$V_{CE} = 10 \text{ V}, E_e = 0$	I_{CEO}	All	—	—	100	nA
COUPLED							
On-State Collector Current	$I_F = 20 \text{ mA}, V_{CE} = 10 \text{ V}$	$I_{C(ON)}$	All	2.0	—	—	mA
Saturation Voltage	$I_F = 20 \text{ mA}, I_C = 25 \mu\text{A}$	$V_{CE(SAT)}$	All	—	—	0.40	V
Turn-On Time	$I_F = 30 \text{ mA}, V_{CC} = 5 \text{ V}, R_L = 2.5 \text{ k}\Omega$	t_{on}	All	—	5	—	μs
Turn-Off Time	$I_F = 30 \text{ mA}, V_{CC} = 5 \text{ V}, R_L = 2.5 \text{ k}\Omega$	t_{off}	All	—	5	—	μs

NOTE:

1. Derate power dissipation linearly 1.67 mW/ $^\circ\text{C}$ above 25 $^\circ\text{C}$.
2. Derate power dissipation linearly 2.50 mW/ $^\circ\text{C}$ above 25 $^\circ\text{C}$.
3. RMA flux is recommended.
4. Methanol or isopropyl alcohols are recommended as cleaning agents.
5. Soldering iron tip 1/16" (1.6mm) minimum from housing.

Figure 1. Output Current vs. Input Current

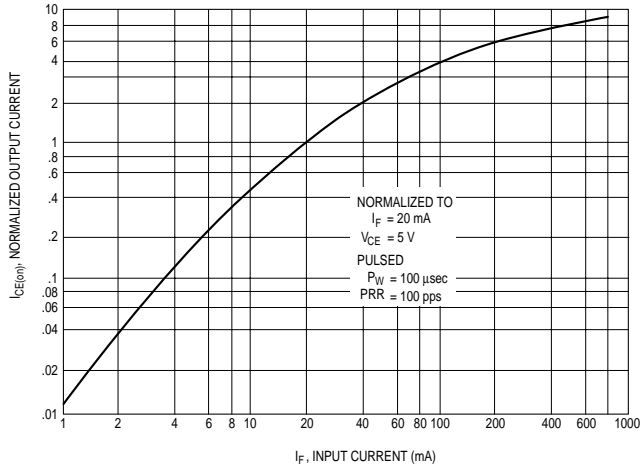


Figure 2. Output Current vs. Temperature

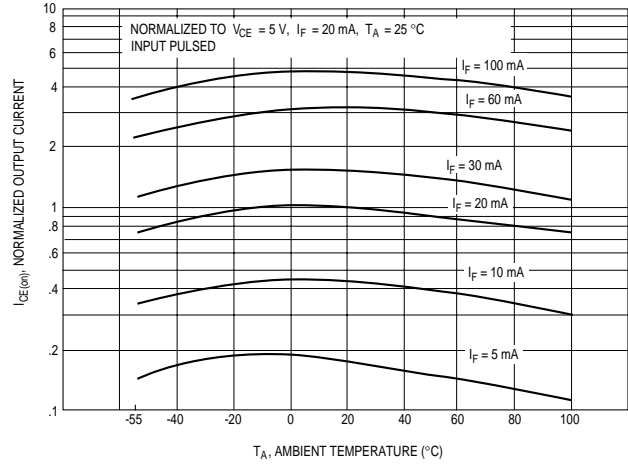


Figure 3. V_{CE(SAT)} vs. Temperature

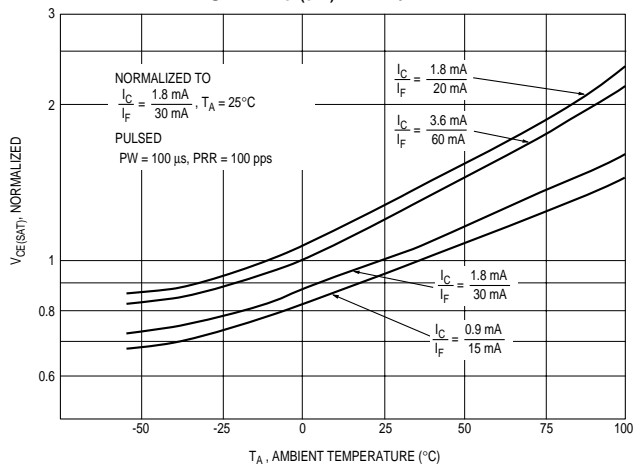


Figure 4. Leakage Current vs. Temperature

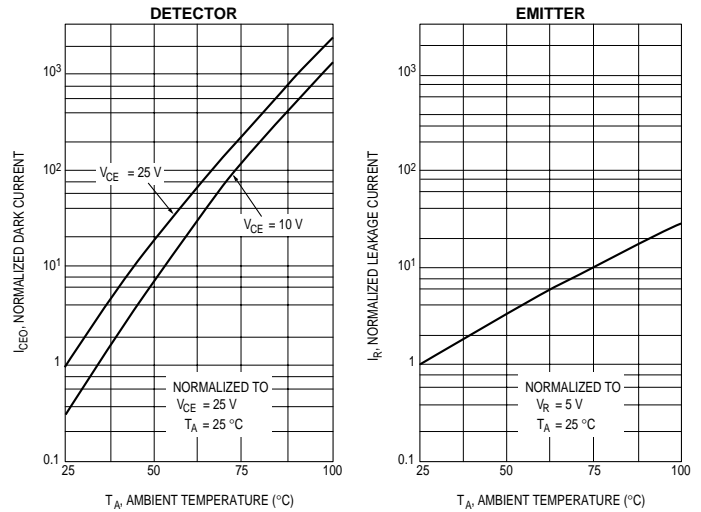


Figure 5. Switching Speed vs. R_L

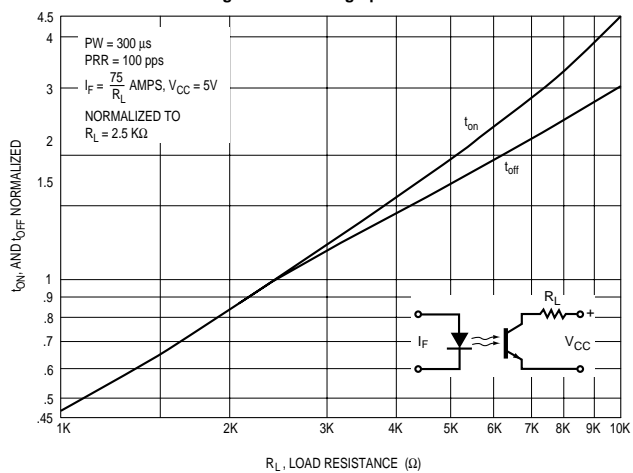
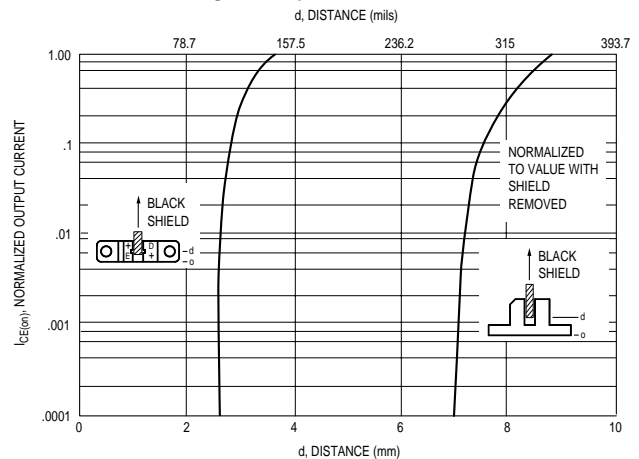


Figure 6. Output Current vs. Distance



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