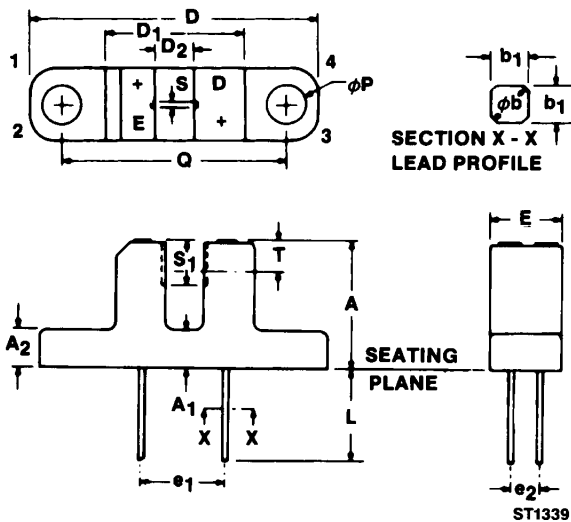
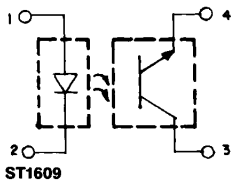


PACKAGE DIMENSIONS



SYMBOL	MILLIMETERS		INCHES		NOTES
	MIN.	MAX.	MIN.	MAX.	
A	10.7	11.0	.422	.433	
A ₁	3.0	3.2	.119	.125	
A ₂	3.0	3.2	.119	.125	
φb	.600	.750	.024	.030	2
b ₁	.50 NOM.		.020 NOM.		2
D	24.3	24.7	.957	.972	
D ₁	11.0	12.0	.457	.472	
D ₂	3.0	3.3	.119	.129	
e ₁	6.9	7.5	.272	.295	
e ₂	2.3	2.8	.091	.110	
E	.615	6.35	.243	.249	
L	6.00		.315		
φp	3.2	3.4	.126	.133	
Q	18.9	19.2	.745	.755	
S	.85	1.0	.034	.039	
S ₁	3.45	3.75	.136	.147	
T	2.6 NOM.		.103 NOM.		3

PACKAGE OUTLINE



DESCRIPTION

The CNY28 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.

NOTES:

1. INCH DIMENSIONS ARE DERIVED FROM MILLIMETERS.
2. FOUR LEADS. LEAD CROSS SECTION IS CONTROLLED BETWEEN 1.27mm (.050") FROM SEATING PLANE AND THE END OF THE LEADS.
3. THE SENSING AREA IS DEFINED BY THE "S" DIMENSION AND BY DIMENSION "T" ±0.75mm (±.030 INCH).

FEATURES

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



SLOTTED OPTICAL SWITCH

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ Unless Otherwise Specified)	
Storage Temperature	-55°C to $+85^\circ\text{C}$
Operating Temperature	-55°C to $+85^\circ\text{C}$
Soldering:	
Lead Temperature (Iron)	240°C for 5 sec. ^(3,4,5)
Lead Temperature (Flow)	260°C for 10 sec. ^(3,4)
INPUT DIODE	
Continuous Forward Current	60 mA
Reverse Voltage	3.0 Volts
Power Dissipation	100 mW ⁽¹⁾
OUTPUT TRANSISTOR	
Collector-Emitter Voltage	30 Volts
Emitter-Collector Voltage	5 Volts
Power Dissipation	150 mW ⁽²⁾

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ Unless Otherwise Specified)						
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNITS	TEST CONDITIONS
INPUT DIODE						
Forward Voltage	V_F	—		1.7	V	$I_F = 10\text{ mA}$
Reverse Leakage Current	I_R	—		10	μA	$V_R = 2\text{ V}$
OUTPUT TRANSISTOR						
Emitter-Collector Breakdown	BV_{ECO}	5.0		—	V	$I_E = 100\ \mu\text{A}$, $E_e=0$
Collector-Emitter Breakdown	BV_{CEO}	30		—	V	$I_C = 10\text{ mA}$, $E_e=0$
Collector-Emitter Leakage	I_{CEO}	—		100	nA	$V_{CE} = 10\text{ V}$, $E_e=0$
COUPLED						
On-State Collector Current	$I_{C(ON)}$	0.20		—	mA	$I_F = 20\text{ mA}$, $V_{CE} = 10\text{ V}$
Saturation Voltage	$V_{CE(SAT)}$	—		0.40	V	$I_F = 20\text{ mA}$, $I_C = 25\ \mu\text{A}$
Turn-On Time	t_{on}		5		μS	$I_F = 30\text{ mA}$, $V_{CC} = 5\text{ V}$, $R_L = 2.5\text{K}\Omega$
Turn-Off Time	t_{off}		5		μS	$I_F = 30\text{ mA}$, $V_{CC} = 5\text{ V}$, $R_L = 2.5\text{K}\Omega$

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

TYPICAL CHARACTERISTICS

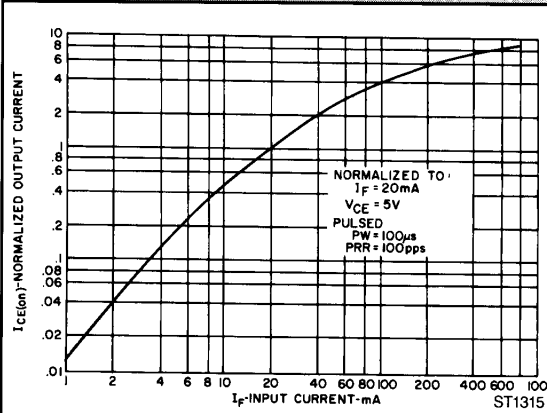


Fig. 1. Output Current vs. Input Current

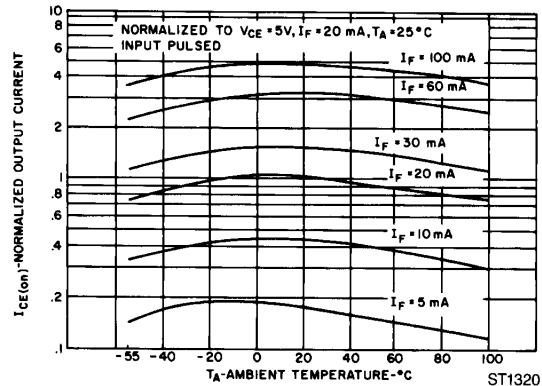


Fig. 2. Output Current vs. Temperature

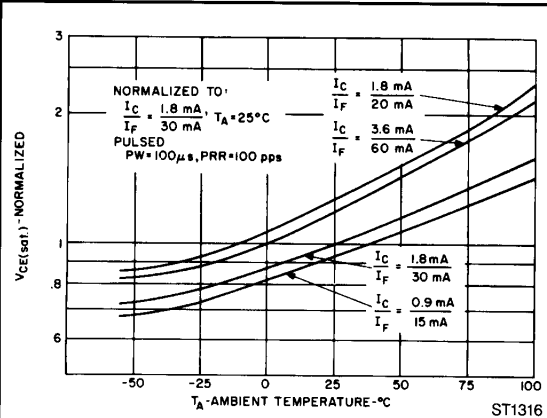


Fig. 3. $V_{CE(SAT)}$ vs. Temperature

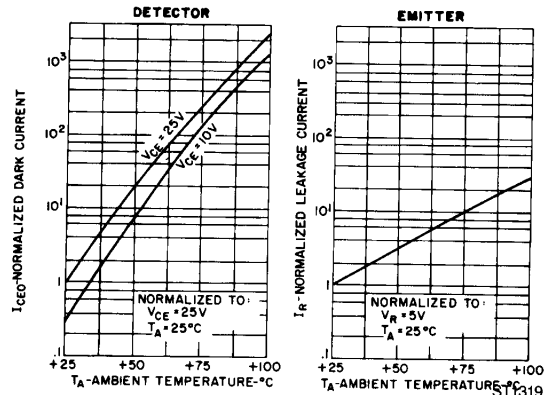


Fig. 4. Leakage Current vs. Temperature

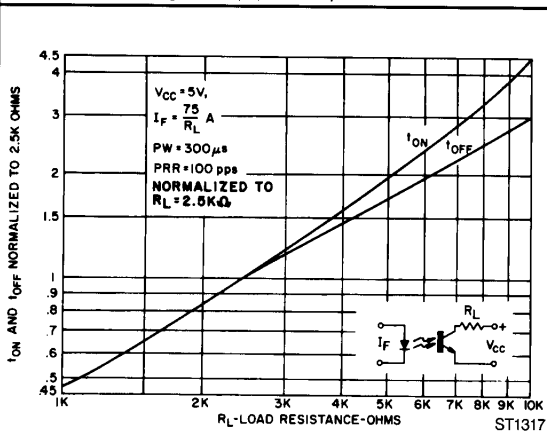


Fig. 5. Switching Speed vs. R_L

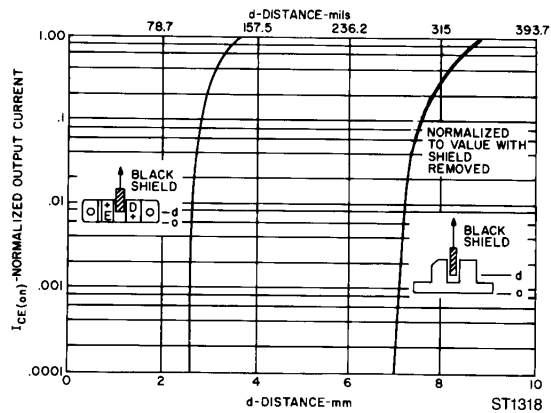


Fig. 6. Output Current vs. Distance