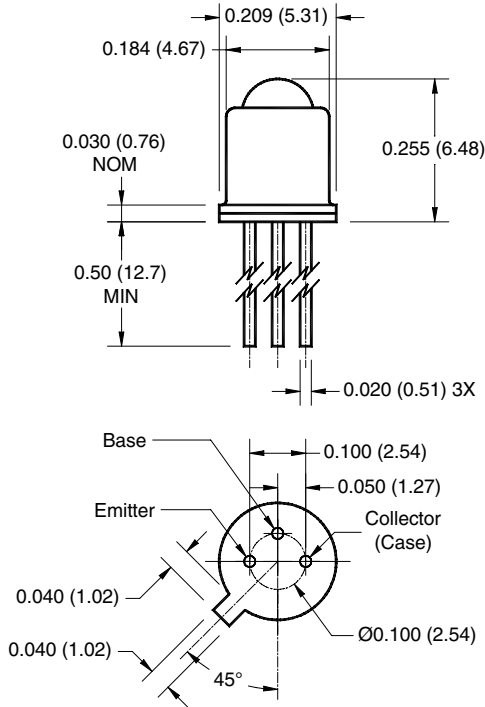


PACKAGE DIMENSIONS

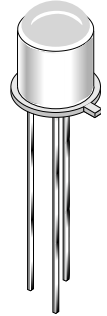


NOTES:

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

FEATURES

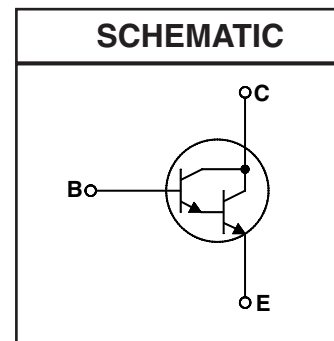
- Hermetically sealed package
- Narrow reception angle
- European "Pro Electron" registered



DESCRIPTION

- The BPW38 is a silicon photodarlington mounted in narrow angle TO-18 package.

SCHEMATIC



1. Derate power dissipation linearly 3.00 mW/°C above 25°C ambient.
2. Derate power dissipation linearly 6.00 mW/°C above 25°C case.
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.
6. As long as leads are not under any stress or spring tension.
7. Light source is a GaAs LED emitting light at a peak wavelength of 940 nm.

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

Parameter	Symbol	Rating	Unit
Operating Temperature	T_{OPR}	-65 to +125	°C
Storage Temperature	T_{STG}	-65 to +150	°C
Soldering Temperature (Iron) ^(3,4,5 and 6)	T_{SOL-I}	240 for 5 sec	°C
Soldering Temperature (Flow) ^(3,4 and 6)	T_{SOL-F}	260 for 10 sec	°C
Collector-Emitter Voltage	V_{CEO}	25	V
Collector-Base Voltage	V_{CBO}	25	V
Emitter-Base Voltage	V_{EBO}	12	V
Power Dissipation ($T_A = 25^\circ\text{C}$) ⁽¹⁾	P_D	300	mW
Power Dissipation ($T_C = 25^\circ\text{C}$) ⁽²⁾	P_D	600	mW

ELECTRICAL / OPTICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$) (All measurements made under pulse conditions)						
PARAMETER	TEST CONDITIONS	SYMBOL	MIN	TYP	MAX	UNITS
Collector-Emitter Breakdown	$I_C = 10\text{ mA}$, $E_e = 0$	BV_{CEO}	25	—	—	V
Emitter-Base Breakdown	$I_E = 100\ \mu\text{A}$, $E_e = 0$	BV_{EBO}	12	—	—	V
Collector-Base Breakdown	$I_C = 100\ \mu\text{A}$, $E_e = 0$	BV_{CBO}	25	—	—	V
Collector-Emitter Leakage	$V_{CE} = 12\text{ V}$, $E_e = 0$	I_{CEO}	—	—	100	nA
Reception Angle at 1/2 Sensitivity		Θ	—	± 8	—	Deg.
On-State Collector Current	$E_e = 0.125\text{ mW/cm}^2$ $V_{CE} = 5\text{ V}^{(7)}$	$I_{C(ON)}$	7.5	—	—	mA
Rise Time	$I_C = 10\text{ mA}$, $V_{CC} = 10\text{ V}$ $R_L = 100\ \Omega$	t_r	—	300	—	μs
Fall Time	$I_C = 10\text{ mA}$, $V_{CC} = 10\text{ V}$ $R_L = 100\ \Omega$	t_f	—	250	—	μs

TYPICAL PERFORMANCE CURVES

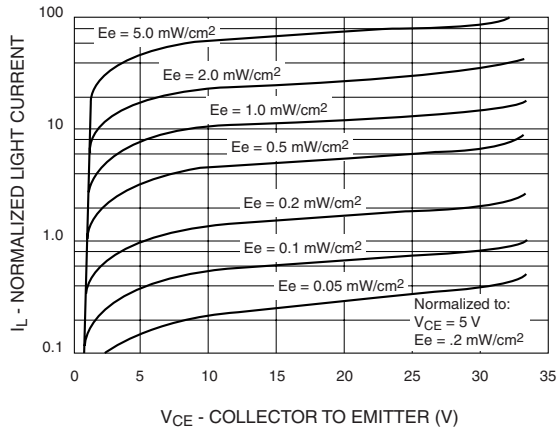


Fig. 1 Light Current vs. Collector to Emitter Voltage

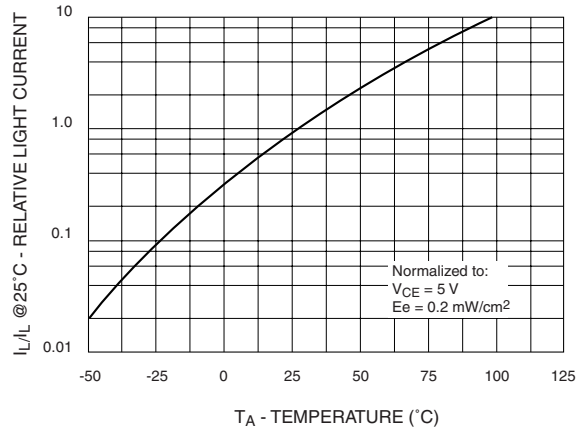


Fig. 2 Relative Light Current vs. Ambient Temperature

TYPICAL PERFORMANCE CURVES

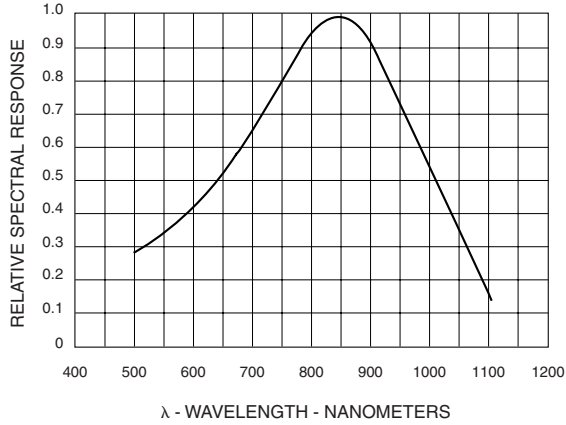


Fig. 3 Spectral Response Curve

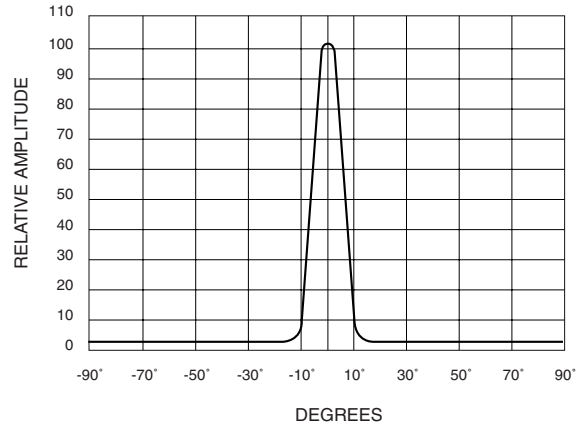


Fig. 4 Angular Response

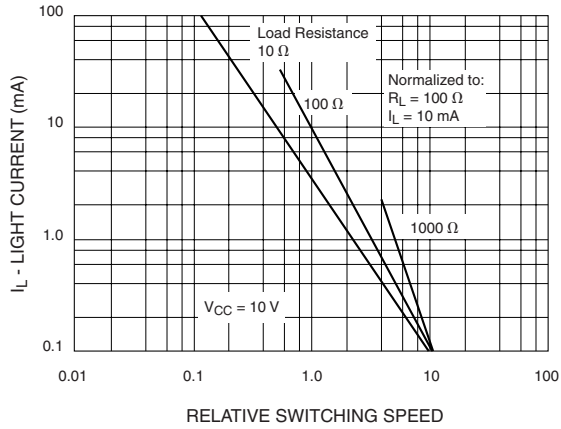


Fig. 5 Light Current vs. Relative Switching Speed

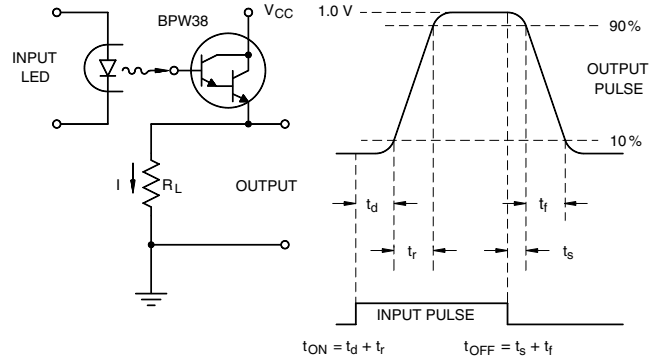


Fig. 6 Test Circuit and Voltage Waveforms

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