

FPT100/A/B FPT110/A/B

T-41-61

General Purpose Silicon Planar Phototransistor

General Description

The FPT100 and FPT110 are 3-terminal npn Planar phototransistors with exceptionally stable characteristics and high illumination-sensitivity. The availability of the base pin gives wide latitude for flexible circuit design. The case is made of a special plastic compound with transparent resin encapsulation that exhibits stable characteristics under high humidity conditions. The controlled sensitivities offered in the A and B versions give the circuit designer increased flexibility.

PACKAGE

FPT100	OPTO-26
FPT100A	OPTO-26
FPT100B	OPTO-26
FPT110	OPTO-28
FPT110A	OPTO-28
FPT110B	OPTO-28

Exceptionally Stable Characteristics Controlled Sensitivities

ABSOLUTE MAXIMUM RATINGS

Temperatures & Humidity

Storage Temperature	-55° C to 100° C
Operating Temperature	-55° C to 85° C
Relative Humidity at 65° C	85%

Power Dissipation (Notes 1 & 2)

Total Dissipation at	
$T_C = 25^\circ\text{C}$	200 mW
$T_A = 25^\circ\text{C}$	100 mW

Voltages & Currents (Note 5)

V_{CB} Collector-to-Base Voltage	50 V
V_{CES} Collector-to-Emitter Sustaining Voltage (Note 3)	30 V
I_C Collector Current	25 mA

ELECTRICAL CHARACTERISTICS (25° C Ambient Temperature unless otherwise noted) (Note 9)

SYMBOL	CHARACTERISTIC	MIN	TYP	MAX	UNITS	TEST CONDITIONS
BV_{ECO}	Emitter-to-Collector Breakdown Voltage (Note 5)		7.0		V	$I_E = 100\ \mu\text{A}$
BV_{CBO}	Collector-to-Base Breakdown Voltage (Note 5)	50	120		V	$I_C = 100\ \mu\text{A}$

NOTES:

- These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.
- These ratings give a maximum junction temperature of 85° C and junction-to-case thermal resistance of 300° C/W (derating factor of 3.33 mW/° C, and a junction-to-ambient thermal resistance of 600° C/W (derating factor of 1.67 mW/° C).
- Measured at noted irradiance as emitted from a tungsten filament lamp at a color temperature of 2854° K. The effective photosensitive area is typically 1.25 mm² (FPT100A/B) and 0.78 mm² (FPT110A/B).
- These are values obtained at noted irradiance as emitted from a GaAs source at 900 nm.
- Measured with radiation flux intensity of less than 0.1 $\mu\text{W}/\text{cm}^2$ over the spectrum from 100-1500 nm.
- Rise time is defined as the time required for I_{CE} to rise from 10% to 90% of peak value. Fall time is defined as the time required for I_{CE} to decrease from 90% to 10% of peak value. Test conditions are: $V_C = 5.0\text{ V}$, $I_{CE} = 4.0\text{ mA}$, $R_L = 100\ \Omega$, GaAs source.
- No electrical connection to base lead.
- No electrical connection to emitter lead.
- For product family characteristic curves, refer to Curve Set FPT100.