

Low-Cost, General-Purpose NPN Silicon Phototransistor

Optoelectronic Products

FPT700

General Description

The FPT700 is a low-cost, general-purpose, NPN silicon phototransistor encapsulated in a clear plastic T1 package.

Absolute Maximum Ratings

Maximum Temperature and Humidity

Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +100°C
Pin Temperature (Soldering, 5 s)	230°C
Relative Humidity at 85°C	85%

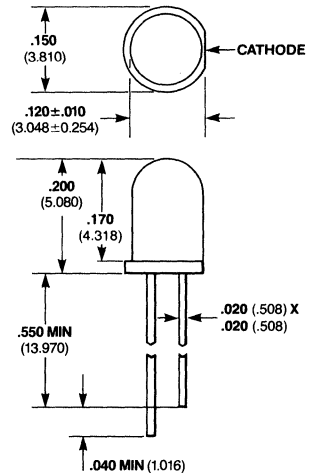
Maximum Power Dissipation

Total Dissipation at $T_A = 25^\circ\text{C}$	100 mW
Derate Linearly from 25°C	1.33 mW/°C

Maximum Voltage and Current

$V_{CE(sus)}$	Collector-to-Emitter Sustaining Voltage	15 V
I_C	Collector Current	25 mA

Package Outline



Notes

All dimensions in inches **bold** and millimeters (parentheses)
Tolerance unless specified = $\pm .015$ ($\pm .381$)

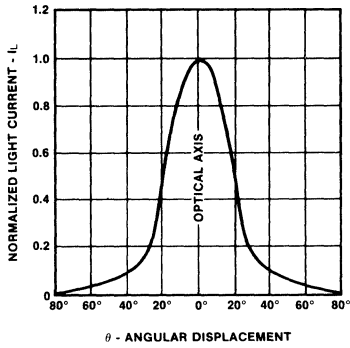
Electrical Characteristics $T_A = 25^\circ\text{C}$

Symbol	Characteristic	Min	Typ	Max	Units	Test Conditions
$V_{CE(sus)}$	Collector-to-Emitter Sustaining Voltage	15	50		V	$I_C = 1.0$ mA (Pulsed)
BV_{ECO}	Emitter-to-Collector Breakdown Voltage		7.0		V	$I_C = 100$ μ A
$V_{CE(sat)}$	Collector-to-Emitter Saturation Voltage		0.16	0.7	V	$I_C = 500$ μ A $H = 20$ mW/cm ²
I_{CEO}	Collector Dark Current		10	500	nA	$V_{CE} = 5.0$ V
$I_{CE(1t)}$	Photo Current, Tungsten Source at Color Temperature of 2854°K	0.10	1.0		mA	$V_{CE} = 5.0$ V, $H = 5.0$ mW/cm ²
t_r	Light Rise Time (10% to 90%)		2.8		μ s	$I_{CE} = 4.0$ mA, $V_{CE} = 5.0$ V
t_f	Light Fall Time (90% to 10%)		2.8		μ s	$R_L = 100$ Ω

Typical Electrical Characteristic Curves

FPT700

Normalized Light Current vs Angular Displacement



Relative Spectral Response

