

Infrared Photo Emitters

Device No.	Description	I _F mA Max	V _F I _F = 100 mA V Typ	Wavelength @ Peak Emission nm Typ	Axial Intensity I _F = 100 mA mW/sr Typ	Data Sheet Page No.
FPE104	Lead Frame Package Narrow Beam	100	1.35	890	10	4-23
FPE106	Miniature .085" X .150" X .095" Tall Flat Lens	100	1.35	890	0.4	4-26
FPE500	TO-18, Dome Lens	150	1.35	890	10.0	4-28
FPE510	TO-18, Flat Lens	150	1.35	890	1.0	4-28
FPE520	TO-18, Dome Lens	150	1.35	940	50	4-31
FPE530	TO-18, Flat Lens	150	1.35	940	5.0	4-31
FPE700	T-1 Clear Epoxy	40	1.35	890	2.0*	4-34
TIL38	T-1½ Grey Tinted	150	1.40	940	12	4-72

*I_F = 40 mA

P-N GaAs Infrared-Emitting Diode

Optoelectronic Products

TIL38

General Description

The TIL38 is a p-n GaAs infrared-emitting diode in a low-cost plastic T1- $\frac{3}{4}$ package.

Output Spectrally Compatible With Silicon Sensors
High Power Output
High Radiant Intensity

Absolute Maximum Ratings

Maximum Temperature

Operating Temperature -55°C to $+100^{\circ}\text{C}$
 Storage Temperature -55°C to $+100^{\circ}\text{C}$
 Pin Temperature (Soldering, 3 s) 260°C

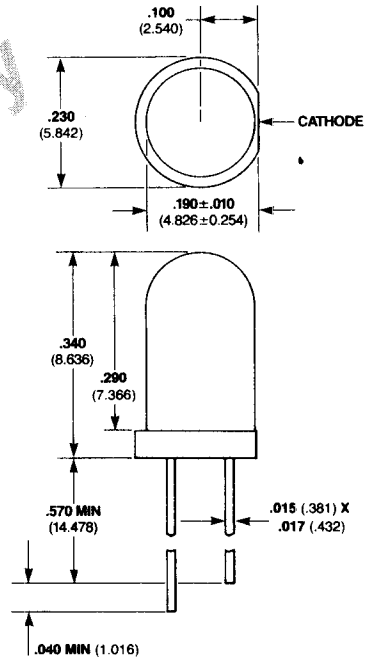
Maximum Power Dissipation

Total Dissipation at $T_A = 25^{\circ}\text{C}$ 125 mW
 Derate Linearly at 25°C 1.3 mW / $^{\circ}\text{C}$

Maximum Voltage and Current

V_R Reverse Voltage 5 V
 I_F Forward dc Current (25°C) 150 mA

Package Outline



Notes

This device has a gray-tinted plastic body
 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
P_O	Radiant Power Output	6	12		mW	$I_F = 100$ mA
λ_{pk}	Wavelength @ Peak Emission	915	940	975	nm	$I_F = 100$ mA
$\Delta\lambda$	Spectral Bandwidth Between Half-Power Points		50	75	nm	$I_F = 100$ mA
θ_{HI}	Emission Beam Angle Between Half Intensity		60		degree	$I_F = 100$ mA
C	Capacitance		25		pF	$V_F = 0$, $f = 1$ MHz
t_r	Radiant Rise Time		600		ns	$I_{FM} = 20$ mA, $t_w = 2$ μ s
t_f	Radiant Fall Time		350		ns	$f = 45$ kHz
V_F	Forward Voltage		2.55		V	$I_F = 1$ A