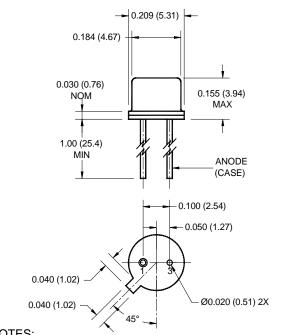


# F5E1/2/3 AIGaAs INFRARED EMITTING DIODE

## 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.

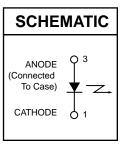
## DESCRIPTION

The F5E series are 880nm LEDs in a wide angle, TO-46 package.

## FEATURES

- Good optical to mechanical alignment
- Mechanically and wavelength matched to the TO-18 series phototransistor
- · Hermetically sealed package
- High irradiance level





- 1. Derate power dissipation linearly 1.70 mW/°C above 25°C ambient.
- 2. Derate power dissipation linearly 13.0 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. Total power output,  $P_O$ , is the total power radiated by the device into a solid angle of 2  $\pi$  steradians.

#### ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub> = 25°C unless otherwise specified) Rating Parameter Symbol Unit **Operating Temperature** -65 to +125 °C T<sub>OPR</sub> -65 to +150 °C Storage Temperature TSTG °C Soldering Temperature (Iron)(3,4,5 and 6) 240 for 5 sec T<sub>SOL-I</sub> Soldering Temperature (Flow)(3,4 and 6) 260 for 10 sec °C T<sub>SOL-F</sub> **Continuous Forward Current** $I_{F}$ 100 mΑ Forward Current (pw, 10µs; 100Hz) 3 А $I_{F}$ Forward Current (pw, 1µs; 200Hz) 10 А $I_{F}$ 3 V **Reverse Voltage** $V_R$ Power Dissipation $(T_A = 25^{\circ}C)^{(1)}$ $P_D$ 170 mW Power Dissipation $(T_C = 25^{\circ}C)^{(2)}$ $P_{D}$ 1.3 W

ELECTRICAL / OPTICAL CHARACTERISTICS (TA = 25°C) (All measurements made under pulse conditions)

TEST CONDITIONS	SYMBOL	MIN	TYP	MAX	UNITS
I <sub>F</sub> = 100 mA	$\lambda_{PE}$	—	880	—	nm
	θ		±40	—	Deg.
I <sub>F</sub> = 100 mA	V <sub>F</sub>		—	1.7	V
$V_R = 3 V$	I <sub>R</sub>		—	10	μA
I <sub>F</sub> = 100 mA	Po	12.0	—	_	mW
I <sub>F</sub> = 100 mA	Po	9.0	—	_	mW
I <sub>F</sub> = 100 mA	Po	10.5	—	—	mW
	t <sub>r</sub>		1.5	—	μs
	t <sub>f</sub>		1.5	—	μs
	$I_F = 100 \text{ mA}$ $I_F = 100 \text{ mA}$ $V_R = 3 \text{ V}$ $I_F = 100 \text{ mA}$ $I_F = 100 \text{ mA}$	$ \begin{array}{c} I_{F} = 100 \text{ mA} & \lambda_{PE} \\ \hline \\ \Theta \\ I_{F} = 100 \text{ mA} & V_{F} \\ \hline \\ V_{R} = 3 \text{ V} & I_{R} \\ I_{F} = 100 \text{ mA} & P_{O} \\ \hline \\ I_{F} = 100 \text{ mA} & P_{O} \\ \end{array} $	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$



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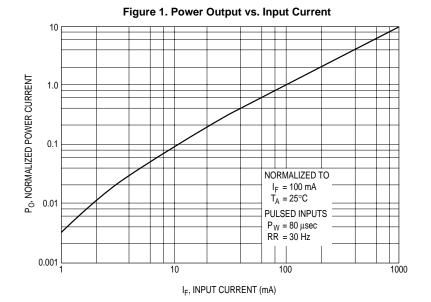
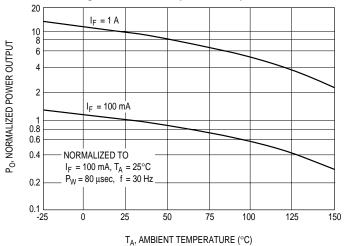


Figure 2. Power Output vs. Temperature





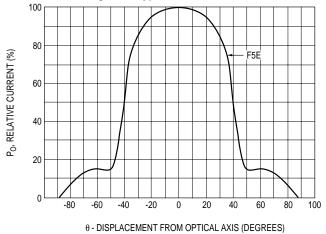
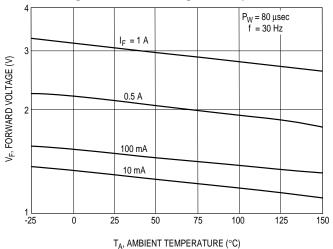
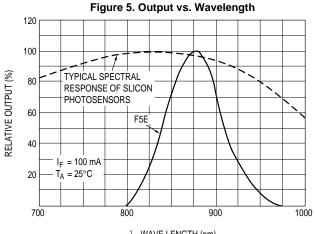


Figure 3. Forward Voltage vs. Temperature









# F5E1/2/3 AIGaAs INFRARED EMITTING DIODE

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