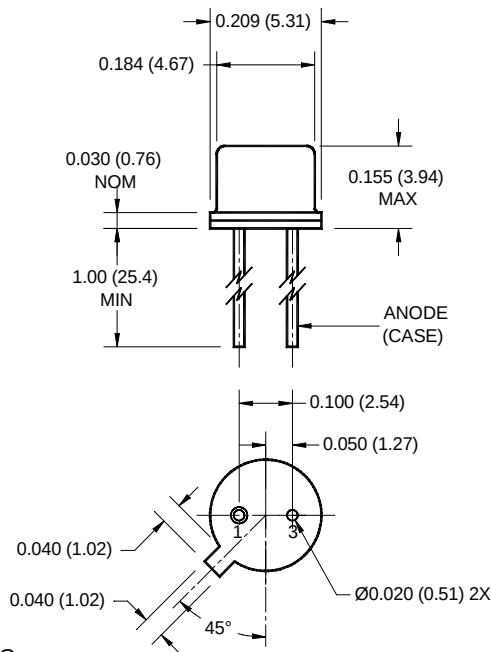


PACKAGE DIMENSIONS

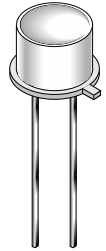


NOTES:

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

DESCRIPTION

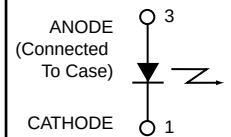
The F5E series are 880nm LEDs in a wide angle, TO-46 package.



FEATURES

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

SCHEMATIC



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 2π steradians.

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
Continuous Forward Current	I_F	100	mA
Forward Current (pw, 10µs; 100Hz)	I_F	3	A
Forward Current (pw, 1µs; 200Hz)	I_F	10	A
Reverse Voltage	V_R	3	V
Power Dissipation ($T_A = 25^\circ\text{C}$) ⁽¹⁾	P_D	170	mW
Power Dissipation ($T_C = 25^\circ\text{C}$) ⁽²⁾	P_D	1.3	W

ELECTRICAL / OPTICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$) (All measurements made under pulse conditions)

PARAMETER	TEST CONDITIONS	SYMBOL	MIN	TYP	MAX	UNITS
Peak Emission Wavelength	$I_F = 100$ mA	λ_{PE}	—	880	—	nm
Emission Angle at 1/2 Power		θ	—	±40	—	Deg.
Forward Voltage	$I_F = 100$ mA	V_F	—	—	1.7	V
Reverse Leakage Current	$V_R = 3$ V	I_R	—	—	10	µA
Total Power F5E1 ⁽⁷⁾	$I_F = 100$ mA	P_O	12.0	—	—	mW
Total Power F5E2 ⁽⁷⁾	$I_F = 100$ mA	P_O	9.0	—	—	mW
Total Power F5E3 ⁽⁷⁾	$I_F = 100$ mA	P_O	10.5	—	—	mW
Rise Time 0-90% of output		t_r	—	1.5	—	µs
Fall Time 100-10% of output		t_f	—	1.5	—	µs

Figure 1. Power Output vs. Input Current

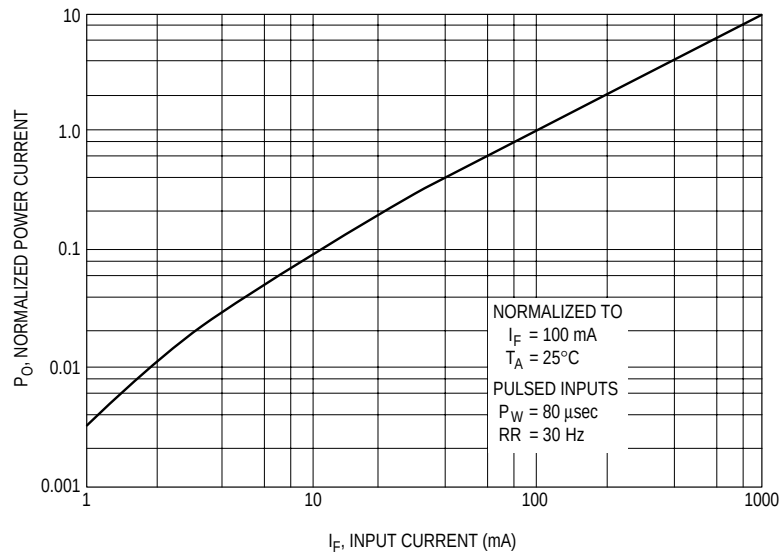


Figure 2. Power Output vs. Temperature

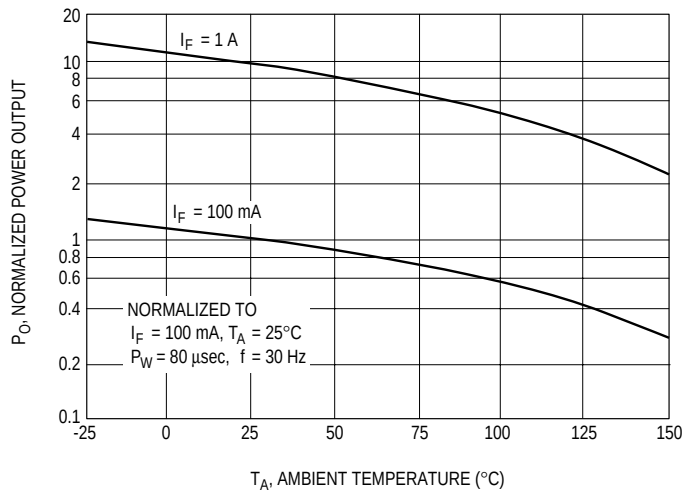


Figure 3. Forward Voltage vs. Temperature

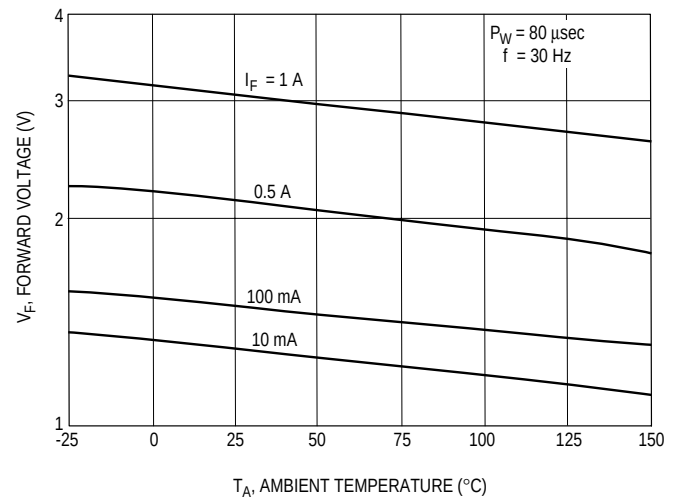


Figure 4. Typical Radiation Pattern

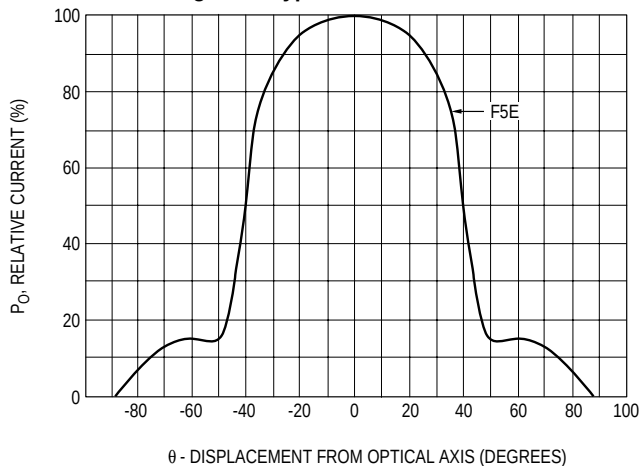
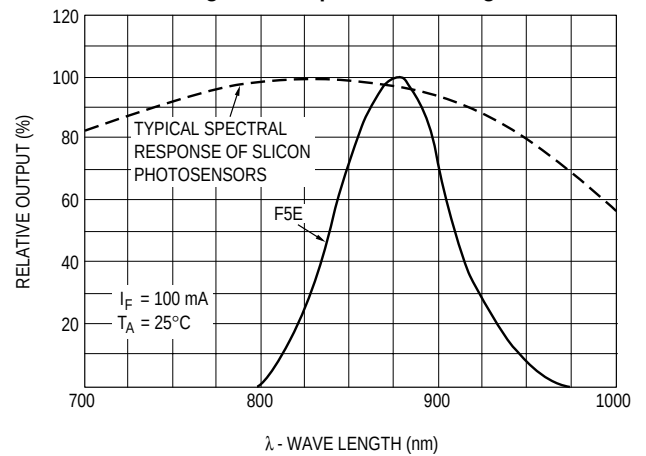


Figure 5. Output vs. Wavelength



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