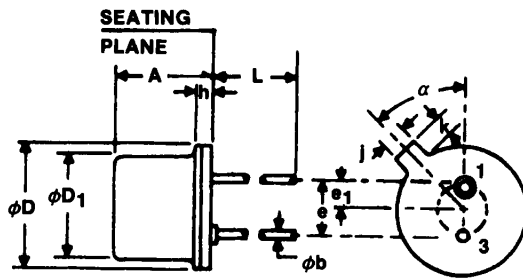


PACKAGE DIMENSIONS



ST1331

SYMBOL	INCHES		MILLIMETERS		NOTES
	MIN.	MAX.	MIN.	MAX.	
A	—	.155	—	3.93	
φb	.016	.021	.407	.533	
φD	.209	.230	5.31	5.84	
φD ₁	.180	.188	4.57	4.77	
e	.100 NOM.		2.54 NOM.		2
e ₁	.050 NOM.		1.27 NOM.		2
h	—	.030	—	.76	
j	.031	.044	.79	1.11	
k	.036	.046	.91	1.16	1
L	1.00	—	25.4	—	
α	45°	45°	45°	45°	3

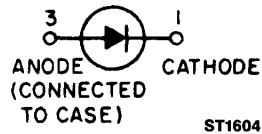
DESCRIPTION

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

FEATURES

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

PACKAGE OUTLINE



NOTES:

1. MEASURED FROM MAXIMUM DIAMETER OF DEVICE.
2. LEADS HAVING MAXIMUM DIAMETER .021" (.533mm) MEASURED IN GAUGING PLANE .054" + .001" - .000 (1.37 + 0.25 - 0.00mm) BELOW THE REFERENCE PLANE OF THE DEVICE SHALL BE WITHIN .007" (.778mm) THEIR TRUE POSITION RELATIVE TO A MAXIMUM WIDTH TAB.
3. FROM CENTERLINE TAB.



AlGaAs INFRARED EMITTING DIODE

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ Unless Otherwise Specified)	
Storage Temperature	-65°C to +150°C
Operating Temperature	-65°C to +125°C
Soldering:	
Lead Temperature (Iron)	240°C for 5 sec. ^(3,4,5,6)
Lead Temperature (Flow)	260°C for 10 sec. ^(3,4,6)
Continuous Forward Current	100 mA
Forward Current (pw, 10 μ S; 100 Hz)	3 A
Forward Current (pw, 1 μ S; 200 Hz)	10 A
Reverse Voltage	3 Volts
Power Dissipation ($T_A = 25^\circ\text{C}$)	170 mW ⁽¹⁾
Power Dissipation ($T_C = 25^\circ\text{C}$)	1.3 W ⁽²⁾

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ Unless Otherwise Specified) (All measurements made under pulse conditions.)						
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNITS	TEST CONDITIONS
Forward Voltage	V_f	—		1.7	V	$I_f = 100\text{ mA}$
Reverse Leakage Current	I_r	—		10	μA	$V_r = 3\text{ V}$
Peak Emission Wavelength	λ_p		880		nm	$I_f = 100\text{ mA}$
Emission Angle at 1/2 Power	θ		± 40		Degrees	
Total Power F5E1	P_o	12.0		—	mW	$I_f = 100\text{ mA}^{(7)}$
Total Power F5E2	P_o	9.0		—	mW	$I_f = 100\text{ mA}^{(7)}$
Total Power F5E3	P_o	10.5		—	mW	$I_f = 100\text{ mA}^{(7)}$
Rise Time 0-90% of output	t_r		1.5		μS	
Fall Time 100-10% of output	t_f		1.5		μS	

NOTES
<ol style="list-style-type: none"> 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 Isopropanol alcohols are recommended as cleaning agents. 5. Soldering iron tip 1/16" (1.6 mm) 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.

TYPICAL CHARACTERISTICS

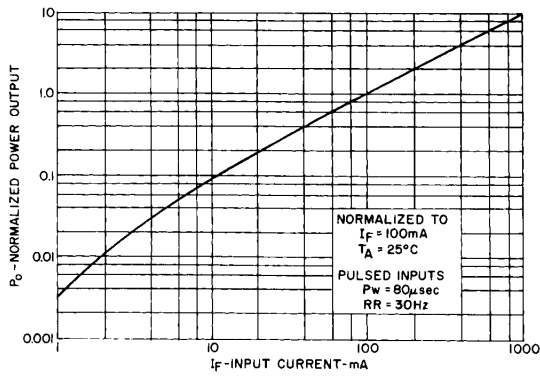


Fig. 1. Power Output vs. Input Current

ST1025

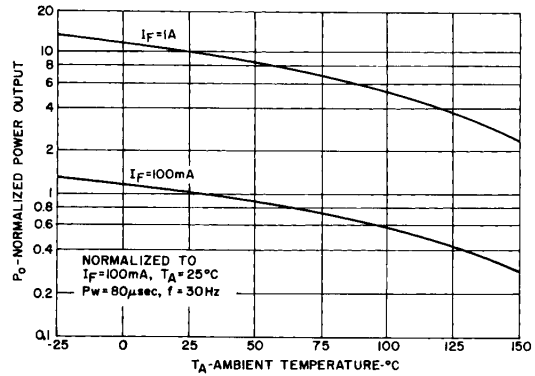


Fig. 2. Power Output vs. Temperature

ST1026

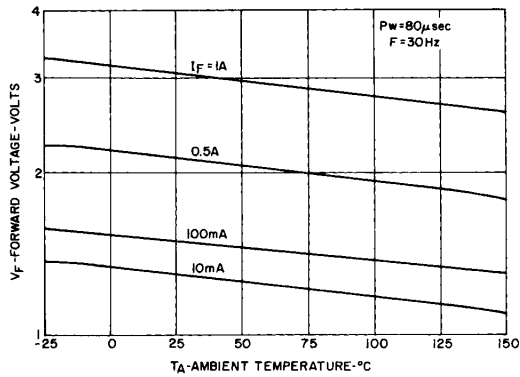


Fig. 3. Forward Voltage vs. Temperature

ST1027

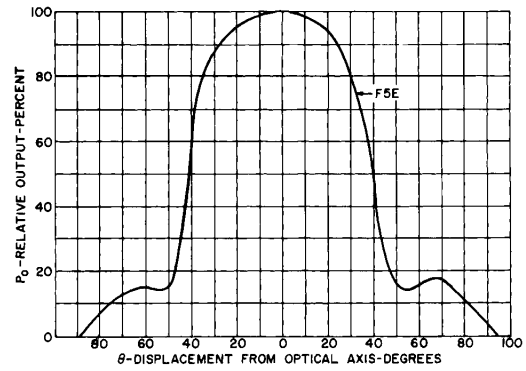


Fig. 4. Typical Radiation Pattern

ST1028-98

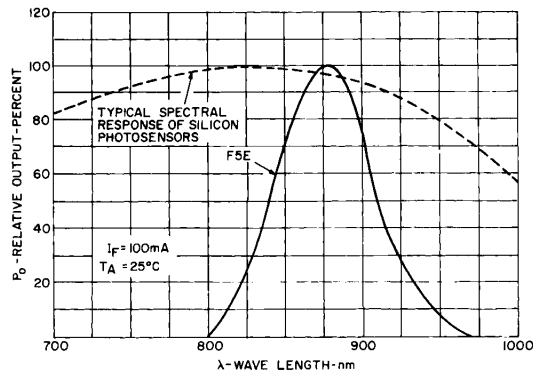


Fig. 5. Output vs. Wavelength

ST1030-98