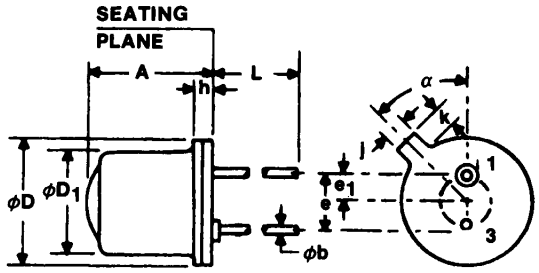
QT OPTOELECTRONICS

AlGaAs INFRARED EMITTING DIODE

F5D1/2/3

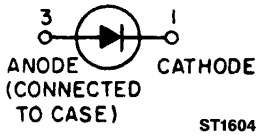
PACKAGE DIMENSIONS



ST1332

SYMBOL	INCHES		MILLIMETERS		NOTES
	MIN.	MAX.	MIN.	MAX.	
A	—	.255	—	6.47	
⌀b	.016	.021	.407	.533	
⌀D	.209	.230	5.31	5.84	
⌀D1	.180	.188	4.57	4.77	
e	.100 NOM.		2.54 NOM.		2
e1	.050 NOM.		1.27 NOM.		2
h	—	.030	—	.76	
j	.031	.044	.79	1.11	
k	.036	.046	.92	1.16	1
L	1.00	—	25.4	—	
α	45°	45°	45°	45°	3

PACKAGE OUTLINE



ST1604

NOTES:
1. MEASURED FROM MAXIMUM DIAMETER OF DEVICE.
2. LEADS HAVING MAXIMUM DIAMETER .021" (.533mm) MEASURED IN GAUGING PLANE .054" + .001" – .000 (137 + 025 – 000mm) 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.

DESCRIPTION

The F5D series is 880nm LEDs in a narrow angle, T0-46 package.

FEATURES

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

QT OPTOELECTRONICS

AlGaAs INFRARED EMITTING DIODE

ABSOLUTE MAXIMUM RATINGS (T_A = 25°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, 10μS; 100 Hz)	3 A
Forward Current (pw, 1μS; 200 Hz)	10 A
Reverse Voltage	3 Volts
Power Dissipation (T_A = 25°C)	170 mW[1]
Power Dissipation (T_C = 25°C)	1.3 W[2]

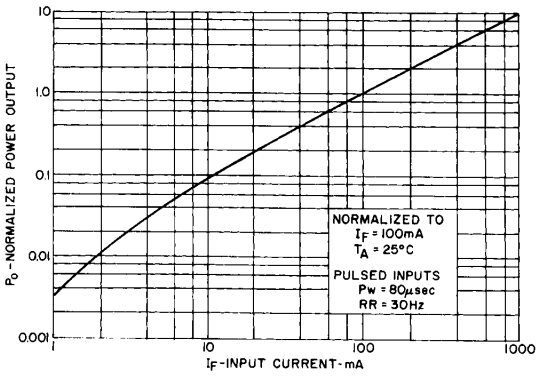
ELECTRICAL CHARACTERISTICS (T_A = 25°C Unless Otherwise Specified)
(All measurements made under pulse conditions.)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNITS	TEST CONDITIONS
Forward Voltage	V_F	—		1.7	V	I_F = 100 mA
Reverse Leakage Current	I_R	—		10	μA	V_R = 3 V
Peak Emission Wavelength	λ_p		880		nm	I_F = 100 mA
Emission Angle at ½ Power	θ		±10		Degrees	
Total Power F5D1	Po	12.0		—	mW	I_F = 100 mA[7]
Total Power F5D2	Po	9.0		—	mW	I_F = 100 mA[7]
Total Power F5D3	Po	10.5		—	mW	I_F = 100 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

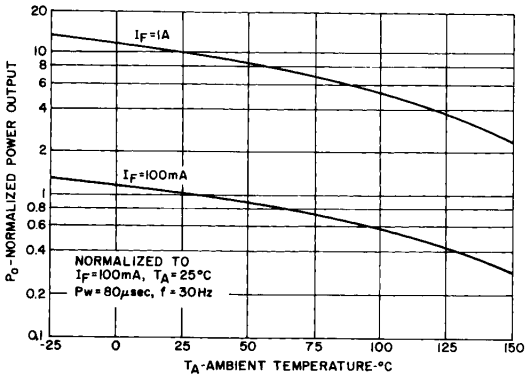
1. *Derate power dissipation linearly 1.70 mW/°C above 25°C ambient.*
2. *Derate power dissipation linearly 13.0 mW/°C above 25°C case.*
3. *RMA flux is recommended.*
4. *Methanol or Isopranol alcohols are recommended as cleaning agents.*
5. *Soldering iron tip 1/16" (1.6 mm) minimum from housing.*
6. *As long as leads are not under any stress or spring tension.*
7. *Total power output, Po, is the total power radiated by the device into a solid angle of 2π steradians.*

TYPICAL CHARACTERISTICS



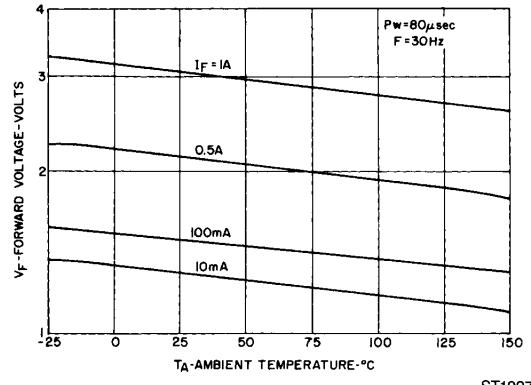
ST1025

Fig. 1. Power Output vs. Input Current



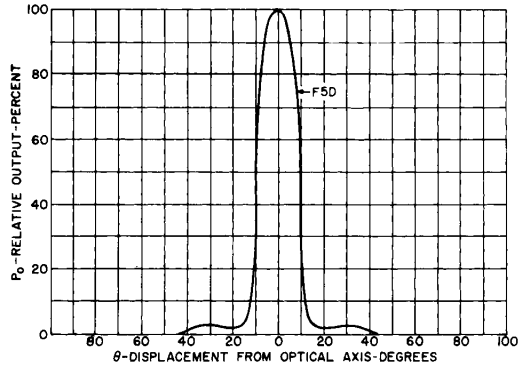
ST1026

Fig. 2. Power Output vs. Temperature



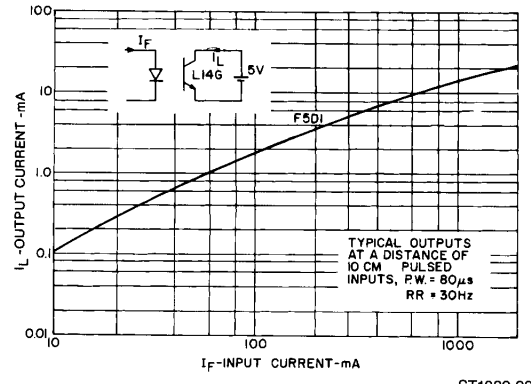
ST1027

Fig. 3. Forward Voltage vs. Temperature



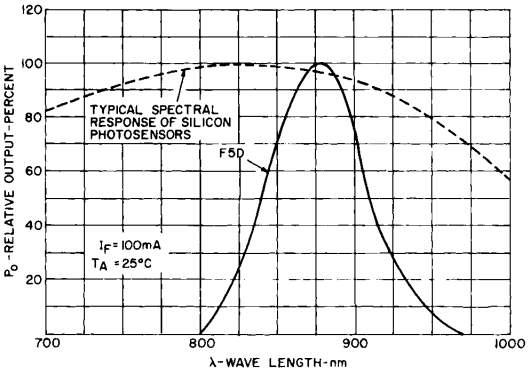
ST1028-99

Fig. 4. Typical Radiation Pattern



ST1029-99

Fig. 5. Output vs. Input with L14G Detector



ST1030-99

Fig. 6. Output vs. Wavelength