LED55B, LED55C, LED56, LED55BF, LED55CF, LED56F

Infrared Emitter
Gallium Arsenide Infrared Emitting Diode

The LED55B-LED55C-LED56 Series are gallium arsenide, light emitting diodes which emit non-coherent, infrared energy with a peak wave length of 940 nanometers. They are ideally suited for use with silicon detectors. The LED55B, LED55C and LED56 devices have a lens which provides a narrow beam angle while the "F" versions have a flat window for a wide beam angle which is useful with external lensing.

absolute maximum ratings: (25°C unless otherwise specified)

Voltage:			
Reverse Voltage	V_R	3	volts
Currents:			
Forward Current Continuous	I_F	100	mA
Forward Current (pw 1 μsec 200 Hz)	I_F	10	A
Dissipations:			
Power Dissipation (T_A = 25°C)*	P_T	170	mW
Power Dissipation (T_C = 25°C)**	P_T	1.3	W
Temperatures:			
Junction Temperature	T_J	-65°C to +150°C	
Storage Temperature	T_{STG}	-65°C to +150°C	
Lead Soldering Time		10 seconds at 260°C	

*Derate 1.36 mW/°C above 25°C ambient.
**Derate 10.4 mW/°C above 25°C case.

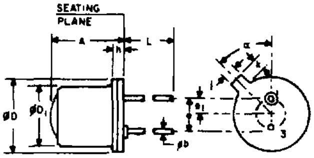
electrical characteristics: (25°C unless otherwise specified)

		MIN.	TYP.	MAX.	UNITS
Reverse Leakage Current (V_R = 3V)	I_R			10	μA
Forward Voltage (I_F = 100mA)	V_F		1.4	1.7	V

optical characteristics: (25°C unless otherwise specified)

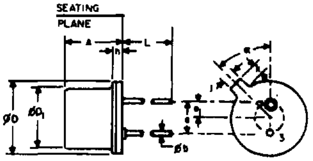
		MIN.	TYP.	MAX.	UNITS
Total Power Output (note 1) (I_F = 100mA)					
LED55B-LED55BF	P_O	3.5			mW
LED55C-LED55CF		5.4			mW
LED56 -LED56F		1.5			mW
Peak Emission Wavelength (I_F = 100mA)			940		nm
Spectral Shift with Temperature			.28		nm/°C
Spectral Bandwidth 50%			60		nm
Rise Time 0-90% of Output			1.0		μsec
Fall Time 100-10% of Output			1.0		μsec

Note 1: Total power output, P_O, is the total power radiated by the device into a solid angle of 2π steradians.



LED55B , LED55C , LED56

SYMBOL	INCHES MIN	INCHES MAX	MILLIMETERS MIN.	MILLIMETERS MAX	NOTES
A		255		6.47	
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		.050		.76	
j	.031	044	.79	1.11	
k	036	046	.92	1.16	1
L	1.00		25.4		
α	45°		45°		3



LED55BF, LED55CF, LED56F

SYMBOL	INCHES MIN	INCHES MAX	MILLIMETERS MIN.	MILLIMETERS MAX.	NOTES
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	1.1	
k	036	.046	.92	1.16	1
L	1.00		25.4		
α	45°		45°		3

1. Measured from maximum diameter of device.
2. Leads having max. diameter .021" (.533mm) measured in gaging plane .054" + .001" – .000 (1.37 + .025 – .000mm) below the reference plane of the device shall be within .007" (.178mm) their true position relative to a maximum width tab.
3. From centerline tab.

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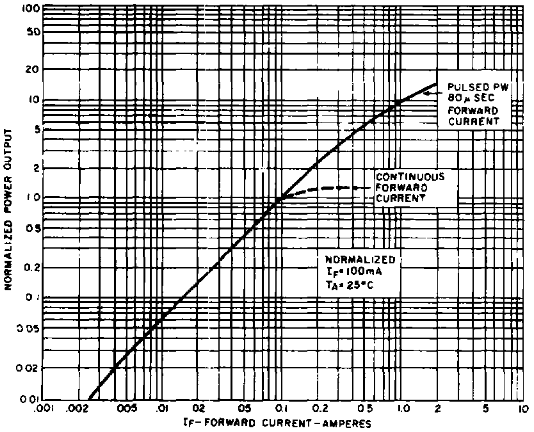
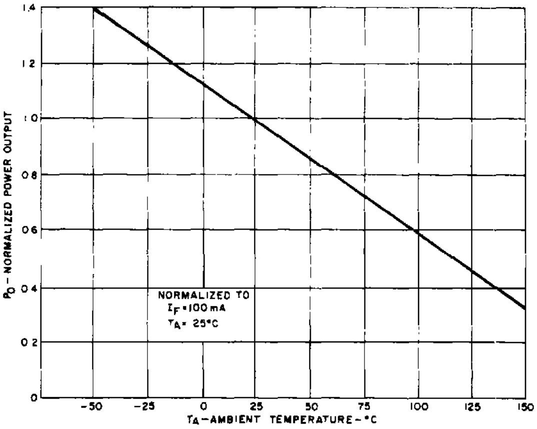
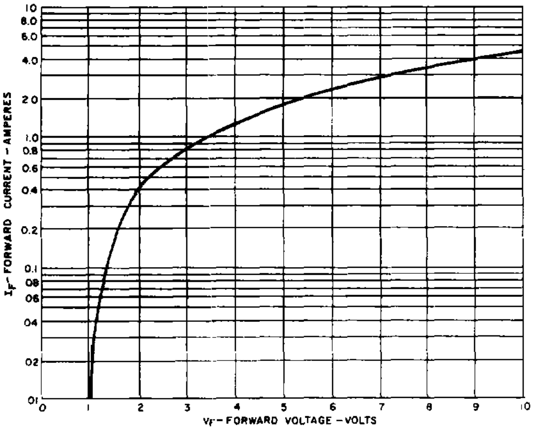
TYPICAL CHARACTERISTICS



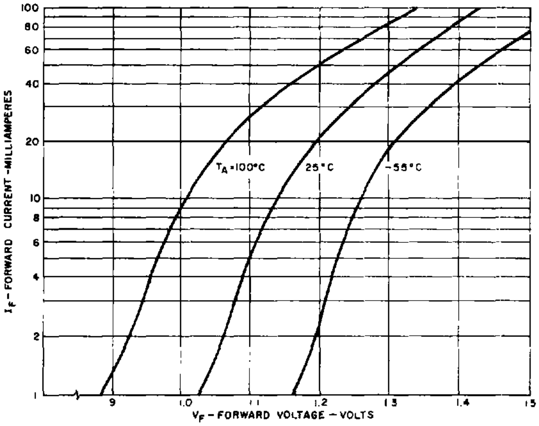
1. POWER OUTPUT VS. INPUT CURRENT



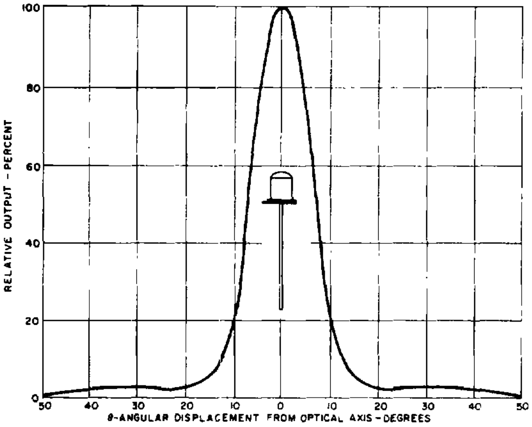
2. POWER OUTPUT VS. TEMPERATURE



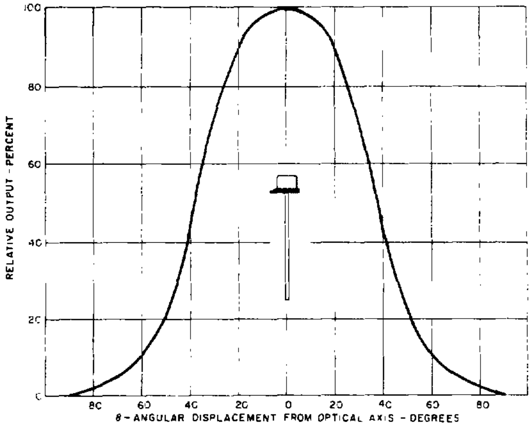
3. LED 55B, 55C, 56, 55BF, 55CF, 56F FORWARD VOLTAGE VS. FORWARD CURRENT



4. FORWARD VOLTAGE VS. FORWARD CURRENT



5. LED 55B, 55C, 56 TYPICAL RADIATION PATTERN



6. LED 55BF, 55CF, 56F TYPICAL RADIATION PATTERN