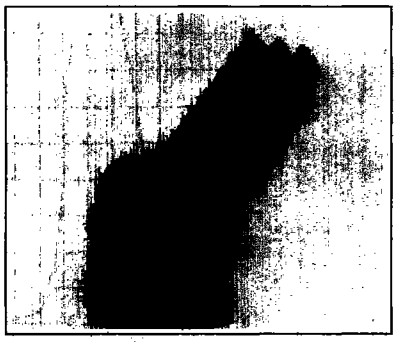
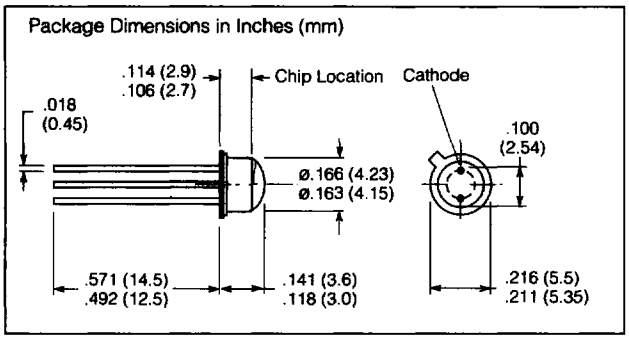
SIEMENS

SFH462

GaAlAs INFRARED EMITTER





FEATURES

- **Radiation: Visible Red Range**
- **Anode Electrically Connected to Case**
- **Very High Efficiency**
- **Short Switching Time**
- **High Pulse Power**
- **High Reliability**
- **Long Life**
- **Same Package as BP103, LD 242, SFH 463, SFH 483**
- **Package: 18 A 3 DIN 870 (TO 18), Clear Epoxy Resin, 0.1" (2.54 mm) Lead Spacing**
- **DIN Humidity Category per DIN 40040 GQG**
- **Component Subjected to Aperture Measurement**
- **Cathode Marking: Projection at Case Bottom**
- **Application**
  - **Long Range Light Reflecting Switches**

Notes:
1. An aperture is used in front of the component for measuring the radiant intensity and the half angle (diameter of the aperture: 1.1 mm; distance of aperture to case back side: 4 mm). This ensures that only the radiation in axial direction emitting directly from the chip surface will be evaluated during radiant intensity measurement. This measurement is denoted by "E7800" added to the part number.
2. Availability subject to yield.

Maximum Ratings

Operating and Storage Temperature Range (T_{OP}, T_{STG}) .. −40 to + 80°C
Junction Temperature (T_J) ..... 100°C
Reverse Voltage (V_R) ..... 3 V
Forward Current (I_F) ..... 50 mA
Power Dissipation (P_{TOT}) ..... 120 mW
Surge Current (I_{FSM}) t_p=10µs, D=0 ..... 1 A
Thermal Resistance (R_{thJA}) ..... 450 K/W
(R_{thJC}) ..... 160 K/W

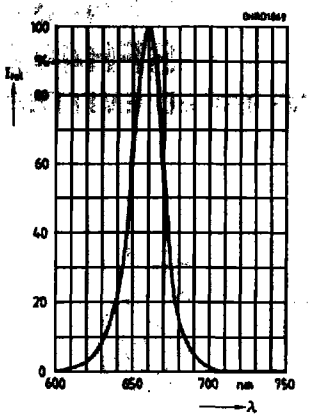
Characteristics (T_A=25°C)

Parameter	Sym	Value	Unit	Condition
Wavelength, Peak Emission	λ_{peak}	660±20	nm	I_F=50 mA, t_p=20 ms
Spectral Bandwidth at 50%	$\Delta\lambda$	25	nm	I_F=50 mA
Half Angle	φ	±23	Deg.	
Active Chip Area	A	0.0625	mm²	
Chip Area Dimension	LxW	0.25x0.25	mm	
Distance Chip Surface to Case Surface	H	2.8	mm	
Switching Times, I_e from 10% to 90% and from 90% to 10%,	t_r/t_f	100	ns	I_F=50 mA, R_L=50 Ω
Capacitance	C_O	30	pF	V_R=0 V, f=1 MHZ
Forward Voltage	V_F	2.1 (≤2.8)	V	I_F=50 mA, t_p=20 ms
Reverse Current	I_R	0.01 (≤10)	µA	V_R=3 V
Radiant Flux (Total)	Φ_e	11	mW	I_F=50 mA, t_p=20 ms
Temperature Coefficient of I_e Resp. Φ_e	TC_I	−0.4	%/K	I_F=50 mA
Temperature Coefficient of V_F	TCv	−3	mV/K	I_F=50 mA
Temperature Coefficient of λ	TC_λ	+0.16	nm/K	I_F=50 mA

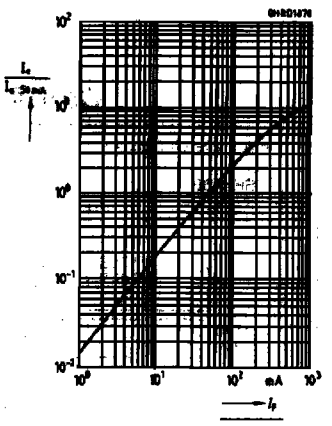
Radiant Intensity Groupings(1)
I_e in Axial Direction at solid angle of Ω=0.01 sr

SFH462-K E 7800	$I_{E\,min}$	0.63	mW/sr	I_F=50 mA
SFH462-L E 7800	$I_{E\,min}$	1	mW/sr	I_F=50 mA
SFH462-K E 7800	$I_{E\,max}$	1.25	mW/sr	t_p=20 ms
SFH462-L E 7800(2)	$I_{E\,max}$	2	mW/sr	t_p=20 ms

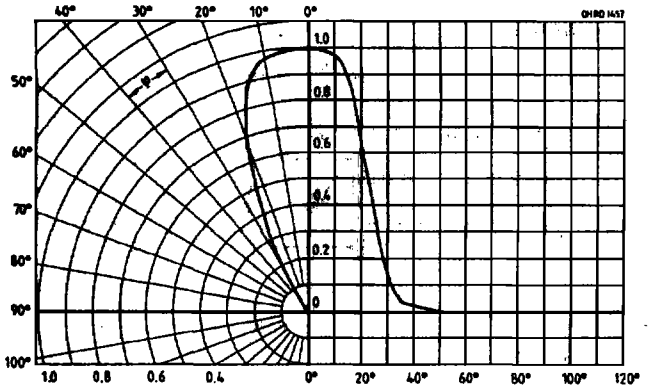
Relative spectral emission
$I_{rel} = f(\lambda)$



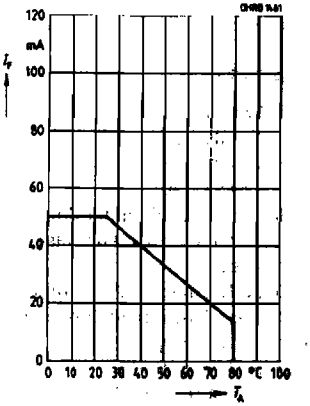
Radiant Intensity $I_E = f(I_F)$
Single Pulse $\tau = 20\,\mu s$ I_e 50 mA



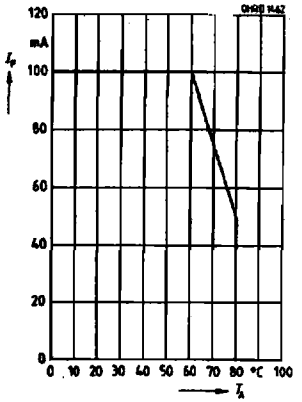
Radiation characteristic $I_{rel} = f(\varphi)$



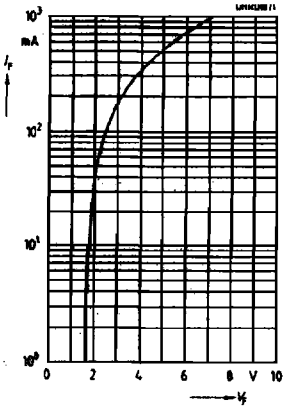
Maximum permissible forward current
$I_F = f(T_A)$, $R_{thJA} = 450$ K/W



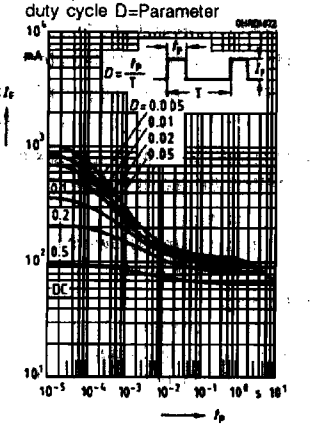
Maximum permissible forward curent
$I_F = f(T_A)$, $R_{thJA} = 160$ K/W



Forward Current $I_F = f(V_F)$,
Single pulse $\tau = 20\,\mu s$



Permissible pulse handling capability
$I_F = f(t_p)$, $T_A = 25$ °C
duty cycle D=Parameter



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