

Infrared LED

Features:

- Low Cost
- Popular T-1 $\frac{3}{4}$ Package
- Ideal Beam Angle for Most Remote Control Applications in Conjunction with MRD821
- Uses Stable Long-Life LED Technology
- Clear Epoxy Package

Applications:

Remote Controls and Long Distance Interruptive Sensing

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Motorola Preferred Device

INFRARED
LED
940 nm



CASE 279B-01
STYLE 1



MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Reverse Voltage	V_R	5	Volts
Forward Current — Continuous	I_F	100	mA
Forward Current — Peak Pulse	I_F	1	A
Total Power Dissipation (at $T_A = 25^\circ\text{C}$ Derate above 25°C)	P_D	100 2.2	mW mW/ $^\circ\text{C}$
Ambient Operating Temperature Range	T_A	-30 to $+70$	$^\circ\text{C}$
Storage Temperature	T_{stg}	-30 to $+80$	$^\circ\text{C}$
Lead Soldering Temperature, 5 seconds max, 1/16 inch from case	—	260	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Leakage Current ($V_R = 3\text{ V}$)	I_R	—	10	—	nA
Reverse Leakage Current ($V_R = 5\text{ V}$)	I_R	—	1	10	μA
Forward Voltage ($I_F = 100\text{ mA}$)	V_F	—	1.35	1.7	V
Temperature Coefficient of Forward Voltage	ΔV_F	—	1.6	—	mV/K
Capacitance ($f = 1\text{ MHz}$)	C	—	25	—	pF

OPTICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Peak Wavelength ($I_F = 100\text{ mA}$)	λ_p	—	940	—	nm
Spectral Half-Power Bandwidth	$\Delta\lambda$	—	50	—	nm
Total Power Output ($I_F = 100\text{ mA}$)	Φ_e	—	16	—	mW
Temperature Coefficient of Total Power Output	$\Delta\Phi_e$	—	-0.25	—	%/K
Axial Radiant Intensity ($I_F = 100\text{ mA}$)	I_e	10	15	—	mW/sr
Temperature Coefficient of Axial Radiant Intensity	ΔI_e	—	-0.25	—	%/K
Power Half-Angle	φ	—	± 30	—	$^\circ$

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TYPICAL CHARACTERISTICS

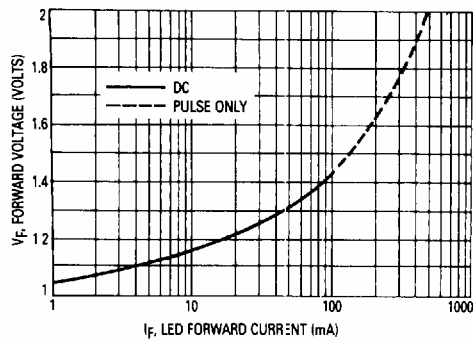


Figure 1. LED Forward Voltage versus Forward Current

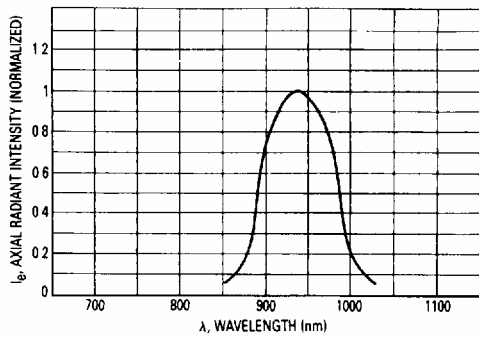


Figure 2. Relative Spectral Emission

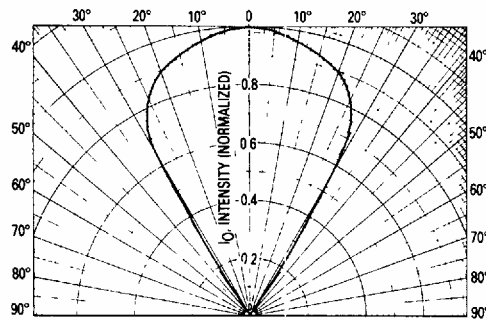


Figure 3. Spatial Radiation Pattern

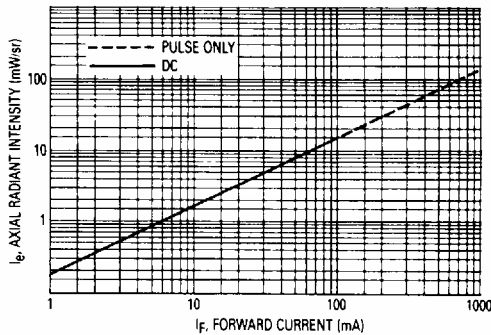


Figure 4. Intensity versus Forward Current