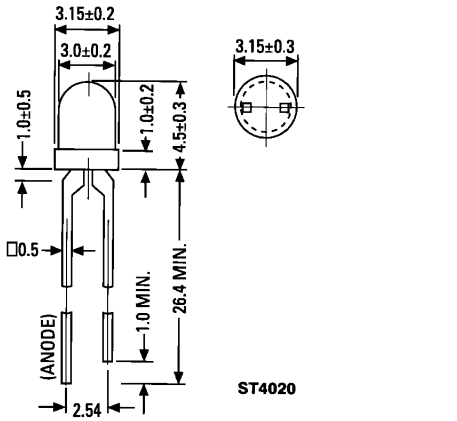
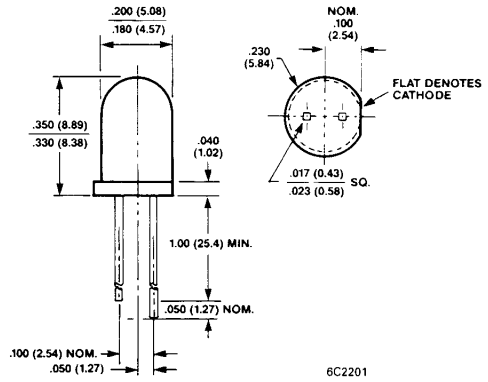
QT OPTOELECTRONICS

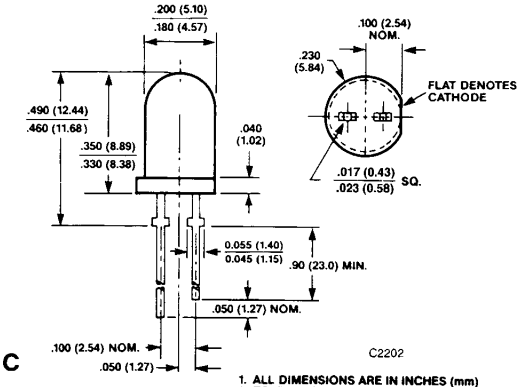
DOUBLE HETEROJUNCTION AlGaAs LOW CURRENT RED LED LAMPS

T-1¾ HLMP-D150A/D155A
T-1 HLMP-K150/K155

PACKAGE DIMENSIONS







C

1. ALL DIMENSIONS ARE IN INCHES (mm)
2. TOLERANCES ARE ±.010" UNLESS OTHERWISE SPECIFIED
3. AN EPOXY MENISCUS MAY EXTEND ABOUT .040" (1 mm) DOWN THE LEADS

DESCRIPTION

A recently developed double heterojunction (DH) AlGaAs/GaAs material technology is the basis of the light emitting chip utilized in these solid state lamps. Exceptional light output typifies these devices and provides for their use over a broad range of drive currents. At a dominant wavelength of 637 nanometers, the light is perceived as a deep red color. These lamps are ideally suited for use in applications where high light output is required with minimum power input.

FEATURES

- Luminous intensity specified at 1 mA
- High light output at low currents
- Wide viewing angle
- Low power/low forward voltage
- Outstanding material efficiency
- CMOS/MOS compatible
- TTL compatible
- Deep red color

APPLICATIONS

- Low power circuits
- Battery powered equipment
- Telecommunication indicators

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PHYSICAL CHARACTERISTICS

SIZE	TYPE	LENS EFFECT	I_v (mcd) MIN.	@ 1mA TYP.	VIEWING ANGLE 2Ø1/2 DEGREES	PKG.
T-1	HLMP-K150	Red Tinted Diffused	1.2	2	60	A
T-1	HLMP-K155	Clear	2	3	45	A
T-1¾	HLMP-D150A	Red Tinted Diffused	1.2	3	65	B
T-1¾	HLMP-D155A	Clear	5	10	24	C

ELECTRO-OPTICAL CHARACTERISTICS (T_A = 25°C Unless Otherwise Specified)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNITS	TEST CONDITIONS
Forward voltage	V_F		1.6	1.8	V	I_F=1 mA
Peak wavelength	λp		645		nm	I_F=1 mA
Dominant wavelength	λd		637		nm	I_F=1 mA
Spectral line half width	Δλ1/2		20		nm	I_F=1 mA
Capacitance	C		30		pF	V_F=0, f=1 MHz
Reverse breakdown voltage	V_R	5.0	15.0		V	I_R=100 μA

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C Unless Otherwise Specified)

Power dissipation	87 mW
Operating temperature	−20°C to +100°C
Storage temperature	−55°C to +100°C
Lead soldering time at 260°C	5 seconds
Peak forward current (see Note 1)	300 mA
Reverse voltage (I_R = 100μA)	5V
Average forward current (see Note 2)	20 mA

NOTES

1. *Maximum I_{peak} at f = 1 kHz, DF = 6.7%*
2. *Derate linearly as shown in Figure 4.*

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TYPICAL ELECTRO-OPTICAL CHARACTERISTIC CURVES
(25°C Free Air Temperature)

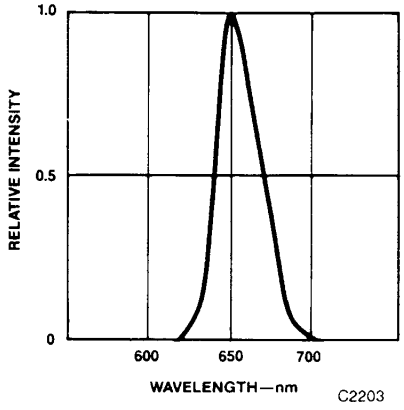

Fig. 1. Relative Intensity vs. Wavelength

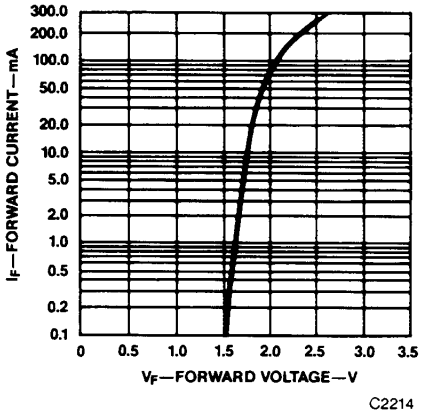

Fig. 2. Forward Current vs. Forward Voltage

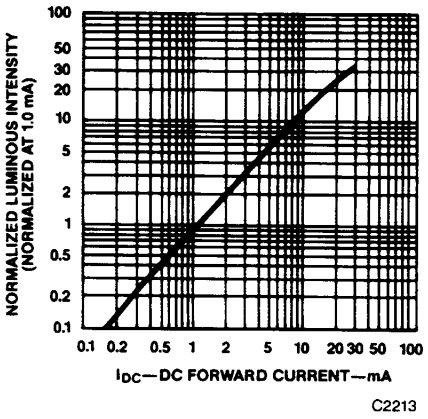

Fig. 3. Relative Luminous Intensity vs. DC Forward Current

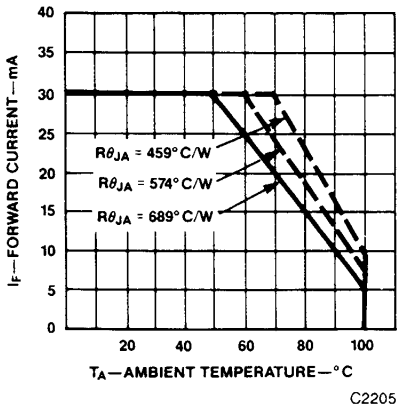

Fig. 4. Maximum Forwad DC Current vs. Ambient Temperature. Derating Based on T_J MAX = 110°C

TYPICAL ELECTRO-OPTICAL CHARACTERISTIC CURVES
(25°C Free Air Temperature) (Cont'd)

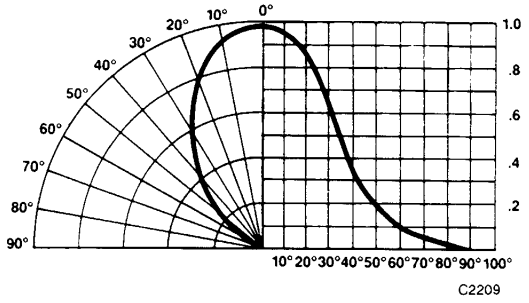

Fig. 5. Relative Luminous Intensity vs. Angular Displacement. HLMP-D150A

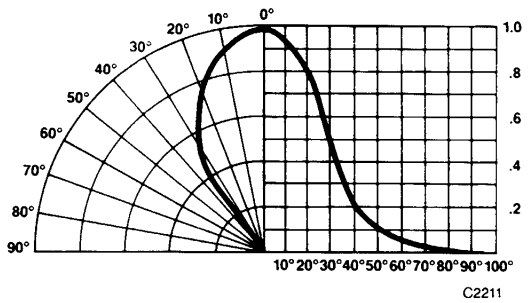

Fig. 6. Relative Luminous Intensity vs. Angular Displacement. HLMP-K150

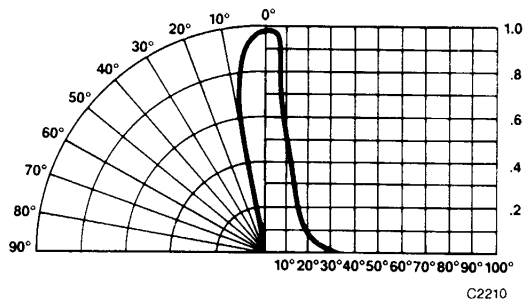

Fig. 7. Relative Luminous Intensity vs. Angular Displacement. HLMP-D155A

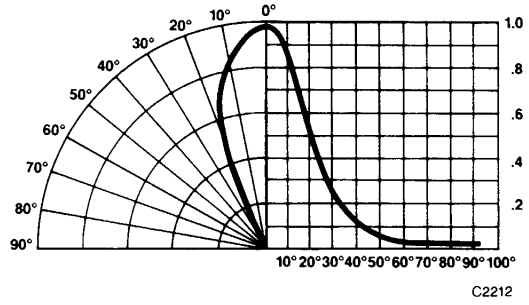

Fig. 8. Relative Luminous Intensity vs. Angular Displacement. HLMP-K155