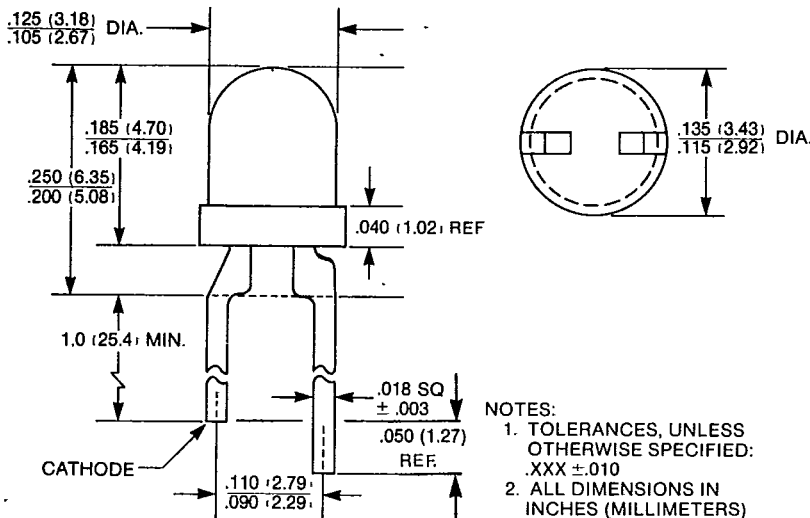


**RED CMD50640
YELLOW CMD5364X
HIGH EFFICIENCY GREEN CMD5464X/HLMP-15X3
HIGH EFFICIENCY RED CMD5764X/HLMP-130X**

PACKAGE DIMENSIONS



NOTES:
1. TOLERANCES, UNLESS OTHERWISE SPECIFIED: .XXX ±.010
2. ALL DIMENSIONS IN INCHES (MILLIMETERS)

C1533G

DESCRIPTION

These solid state indicators offer a variety of color selection. The High Efficiency Red and Yellow devices are made with gallium arsenide phosphide on gallium phosphide. The High Efficiency Green utilizes an improved gallium phosphide light emitting diode. All are encapsulated in epoxy packages with diffused lenses. Their small size, wide viewing angle, and small square leads contribute to their versatility as all-purpose indicators.

FEATURES

- Replacement for the HLMP-1300 and -1500 product series
- 100 mil lead spacing T-1
- High efficiency GaP light
- Versatile mounting on PC board or panel
- Wide viewing angle
- Diffused tinted lens

PHYSICAL CHARACTERISTICS

LUMINOUS INTENSITY at 25°C (mcd)

TYPE	SOURCE COLOR	LENS EFFECT	LUMINOUS INTENSITY at 25°C (mcd)		TEST CONDITIONS
			MIN.	TYP.	
CMD50640	Standard Red	Red Diffused	0.5	1.5	I _F = 20 mA
CMD53640			1.0	2.0	
CMD53641	Yellow	Yellow Diffused	1.5	3.0	I _F = 10 mA
CMD53642			2.5	4.5	
CMD54643 (HLMP-1503)			High Efficiency Green	Green Diffused	
CMD54644 (HLMP-1523)	6.0	10.0			I _F = 20 mA
CMD57640 (HLMP-1300)	High Efficiency Red	Red Diffused	1.0	2.0	I _F = 10 mA
CMD57641 (HLMP-1301)			2.0	2.5	
CMD57642 (HLMP-1302)			3.0	4.0	

CMD50640 CMD5364X CMD5464X CMD5764X

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ Unless Otherwise Specified)

Power dissipation at 25°C ambient	ALL BUT GREEN 120 mW	GREEN 120 mW
Derate linearly from 50°C	1.6 mA/ $^\circ\text{C}$	1.6 mA/ $^\circ\text{C}$
Storage and operating temperatures	-55°C to $+100^\circ\text{C}$	-55°C to $+100^\circ\text{C}$
Lead soldering time at 260°C (1/16 inch from body)	5 sec.	5 sec.
Continuous forward current at 25°C	30 mA	30 mA
Peak forward current (1 μsec pulse, 0.3% duty cycle)	1.0 A	90 mA
Reverse voltage	5.0 V	5.0 V

ELECTRO-OPTICAL CHARACTERISTICS (25°C Free Air Temperature Unless Otherwise Specified)

PARAMETER	SYMBOL	TEST COND.	UNITS	CMD50640*	CMD5364X	CMD5464X	CMD5764X
				RED	YELLOW	HI. EFF. GREEN	HI. EFF. RED
Forward voltage	typ. V_F	$I_F = 10\text{ mA}$	V	1.6	2.1	2.2*	2.0
	max.			2.0	3.0	3.0*	3.0
Peak wavelength	λ	$I_F = 10\text{ mA}$	nm	660	585	562	635
Spectral line half width		$I_F = 10\text{ mA}$	nm	20	35	30	45
Capacitance	typ. C	$V = 0, f = 1\text{ MHz}$	pF	23	45	20	45
Reverse voltage	min. V_{BR}	$I_F = 100\ \mu\text{A}$	V	5.0	5.0	5.0	5.0
Viewing angle (total)	typ. $2\theta_{1/2}$	See Fig. 3	degrees	90	90	90	90

* $I_F = 20\text{ mA}$

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

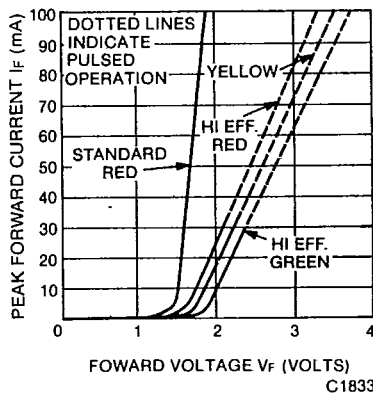


Fig. 1. Forward Current vs. Forward Voltage

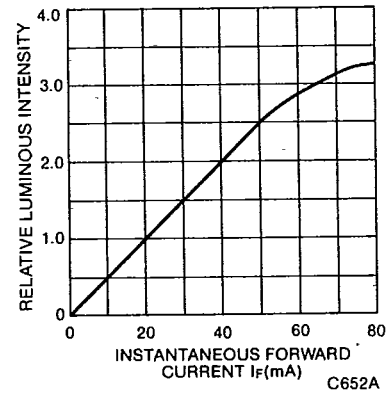


Fig. 2. Luminous Intensity vs. Forward Current

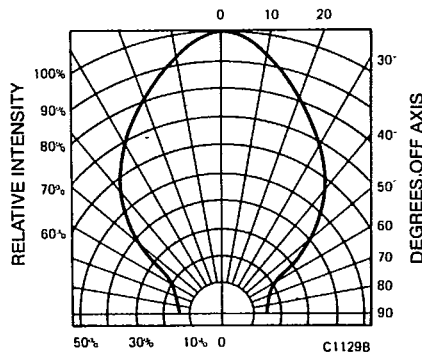


Fig. 3. Spatial Distribution

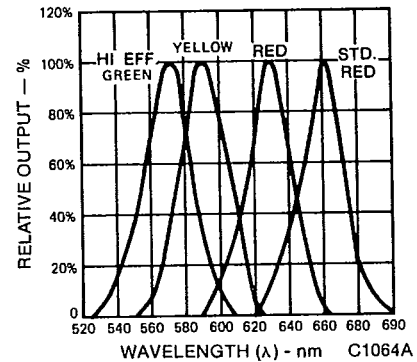


Fig. 4. Spectral Distribution