

DIFFUSED T-100 SOLID STATE LAMPS

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CHICAGO MINIATURE BRAND

CHICAGO MINIATURE LAMP

96D 01180 D T-41-21

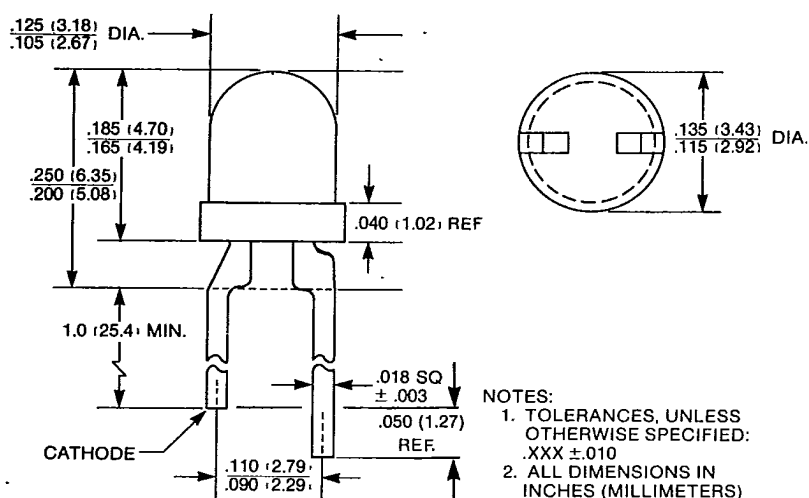
RED CMD50640

YELLOW CMD5364X

HIGH EFFICIENCY GREEN CMD5464X/HLMP-15X3

HIGH EFFICIENCY RED CMD5764X/HLMP-130X

PACKAGE DIMENSIONS



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

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			1.5	3.0	
CMD53642	Yellow	Yellow Diffused	2.5	4.5	I _F = 10 mA
CMD54643 (HLMP-1503)			2.0	5.0	
CMD54644 (HLMP-1523)			6.0	10.0	
CMD57640 (HLMP-1300)	High Efficiency Green	Green Diffused	1.0	2.0	I _F = 20 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	
Derate linearly from 50°C	
Storage and operating temperatures	
Lead soldering time at 260°C (1/16 inch from body)	
Continuous forward current at 25°C	
Peak forward current (1 μsec pulse, 0.3% duty cycle)	
Reverse voltage	

ALL BUT GREEN

120 mW
1.6 mA/ $^\circ\text{C}$
-55°C to $+100^\circ\text{C}$
5 sec.
30 mA
1.0 A
5.0 V

GREEN

120 mW
1.6 mA/ $^\circ\text{C}$
-55°C to $+100^\circ\text{C}$
5 sec.
30 mA
90 mA
5.0 V

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

PARAMETER	SYMBOL	TEST COND.	UNITS	CMD50640*	CMD5364X	CMD5464X	CMD5764X
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 MHz,	pF	23	45	20	45
Reverse voltage	min. V_{BR}	$I_F = 100\text{ }\mu\text{A}$	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)

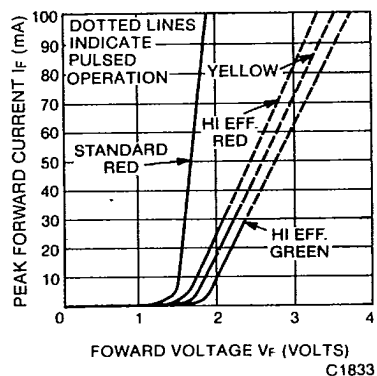


Fig. 1. Forward Current vs. Forward Voltage

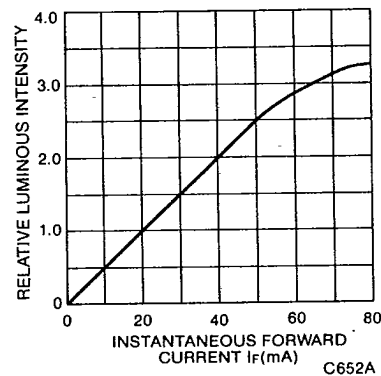


Fig. 2. Luminous Intensity vs. Forward Current

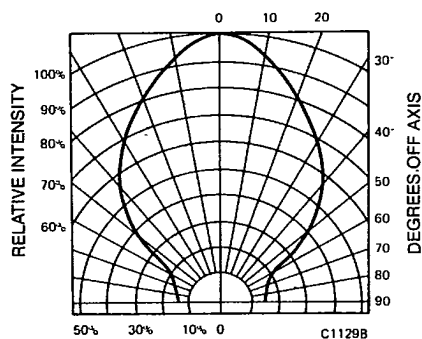


Fig. 3. Spatial Distribution

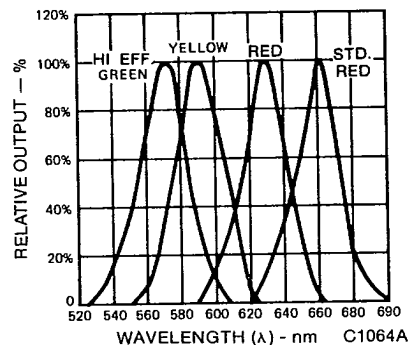


Fig. 4. Spectral Distribution