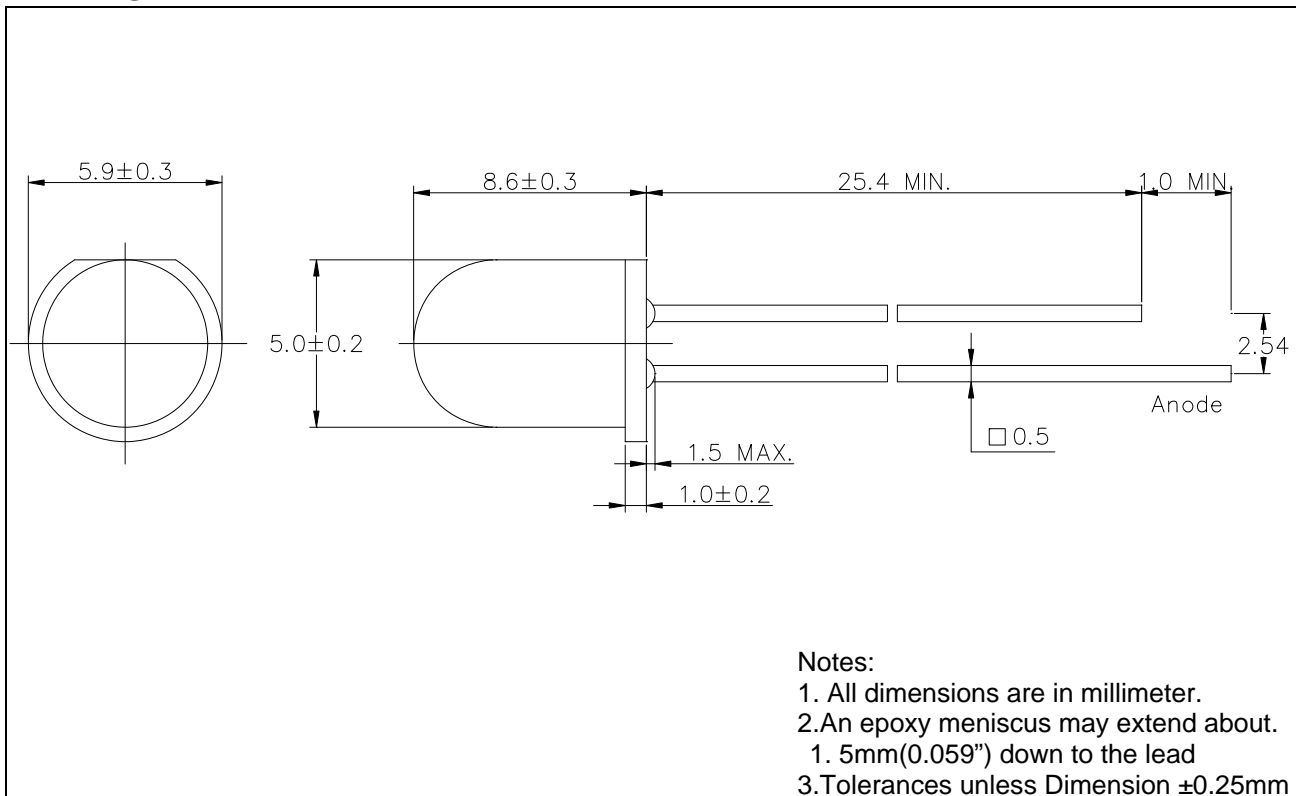


Part No.	AL-513HD	Diff No.
5 mm	Round	Type : LED Lamps

Package Dimension :



■ Features :

- Choice of various viewing angles.
- Available on Tape and Reel.
- Reliable and robust.

■ Descriptions :

- The series is specially designed for application requiring higher brightness.
- The LED lamps are available with different colors, intensity, epoxy colors etc.

■ Applications :

- TV set
- Monitor
- Telephone

Part No.

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5 mm

Round

Type : LED Lamps

PART NO.	Chip		Lens Color
	Material	Emitted Color	
AL-513HD	GaP/GaP	Hi-Effi Red	Red Diffused

■ Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Rating	Unit
Forward Current	I <sub>F</sub>	20	mA
Operating Temperature	T <sub>opr</sub>	-40 to +85	°C
Storage Temperature	T <sub>stg</sub>	-40 to +100	°C
Soldering Temperature	T <sub>sol</sub>	260 ±5	°C
Electrostatic Discharge	ESD	1000	V
Power Dissipation	P <sub>D</sub>	100	mW
Peak Forward Current (Duty 1/10@1KHz)	I <sub>F</sub> (Peak)	160	mA
Reverse Voltage	V <sub>R</sub>	5	V

■ Electronic Optical Characteristics :

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I <sub>v</sub>	/	8	/	mcd	I <sub>F</sub> =20mA
Viewing Angle	2θ <sub>1/2</sub>	/	50	/	deg	I <sub>F</sub> =20mA
Peak Wavelength	λ <sub>p</sub>	/	/	/	nm	I <sub>F</sub> =20mA
Dominant Wavelength	λ <sub>d</sub>	/	700	/	nm	I <sub>F</sub> =20mA
Spectrum Radiation Bandwidth	Δλ	/	90	/	nm	I <sub>F</sub> =20mA
Forward Voltage	V <sub>F</sub>	/	2.0	2.6	V	I <sub>F</sub> =20mA

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■ Reliability test items and conditions :

NO	Item	Test Conditions	Test Hours/Cycle	Sample Size	Ac/Re
1	Solder Heat	TEMP : 260°C ± 5°C	5 SEC	76 PCS	0/1
2	Temperature Cycle	H : +85°C 30min ∫ 5min L : -55°C 30min	50 CYCLES	76 PCS	0/1
3	Thermal Shock	H : +100°C 5min ∫ 10set L : -10°C 5min	50 CYCLES	76 PCS	0/1
4	High Temperature Storage	TEMP : 100°C	1000 HRS	76 PCS	0/1
5	Low Temperature Storage	TEMP : -55°C	1000 HRS	76 PCS	0/1
6	DC Operating Life	TEMP : 25°C I <sub>F</sub> =20mA	1000 HRS	76 PCS	0/1
7	High Temperature / High Humidity	85°C / 85%RH	1000 HRS	76 PCS	0/1

Part No.

AL-513HD

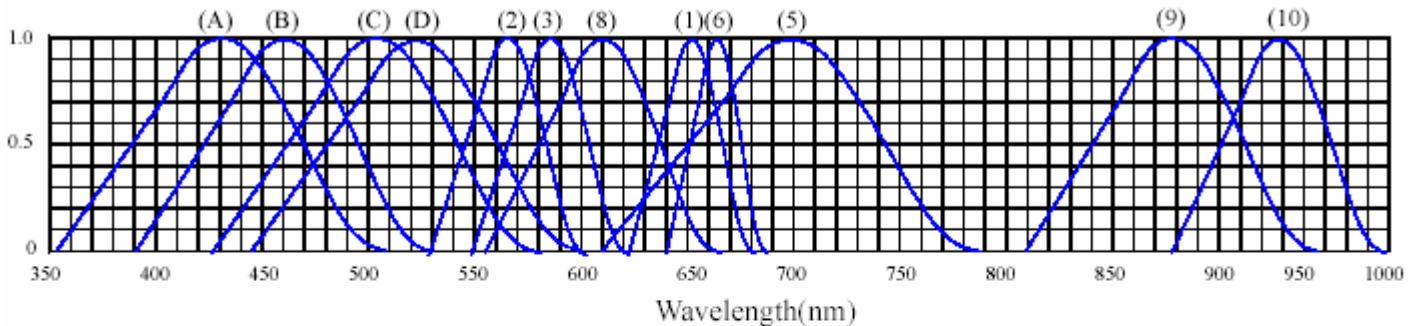
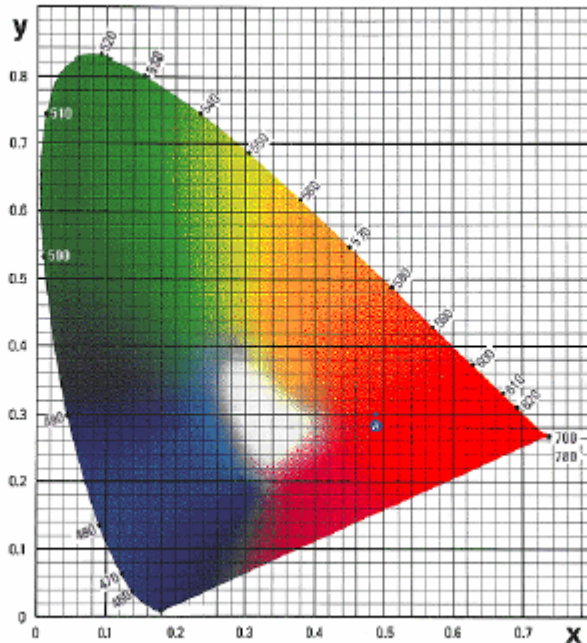
Diff No.

5 mm

Round

Type : LED Lamps

◆ TYPICAL ELECTRICAL-OPTICAL CHARACTERISTICS CURVES



RELATIVE INTENSITY VS. WAVELENGTH( $\lambda_p$ )

- (1) GaAsP/GaAs 655nm/Red
- (2) GaP 568nm/ Yellow Green
- (3) GaAsP/GaP 585nm/Yellow
- (4) GaAsP/GaP 635nm/Orange & Hi-Eff Red
- (5) GaP 700nm/Bright Red
- (6) GaAlAs/GaAs 660nm/Super Red
- (8) GaAsP/GaP 610nm/Super Red

- (9)- GaAlAs 880nm
- (10)-GaAs/GaAs&GaAlAs/GaAs 940nm
- (A)- GaN 430nm/Blue
- (B)- InGaN 470nm/Blue
- (C)- InGaN 502nm/Ultra Green
- (D)- InGaN 523nm/Ultra Green

Part No.

AL-513HD

Diff No.

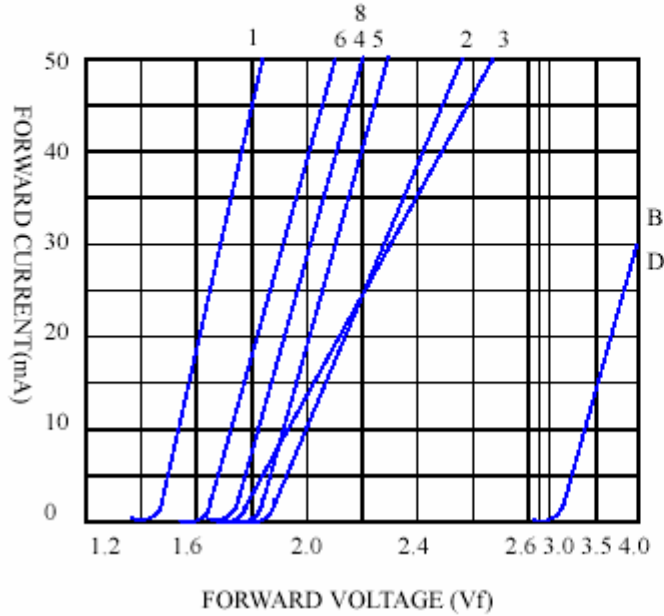
5 mm

Round

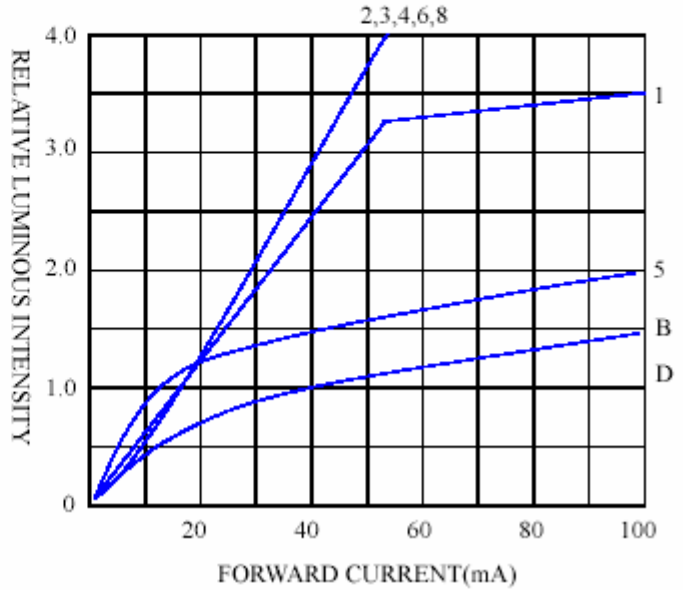
Type : LED Lamps

◆ CHARACTERISTICS DIAGRAMS

FORWARD CURRENT VS. FORWARD VOLTAGE



RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



FORWARD CURRENT VS. AMBIENT TEMPERATURE

