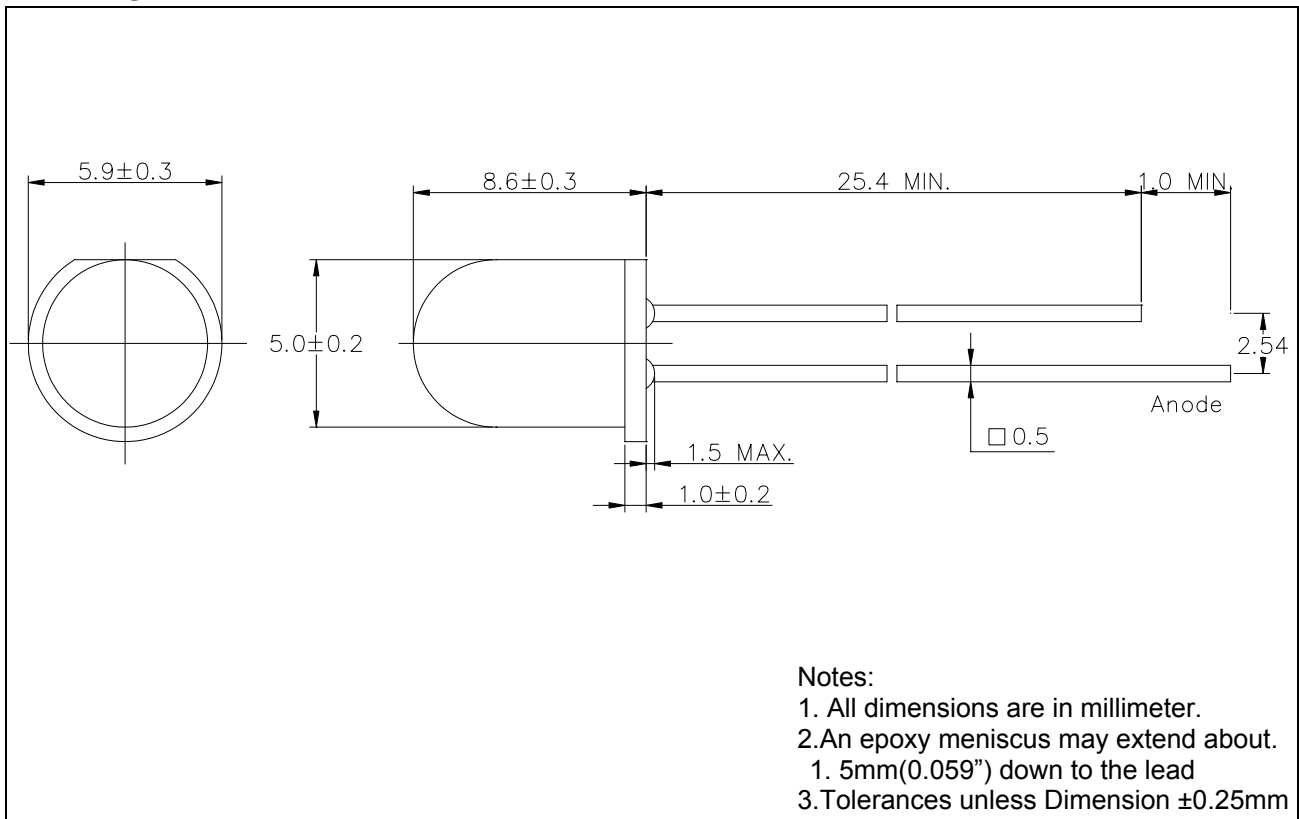


Part No.	<b>AL-513ID</b>	Diff No.
5 mm	Round	Type : LED Lamps

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.

**AL-513ID**

Diff No.

5 mm

Round

Type : LED Lamps

PART NO.	Chip		Lens Color
	Material	Emitted Color	
AL-513ID	GaAsP/GaP	Hi-Eff Red	Red Diffused

■ Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Rating	Unit
Forward Current	$I_F$	20	mA
Operating Temperature	$T_{opr}$	-40 to +85	°C
Storage Temperature	$T_{stg}$	-40 to +100	°C
Soldering Temperature	$T_{sol}$	260 ±5	°C
Electrostatic Discharge	ESD	1000	V
Power Dissipation	$P_D$	100	mW
Peak Forward Current (Duty 1/10@1KHz)	$I_F$ (Peak)	160	mA
Reverse Voltage	$V_R$	5	V

■ Electronic Optical Characteristics :

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	$I_v$	/	80	/	mcd	$I_F=20mA$
Viewing Angle	2θ1/2	/	35	/	deg	$I_F=20mA$
Peak Wavelength	$\lambda_p$	/	640	/	nm	$I_F=20mA$
Dominant Wavelength	$\lambda_d$	/	635	/	nm	$I_F=20mA$
Spectrum Radiation Bandwidth	$\Delta \lambda$	/	45	/	nm	$I_F=20mA$
Forward Voltage	$V_F$	/	2.0	2.6	V	$I_F=20mA$

Part No.

**AL-513ID**

Diff No.

5 mm

Round

Type : LED Lamps

■ 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-513ID**

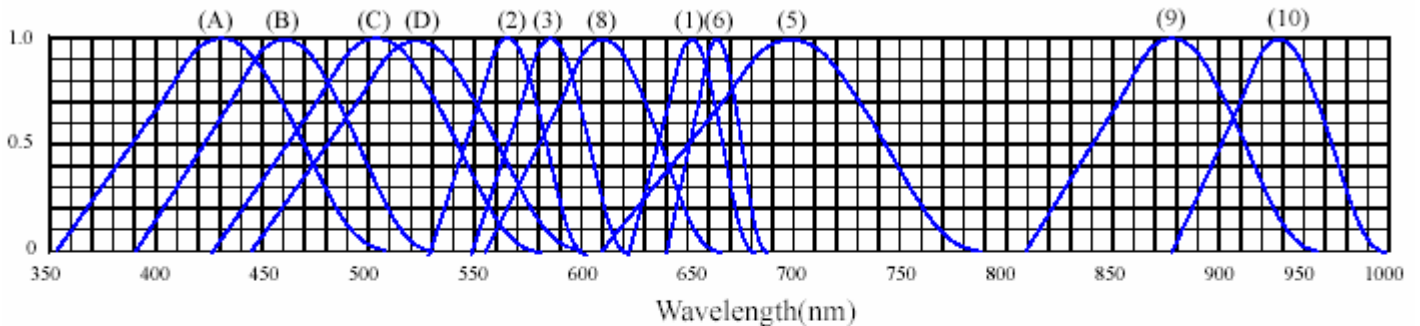
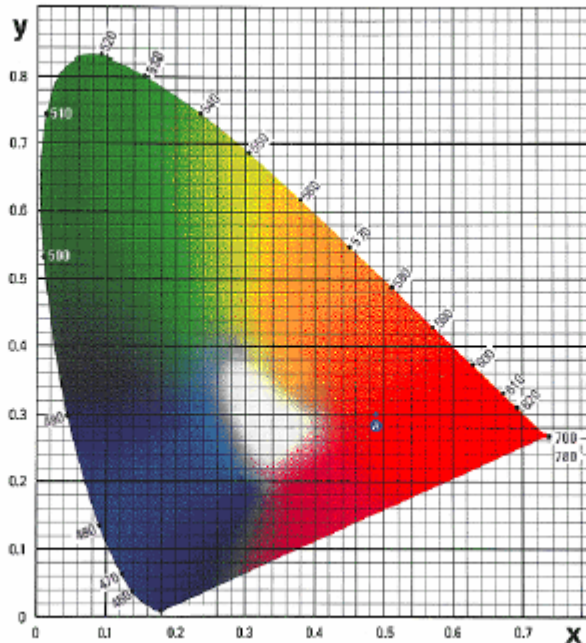
Diff No.

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-513ID**

Diff No.

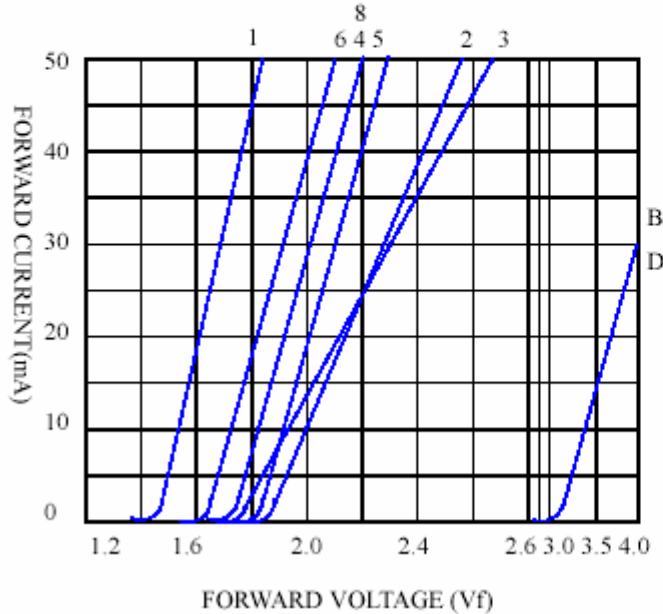
5 mm

Round

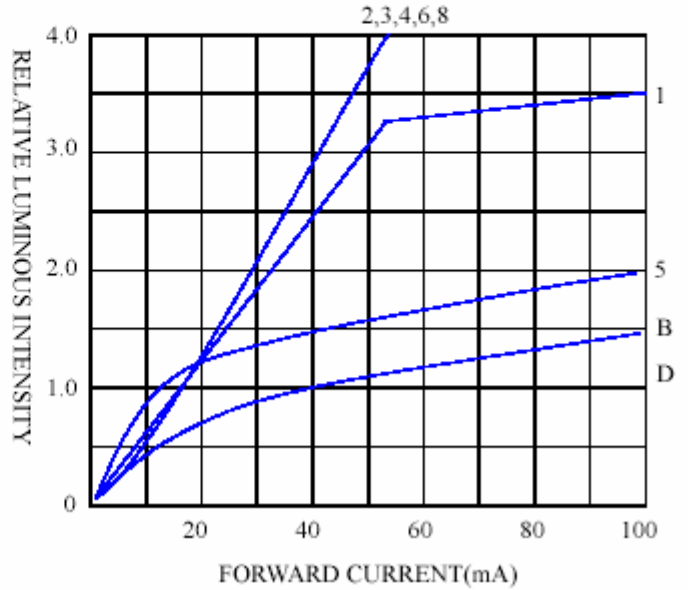
Type : LED Lamps

◆ CHARACTERISTICS DIAGRAMS

FORWARD CURRENT VS. FORWARD VOLTAGE



RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



FORWARD CURRENT VS. AMBIENT TEMPERATURE

