

**AT225-14-45**

**DATA SHEET**

REV. : 1.0

DATE : 20-Apr.-2006

■ **FEATURES:**

- High reliability.
- High radiant intensity.
- Peak wavelength at 850nm.
- Standard  $\phi 5$ mm.
- Lead Free product, in compliance with RoHS.

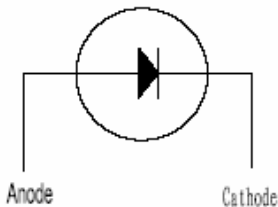
■ **DESCRIPTIONS:**

- AT225-14-45 is a high response speed and high radiant intensity infrared emitting diode with exceptionally stable characteristics and high illumination sensitivity.
- Moulded in 5mm diameter and water clear package.

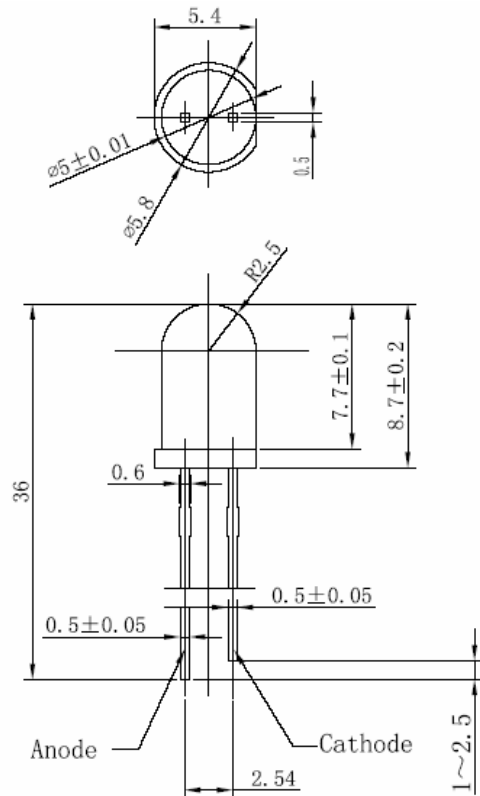
■ **APPLICATIONS:**

- Free air transmission system.
- Security System.
- Infrared applied system
- Night viewing.

■ **INTERNAL CIRCUIT:**



■ **DIMENSIONS:**



**NOTE :** 1. All dimensions are in millimeter, tolerance is  $\pm 0.25$  unless otherwise noted.  
 2. Epoxy meniscus extends  $\leq 1$  mm down to the lead is allowed.

**■ ABSOLUTE MAXIMUM RATINGS AT Ta=25**

Parameter	Symbol	Ratings	Unit
Continuous Forward Current	I <sub>F</sub>	50	mA
Power Dissipation	P <sub>D</sub>	100	mW
Peak Forward Current	I <sub>FP</sub>	1	A
Reverse voltage	V <sub>R</sub>	5	V
Operating Temperature	T <sub>opr</sub>	-40 ~ +85	
Storage Temperature	T <sub>stg</sub>	-40 ~ +85	
Soldering Temperature	T <sub>sol</sub>	270 for 6 sec Max (2mm from Body)	

**NOTE: I<sub>FP</sub> Conditions Pulse Width 100μS And Duty 1%.**

**■ TYPICAL ELECTRICAL & OPTICAL CHARACTERISTICS ( Ta=25 )**

Parameter	Symbol	Min.	Type	Max.	Unit	Test Condition
Radiant Intensity	E <sub>e</sub>		25		mW/sr	I <sub>F</sub> =20mA
			100		mW/sr	I <sub>F</sub> =100mA, t <sub>p</sub> =100 μ s, t <sub>p</sub> /T=0.01
			800		mW/sr	I <sub>F</sub> =1000mA, t <sub>p</sub> =100 μ s, t <sub>p</sub> /T=0.01
Forward Voltage	V <sub>F</sub>		1.4	1.6	V	I <sub>F</sub> =20mA
Reverse Current	I <sub>R</sub>			10	μA	V <sub>R</sub> =5V
Peak Wavelength	λ <sub>p</sub>		850			I <sub>F</sub> =20mA
Spectral Line Half-Width	Δλ		40		nm	I <sub>F</sub> =20mA
View Angle	2θ <sub>1/2</sub>		22.5		deg	I <sub>F</sub> =20mA

## ■ RELIABILITY TEST ITEMS AND CONDITIONS :

NO	Item	Test Conditions	Test Hours/Cycle	Sample Quantity	Test Result
1	Solder Heat	TEMP : 270 ±3	10 SEC	11 pcs	0 DEFECT
2	Temperature Cycle	H:+85 60min <div style="text-align: center;"> <math>\updownarrow</math>                      10min                 </div> L:-25 60min	16 cycles	22 pcs	0 DEFECT
3	Thermal Shock	H:+85 30min <div style="text-align: center;"> <math>\updownarrow</math>                      30sec                 </div> L:-25 30min	10 cycles	11 pcs	0 DEFECT
4	High Temperature Storage	TEMP : +85	1000 HRS	22 pcs	0 DEFECT
5	Low Temperature Storage	TEMP : -25	1000 HRS	22 pcs	0 DEFECT
6	High Temperature High Humidity Storage	85 /93% RH	1000HRS	22 pcs	0 DEFECT

■ TYPICAL ELECTRO-OPTICAL CHARACTERISTICS CURVES:

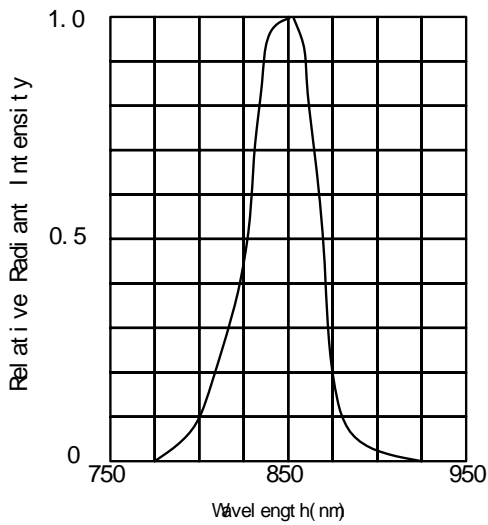


FIG.1 SPECTRAL DISTRIBUTION

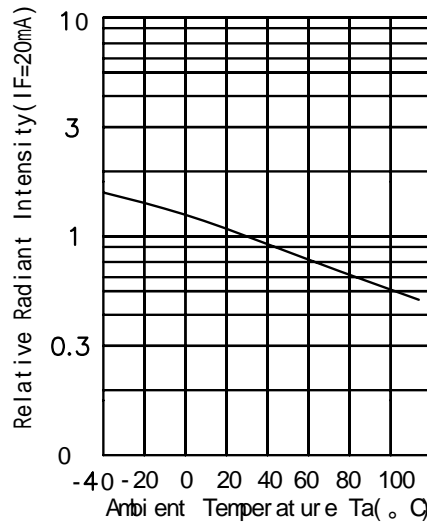


FIG.2 RELATIVE RADIANT INTENSITY VS AMBIENT TEMPERATURE

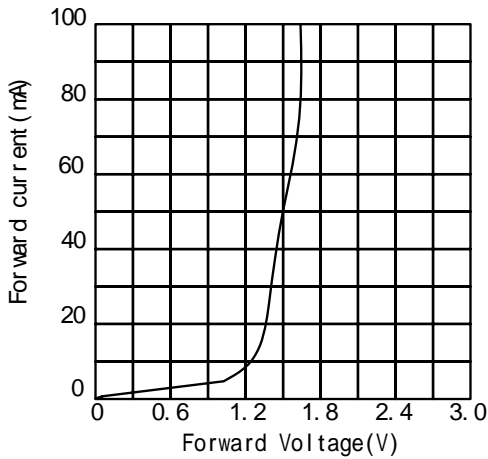


FIG.3 FORWARD CURRENT VS FORWARD VOLTAGE

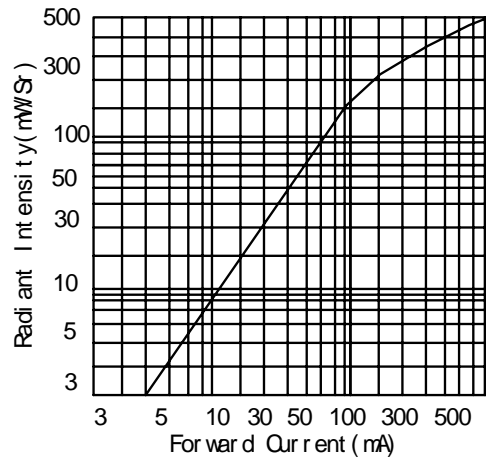


FIG.4 FORWARD CURRENT VS RADIANT INTENSITY

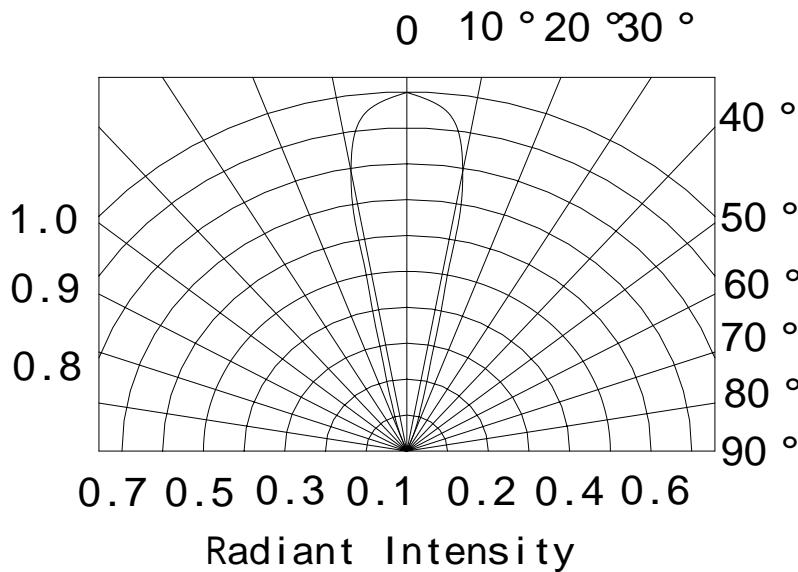


Fig.5 Angle Vs Radiant Intensity