

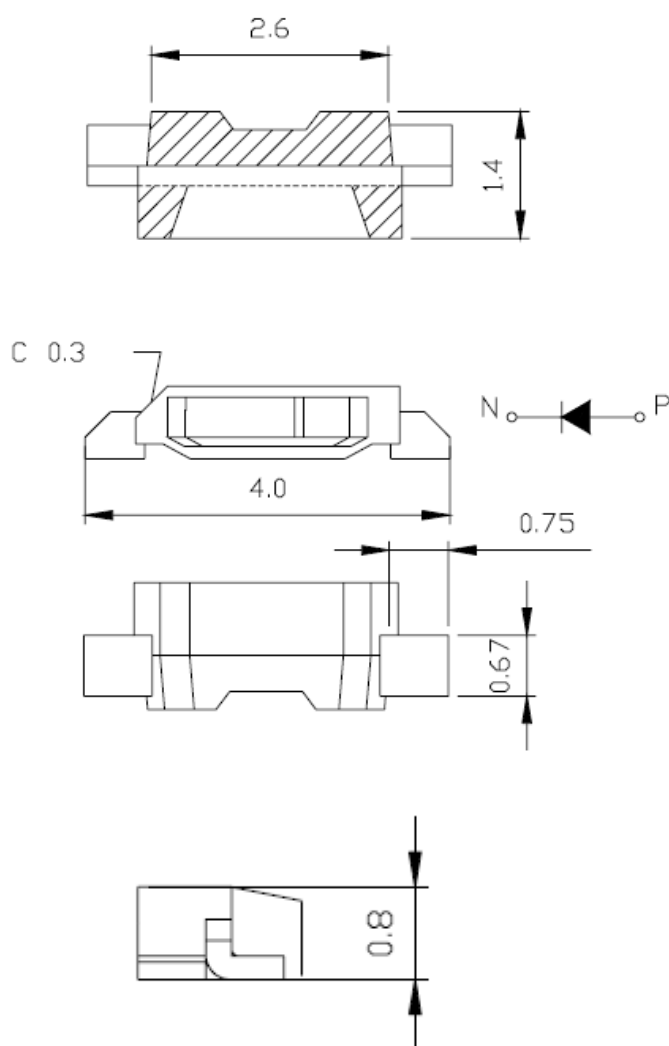
SURFACE MOUNT CHIP LED LAMPS

TFT DISPLAY LED

Part Number: 99-215UWC/TR8

Package outlines & Re-flow Profile

■Reflow Temp/Time



■Soldering iron

Basic spec is $\leq 5\text{sec}$ when 260°C . If temperature is higher, time should be shorter ($+10^\circ\text{C} \rightarrow -1\text{sec}$). Power dissipation of iron should be smaller than 15W, and temperatures should be controllable. Surface temperature of the device should be under 230°C .

ITEM	MATERIALS
Resin (mold)	Epoxy
Lens color	Yellow Diffused
Printed circuit board	BT
Emitted color	White
Material	InGaN

NOTES:

1. All dimensions are in millimeters (inches);
2. Tolerances are $\pm 0.1\text{mm}$ (0.004inch) unless otherwise noted.
3. Polarity referring onto the cathode mark is reversed on the red.

SURFACE MOUNT CHIP LED LAMPS**Part Number: 99-215UWC/TR8****ELECTRO-OPTICAL CHARACTERISTICS****(T_A=25°C)**

Parameter	Test Condition	Symbol	Value			Unit
			MIN.	TYP.	MAX.	
Viewing angle at 50% I _V	I _F =10mA	2 θ 1/2	115			Deg
Forward voltage	I _F =20mA	V _F	---	3.4	3.8	V
Luminous intensity	I _F =20mA	I _V	500	1100	---	mcd
Chromaticity	I _F =20mA	X	---	0.31	---	---
		Y	---	0.32	---	
Peak pulsing current (1/10 duty f=1kHz)		I _{FP}	60			mA

Absolute maximum ratings (SDR)**(T_A=25°C)**

Parameter	Symbol	Value	Unit
Forward current	I _F	30	mA
Reverse voltage	V _R	5	V
Reverse current	I _R	50	μA
Electrostatic Discharge	ESD	150	V
Power Dissipation	P _D	120	mW
Operating temperature range	Top	-30 ~+85	°C
Storage temperature range	Tstg	-40 ~+100	°C

SURFACE MOUNT CHIP LED LAMPS**Part Number: 99-215UWC/TR8****Test items and results of reliability**

NO	ITEM	Test Conditions	Test hours/cycle	Sample Q'ty	Ac/Re
1	Solder Heat	Temp : 260℃±5℃	5 sec	30 pcs	0/1
2	Temperature Cycle	-40℃ 30min	100 cycles	30 pcs	0/1
		-25℃ 5min			
		-105℃ 30min			
		-25℃ 5min			
3	Thermal Shock	-40℃ 5min	20 cycles	30 pcs	0/1
		-105℃ 5min			
4	High Temperature Storage	Temp : 85℃	1000 hrs	30 pcs	0/1
5	Low Temperature Storage	Temp : -35℃	1000 hrs	30 pcs	0/1
6	DC Operating Life	I _F =350mA	1000 hrs	30 pcs	0/1
7	High Temperature / High Humidity	Ta=60℃ R.H 90%	1000 hrs	30 pcs	0/1

* Refer to reliability test standard specification for in this line.

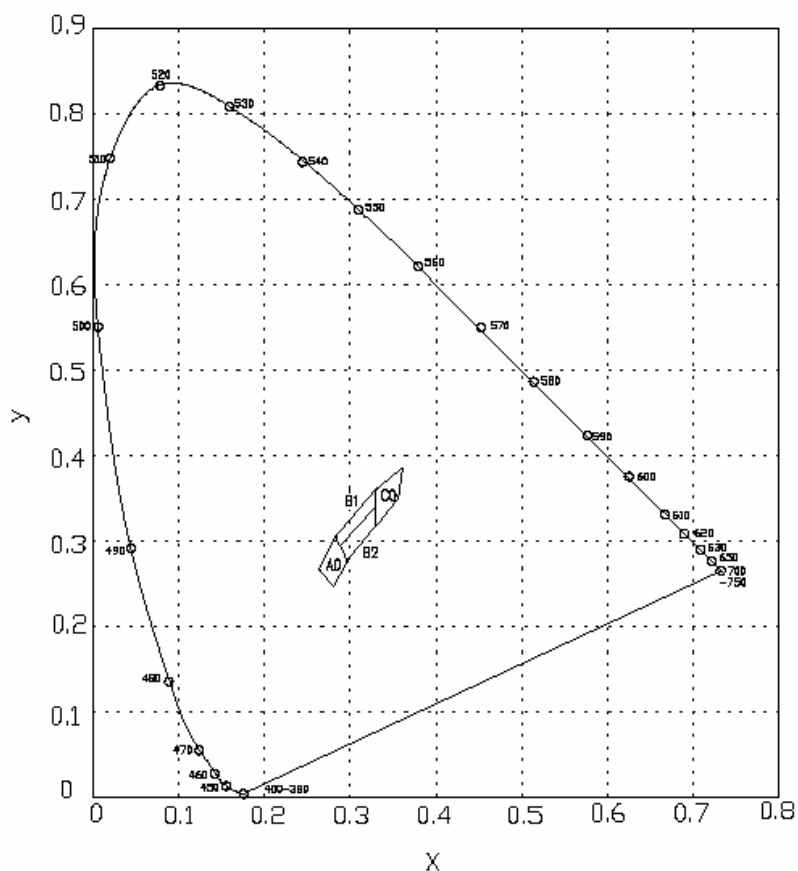
SURFACE MOUNT CHIP LED LAMPS**Part Number: 99-215UWC/TR8****Color Ranks****Color Ranks**

	Rank A0			
x	0.280	0.264	0.283	0.296
y	0.248	0.267	0.305	0.276

	Rank B1			
x	0.287	0.283	0.330	0.330
y	0.295	0.305	0.360	0.339

	Rank B2			
x	0.296	0.287	0.330	0.330
y	0.276	0.295	0.339	0.318

	Rank C0			
x	0.330	0.330	0.361	0.356
y	0.318	0.360	0.385	0.351

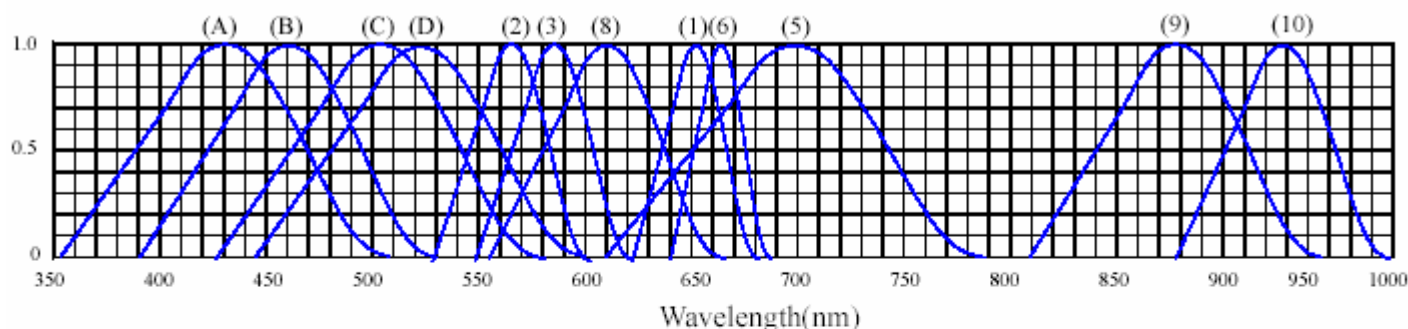
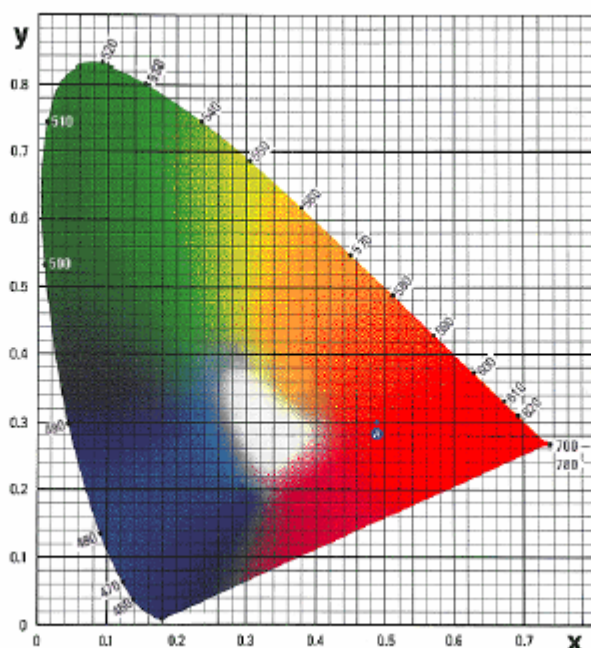
CIE Chromaticity Diagram

SURFACE MOUNT HIP LED LAMPS

Part Number: 99-215UWC/TR8

Typical Electro-Optical Characteristic Curves

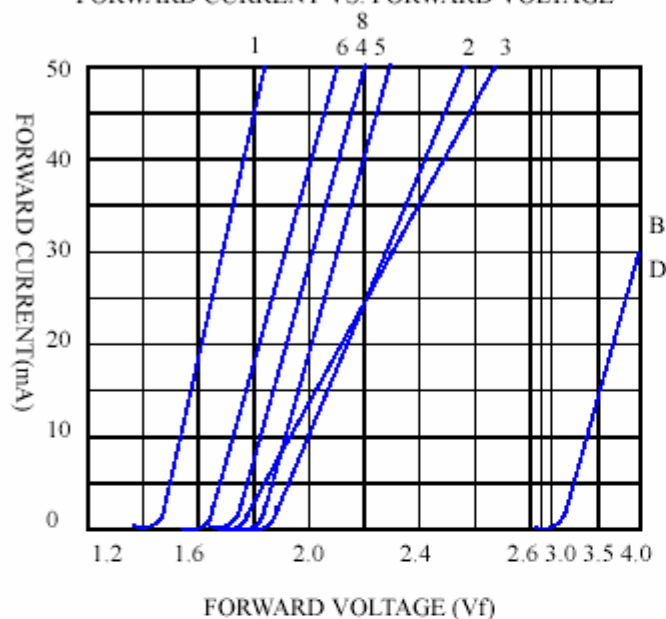
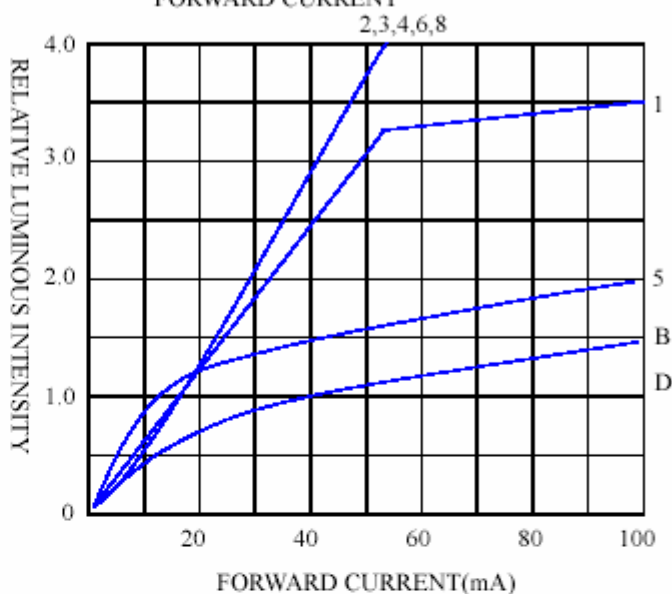
◆ TYPICAL ELECTRICAL-OPTICAL CHARACTERISTICS CURVES



RELATIVE INTENSITY VS. WAVELENGTH(λ_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

SURFACE MOUNT HIP LED LAMPS**Part Number: 99-215UWC/TR8****Typical Electro-Optical Characteristic Curves**◆ **CHARACTERISTICS DIAGRAMS****FORWARD CURRENT VS. FORWARD VOLTAGE****RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT****FORWARD CURRENT VS. AMBIENT TEMPERATURE**