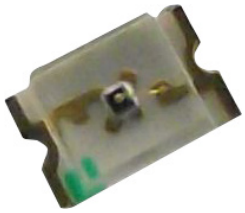
LED Lamps
SMD Display

multicomp PRO



Specifications

Dice Material	: GaAlAs
Peak Wave Length	: 660nm
Emitted Colour	: Super Red
Viewing Angle	: 120°
Epoxy Colour	: Water Clear
IV	: 5.1 mcd
Package Size	: 2mm × 1.25mm × 0.8mm, SMD LED

Electrical/Optical characteristics at T_A = 25°C

Parameter	Symbol	Min.	Typ	Max.	Unit	Test
Luminous Intensity	IV	2.2	5.1	9	mcd	IF = 5mA
Viewing Angle	2θ½		120		deg	
Peak Emission Wavelength	λp		660		nm	
Dominant Wavelength	λD	632	643	660	nm	
Spectral Line Half-Width	Δλ		20		nm	
Forward Voltage	VF	1.6	1.7	1.8	V	
Power Dissipation	Pd			80	mW	
Peak Forward Current (Duty1/10 @ 1kHz)	IF (Peak)			100	mA	
Recommended Operating Current	IF (Rec)		20		mA	

Absolute Maximum Ratings : (T_A = 25°C)

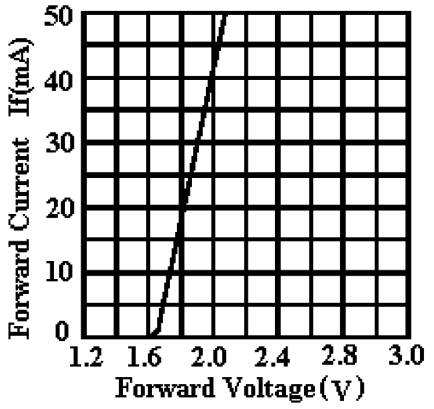
Reverse Voltage	: 5 Volt
Reverse Current	: 10μA (V_R = 5V)
Operating Temperature Range	: -40°C to +85°C
Storage Temperature Range	: -40°C to +100°C
Lead Soldering Temperature Range {1.6mm (1/16 inch) from body}	: 260°C For 5 Seconds

Reliability test For LED Lamps

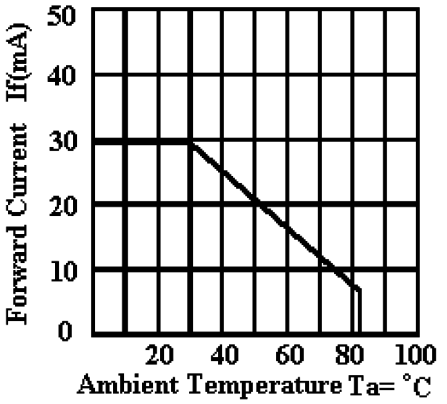
Item	Test Conditions	Test Time/Cycle	Sample Size	Ac/Re
DC Operating Life	Temperature : 25°C IF : 20mA	1,000 Hrs.	20 Pcs.	0/1
High Temperature High Humidity	Temperature : 85°C 85%RH			
High Temperature Storage	Temperature : 100°C			
Low Temperature Storage	Temperature : -40°C			
Temperature Cycling	85°C~ 25°C~-35°C 15min~ 5min~ 15min	15 Cycles		
Thermal Shock	85°C~ 25°C~-10°C 5min~ 10sec ~ 5min			
Solder Heat	Temperature : 260°C ±5°C	10 Sec.		

Typical Electro-Optical Characteristics Curves

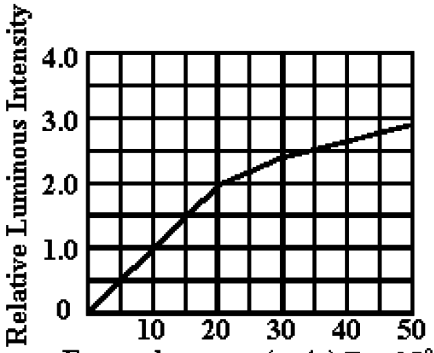
Super Red (GaAlAs) λP=660nm)



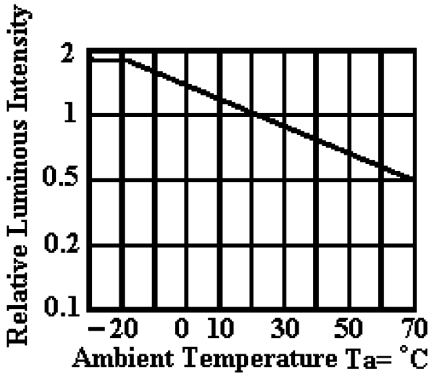
Forward current vs. Forward Voltage



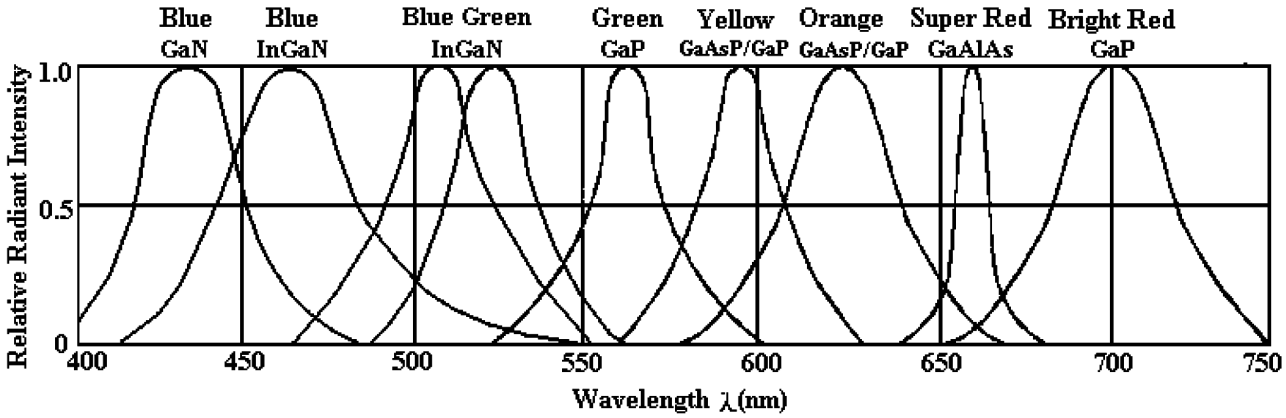
Forward current Derating curve



Luminous Intensity vs. Forward current

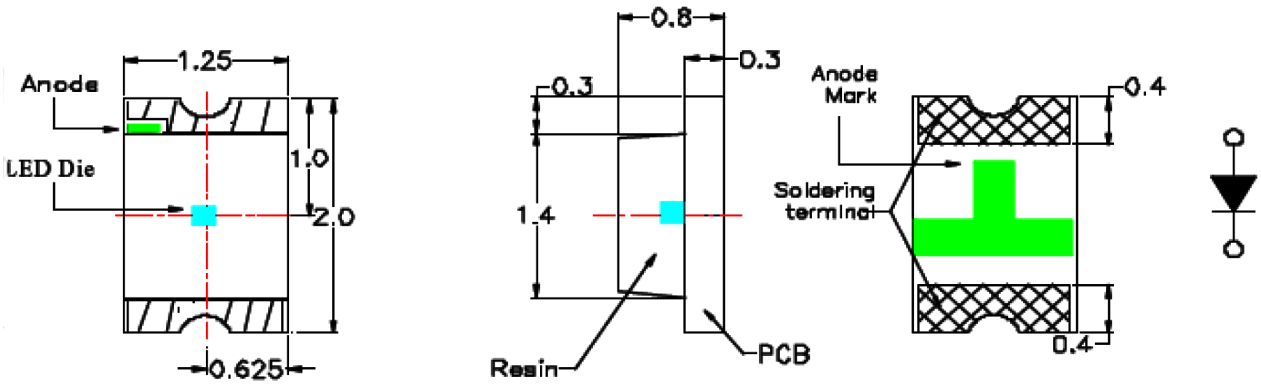


Luminous Intensity vs. Ambient Temperature



RELATIVE INTENSITY VS. WAVELENGTH

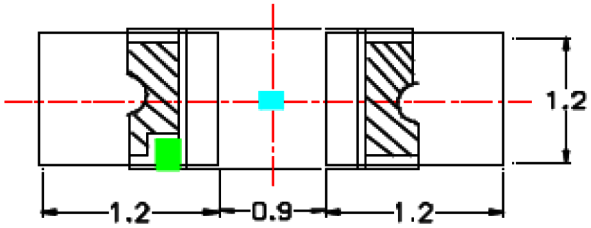
Dimensions:



1. Soldering terminal may shift in x, y direction.

Dimensions : Millimetres
Tolerance : ±0.1mm

Recommended Soldering Pad Dimensions:



Dimensions : Millimetres

Luminous Intensity BIN Limits

Test Condition : @ 5mA		
BIN Code	**Ivmin (mcd)**	**Ivmax (mcd)**
C2	2.2	3.6
D1	3.6	5.1
D2	5.1	7.2
E1	7.2	9

Dominant Wavelength BIN Limits

Test Condition : @ 5mA		
BIN Code	**λᴅmin (nm)**	**Iᴅmax (nm)**
1	632	660

Forward Voltage BIN Limits

Test Condition : @ 5mA		
BIN Code	**$V_F$min (V)**	**$V_F$max (V)**
1	1.5	1.6
2	1.6	1.7
3	1.7	1.8

Part Number Table

Description	Part Number
LED, Red, SMD, 1.25mm × 1.4mm, 20mA, 1.85V, 643 nm	MCL-S270SRC