Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

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LTH3MM12V Series
3mm (T-1) Through Hole LED
Built in Resistor for 12VDC

LTH3MM12VFR4100 - Red Water-Clear T-1 (3 mm) LED

Applications

- Automotive
- Indoor and Outdoor Indication
- Industrial
- Appliances and Consumer Equipments
- Storage Servers
- Boats
- Railway
- Electronic Devices
- Residential and Landscape Lighting
- Infrastructure

Key Features

- Made with AlInGaP (Orange-Red)
- Through-hole technology
- Integrated resistor for 12VDC operation
- With Flange
- Water-Clear Lens
- LED Bulb Size: 3mm (T-1), also available in 5mm (T-1 3/4)
- RoHS and REACH Compliant
- High-Brightness LED
- Available in 5 colors (red, green, white, blue and yellow)
- Viewing Angle: 30º (red, green, blue, yellow) and 35º (white)
- Moisture Sensitive Level (MSL): 2

Ordering Data

The LTH3MM12V Series is available in a range of standard features and options.
To specify your LED, select one option from each column.

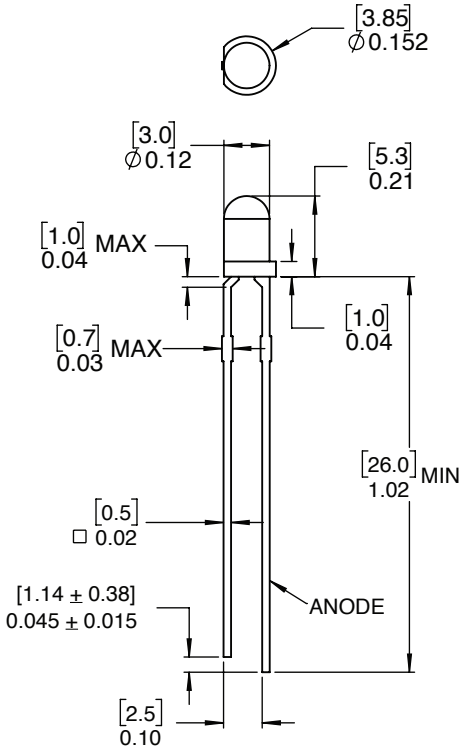
Series	Mounting Type	Size	Voltage	Flange	Shape	Lens Color	Output Color LED
L	TH	3MM	12V	F	R	4	

- Series: L → LED
- Mounting Type: TH → Through-Hole
- Size: **3MM** 3mm; **5MM*** 5mm
- Voltage: 12V → 12V
- Flange: F → With Flange
- Shape: R → Round Top
- Lens Color: 4 → Water Clear
- Output Color LED: Red **100**; White **400**; Green **500**; Blue **600**; Yellow **700**

*For 5mm option, please consult LTH5MM12V Series' datasheet

Part Numbers	Color
LTH3MM12VFR4100	Red
LTH3MM12VFR4400	White
LTH3MM12VFR4500	Green
LTH3MM12VFR4600	Blue
LTH3MM12VFR4700	Yellow

Product Dimensions



Notes:
1. All dimensions are in [millimeters] inches
2. Tolerance is ±[0.25] 0.01 unless otherwise noted.
3. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice

Product Dimensions

ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

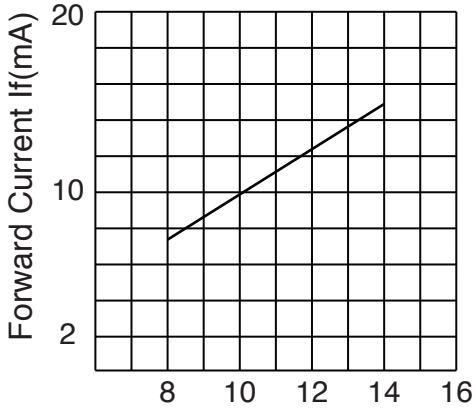
Parameter	Symbol	Ratings	Unit
Peak Forward Current (duty 1/10 @ 1KHz)	I_{FP}	100	mA
Recommended Operating Current	$I_{F(REC)}$	20	mA
Power Dissipation	P_D	85	mW
Reverse Voltage	V_R	5	V
Operating Temperature Range	T_{OPR}	-40~+85	°C
Storage Temperature Range	T_{STG}	-40~+100	°C
Lead Soldering Temperature Range 1.6mm (1/16 inch) from body	T_{SOL}	260°C for 5 seconds	

OPTICAL-ELECTRICAL CHARACTERISTICS (Ta=25°C)

Parameter	**Symbol**	**Test Condition**	**Min**	**Typ**	**Max**	**Unit**
Luminous Intensity	I_V	I_F=12mA	1800	2500	3200	mcd
Peak Emission Wavelength	λ_P		--	635	--	nm
Dominant Wavelength	λ_D		620	625	630	nm
Forward Voltage	V_F		10	12	13	V
Spectral Line Half-Width	$\Delta\lambda$		--	17	--	nm
Viewing Angle	$2\Theta_{1/2}$		--	30	--	deg
Reverse Current	I_R	V_R=5V	--	--	10	μA

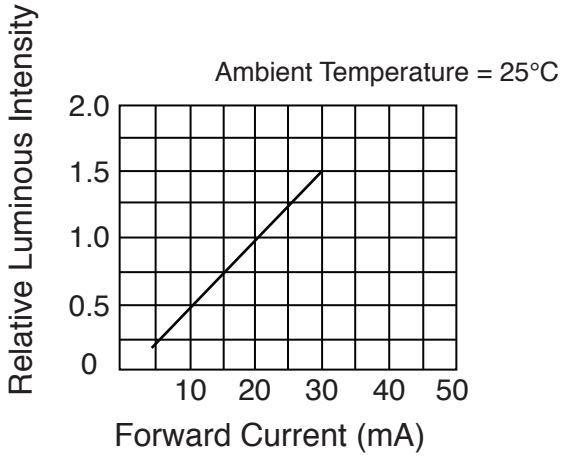
Product Specifications

Typical Electrical-Optical Characteristic Curves

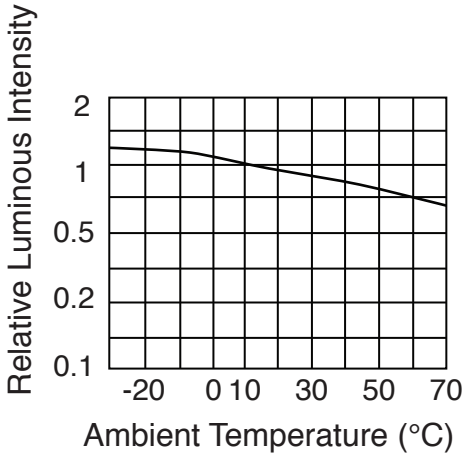


Forward Current vs. Forward Voltage

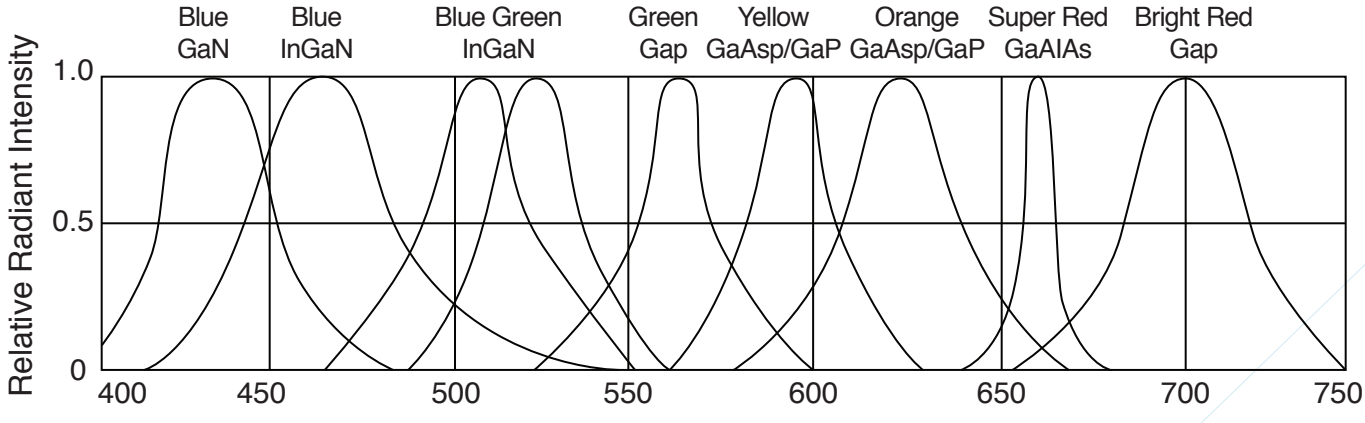
Forward Current Derating curve



Luminous Intensity vs. Forward current



Luminous Intensity vs. Ambient Temperature



Relative Intensity vs. Wavelength

Application Notes

1. Storage

The Storage Temperature and RH are: 5°C ~ 30°C, RH 60% or less.

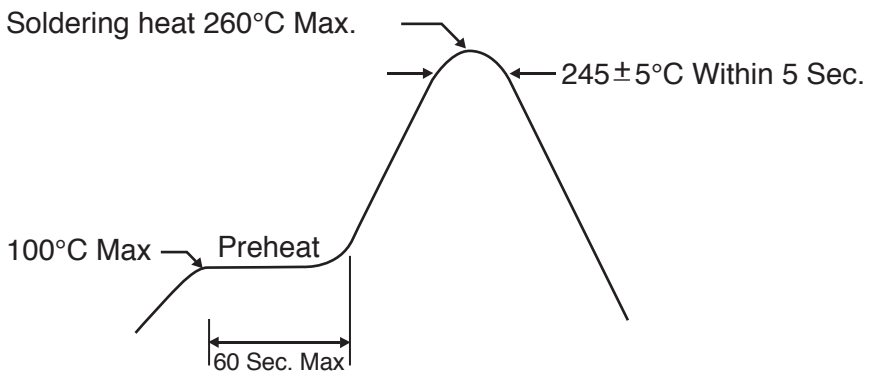
We suggest our customers use our products within a year.
If the moisture absorbent material (silica gel) has faded away or the LEDs exceeded the storage time, bake treat more than 24 hours at 60°C ±5°C.

2. Electrostatic Discharge (ESD)

Static electricity or surge voltage will damage the LEDs.
Recommendations: Use a conductive wrist band or anti-electrostatic glove when handling these LEDs. All devices, equipment and machinery must be properly grounded.
Work tables, storage racks, etc. should be properly grounded. In the event of a manual working in process, make sure the devices are well protected from ESD at any time.

3. Recommended Soldering Condition

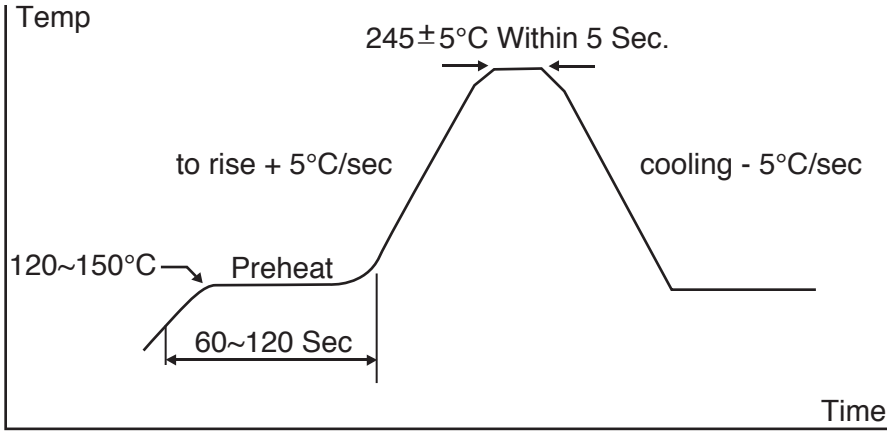
Soldering heat (DIP)



Temperature at tip of soldering iron: 350°C Max
Soldering time: 3 sec ±1 sec (once only)

Application Notes

4. Reflow Profile



Compliances and Approvals