

QT-Brightek Corporation

1.5" 8x8 Dot Matrix

Part No.: GMZ15XX88_series

Table of Contents:

Introduction	3
Electrical / Optical Characteristic (Ta=25 °C)	4
Absolute Maximum Rating	4
Pin Configuration	7
Characteristic Curves.....	8
Solder Profile	10
Package Dimensions	11
Ordering Information	12
Revision History	13
Disclaimer	13

Introduction

Feature:

- Low power consumption
- Packed in foam
- AllInGaP technology for R/S/Y/O/AG
- InGaN technology for IG/IB
- Z=C: Anode Row, Cathode column or A: Anode Column, Cathode Row
- XX= Color

Description:

These 1.5" 8x8 dot matrix displays are made with white dots and a grey surface.

Application:

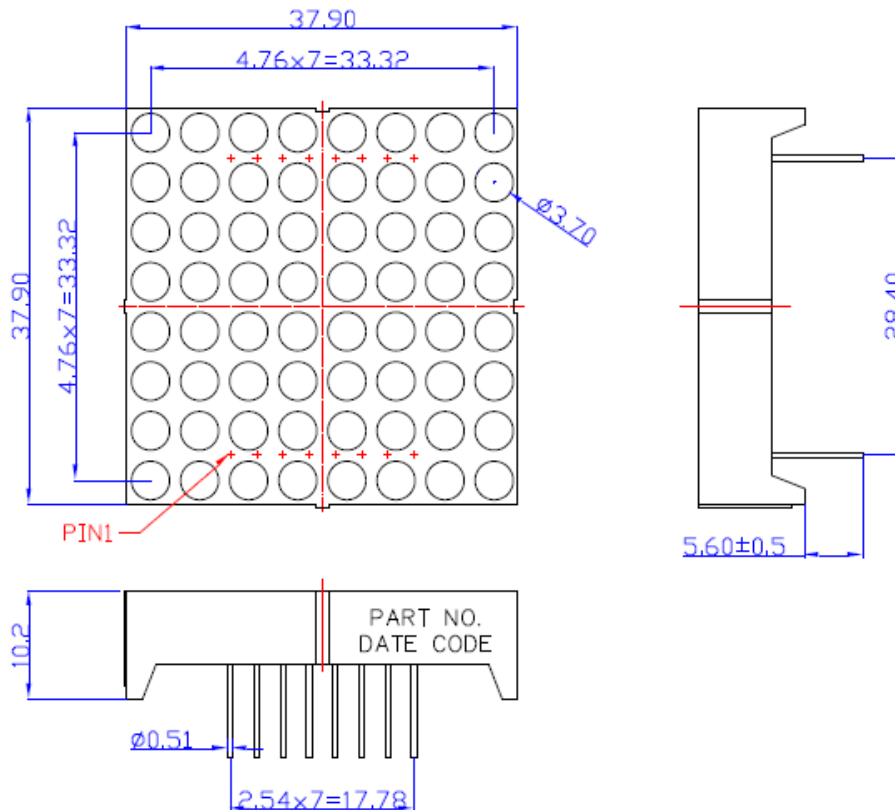
- Instrument panels
- Indoor/Outdoor display board
- Audio equipment

Certification & Compliance:

- TS16949
- ISO9001
- RoHS Compliant



Dimension:



Units: mm / tolerance = +/-0.25mm

Electrical / Optical Characteristic (Ta=25 °C)

Product		Material	Color	I _F (mA)	V _F (V)		λ _D (nm)			I _V (mcd)
Anode Row, Cathode Column	Anode Column, Cathode Row				Typ.	Max.	Min.	Typ.	Max.	Typ.
GMC15R88	GMA15R88	AllnGaP	Red	20	2.0	2.6	619	624	629	90
GMC15S88	GMA15S88	AllnGaP	Deep Red	20	2.0	2.6	636	639	647	35
GMC15Y88	GMA15Y88	AllnGaP	Yellow	20	2.0	2.6	585	590	595	90
GMC15O88	GMA15O88	AllnGaP	Orange	20	2.0	2.6	601	606	611	90
GMC15AG88	GMA15AG88	AllnGaP	Yellow Green	20	2.1	2.6	566	571	574	25
GMC15IG88	GMA15IG88	InGaN	True Green	20	3.2	4.0	515	525	530	200
GMC12IB88	GMA15IB88	InGaN	Blue	20	3.0	4.0	460	465	470	160

Absolute Maximum Rating

Material	P _d (mW)	Derating liner from 25 °C per dice (mA/ °C)	I _F (mA)	I _{FP} (mA)*	V _R (V)	T _{OP} (°C)	T _{ST} (°C)
AllnGaP	70	0.33	25	90	5	-25 to +85	-25 to +85
InGaN	120	0.4	30	100	5	-25 to +85	-25 to +85

*Duty 1/10 @ 1KHz

Luminous Intensity I_V for Red @ I_F=20mA

Bin	Min.	Max.	Unit
R	60	90	mcd
S	90	120	
T	120	150	
U	150	180	

Luminous Intensity I_V for Deep Red @ I_F=20mA

Bin	Min.	Max.	Unit
P	17	35	mcd
Q	35	53	
R	55	72	

Luminous Intensity I_V for Yellow @ $I_F=20mA$

Bin	Min.	Max.	Unit
R	60	90	mcd
S	90	120	
T	120	150	
U	150	180	
V	180	210	

Luminous Intensity I_V for Orange @ $I_F=20mA$

Bin	Min.	Max.	Unit
R	60	90	mcd
S	90	120	
T	120	150	
U	150	180	

Luminous Intensity I_V for Yellow Green @ $I_F =20mA$

Bin	Min.	Max.	Unit
M	10	20	mcd
N	20	30	
O	30	40	

Luminous Intensity I_V for True Green @ $I_F =20mA$

Bin	Min.	Max.	Unit
R	120	190	mcd
S	190	260	
T	260	330	
U	330	400	

Luminous Intensity I_V for Blue @ $I_F=20mA$

Bin	Min.	Max.	Unit
T	120	150	mcd
U	150	180	
V	180	210	

Dominant Wavelength λ_D for Red @ $I_F =20mA$

Bin	Min.	Max.	Unit
1	619	623	nm
2	623	626	
3	626	629	

Dominant Wavelength λ_D for Deep Red @ $I_F = 20\text{mA}$

Bin	Min.	Max.	Unit
1	636	640	nm
2	640	643	
3	643	647	

Dominant Wavelength λ_D for Yellow @ $I_F = 20\text{mA}$

Bin	Min.	Max.	Unit
1	585	588	nm
2	588	592	
3	592	595	

Dominant Wavelength λ_D for Orange @ $I_F = 20\text{mA}$

Bin	Min.	Max.	Unit
1	601	605	nm
2	605	611	

Dominant Wavelength λ_D for Yellow Green @ $I_F = 20\text{mA}$

Bin	Min.	Max.	Unit
1	566	569	nm
2	569	571	
3	571	574	

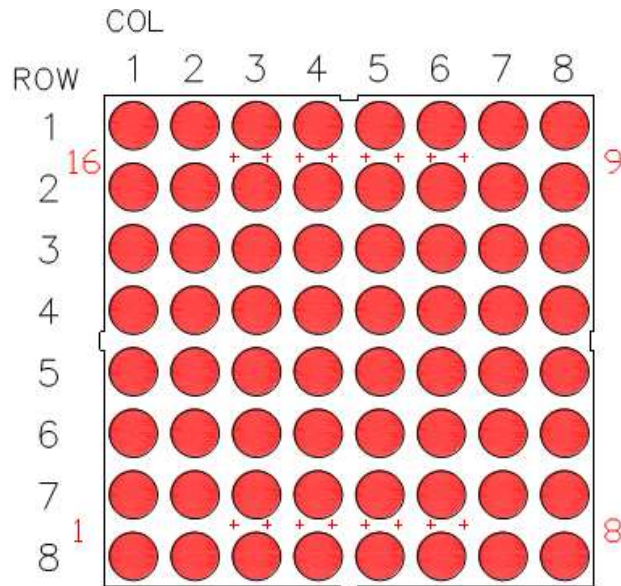
Dominant Wavelength λ_D for True Green @ $I_F = 20\text{mA}$

Bin	Min.	Max.	Unit
1	515	520	nm
2	520	525	
3	525	530	

Dominant Wavelength λ_D for Blue @ $I_F = 20\text{mA}$

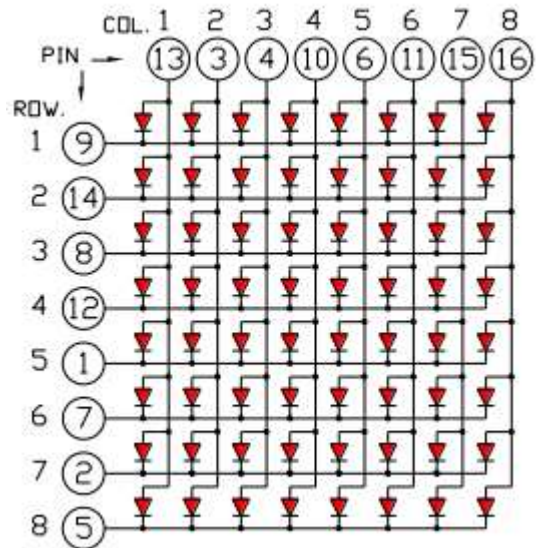
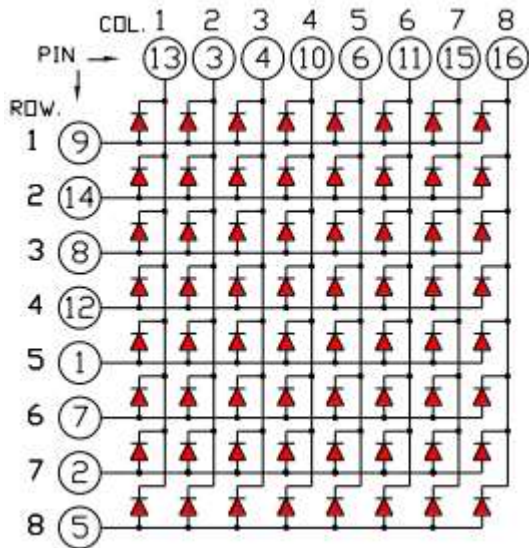
Bin	Min.	Max.	Unit
1	460	462.5	nm
2	462.5	465	
3	465	467.5	
4	467.5	470	

Pin Configuration



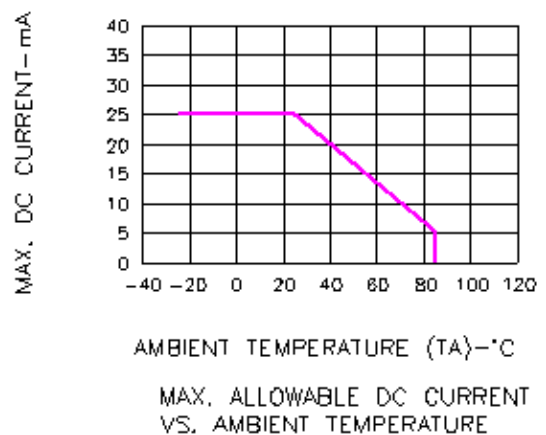
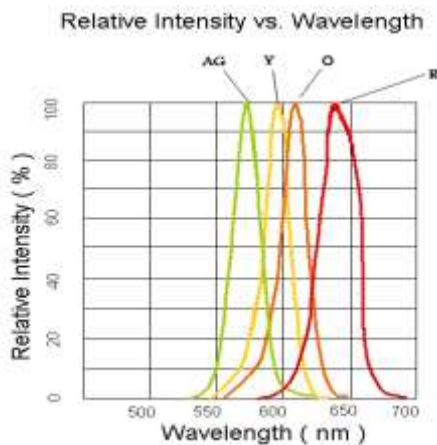
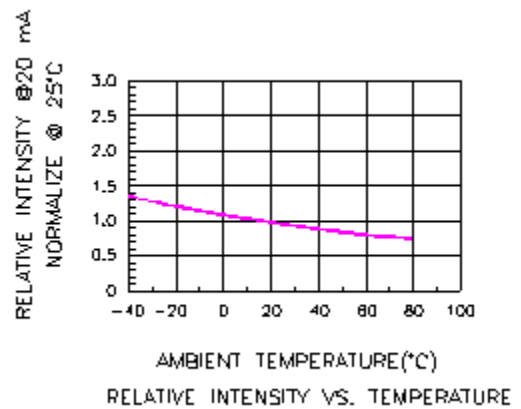
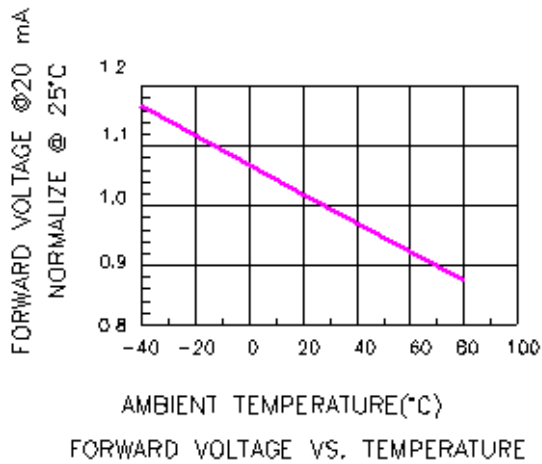
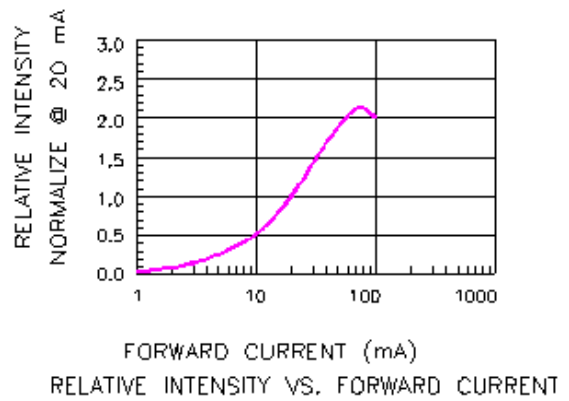
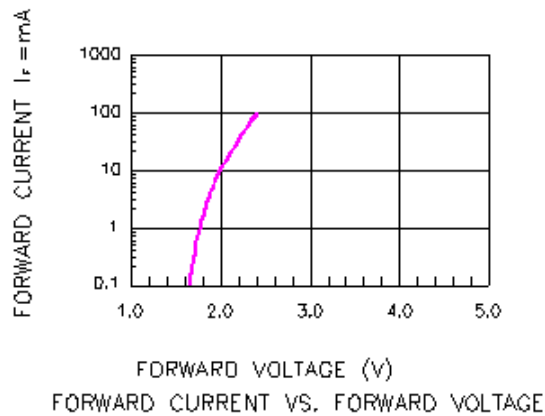
Anode Row, Cathode Column

Anode Column, Cathode Row

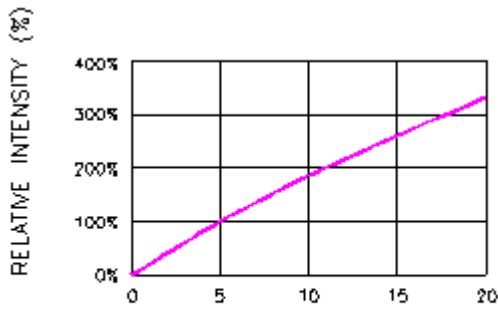


Characteristic Curves

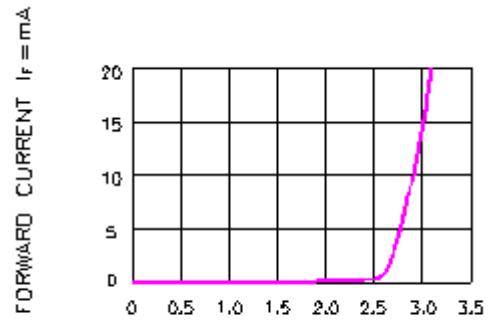
AllInGaP



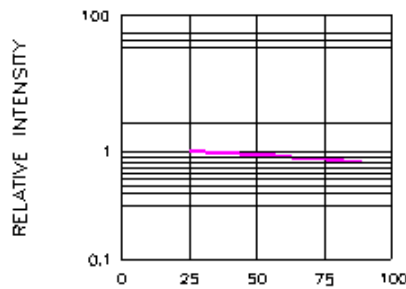
InGaN



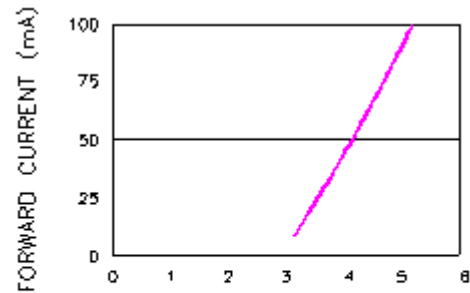
$I_r @ 20mA$ (mA)
RELATIVE INTENSITY VS. FORWARD CURRENT



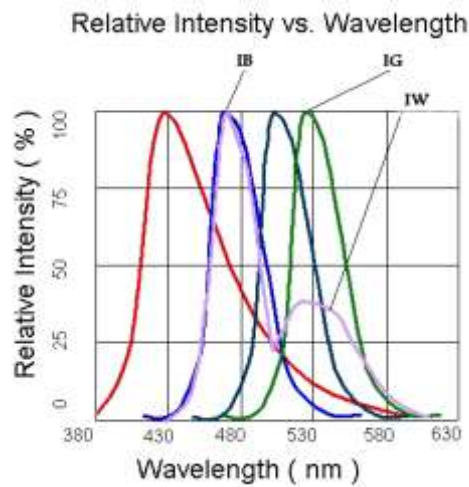
FORWARD CURRENT $I_f = mA$
FORWARD VOLTAGE (V)
FORWARD CURRENT VS. FORWARD VOLTAGE



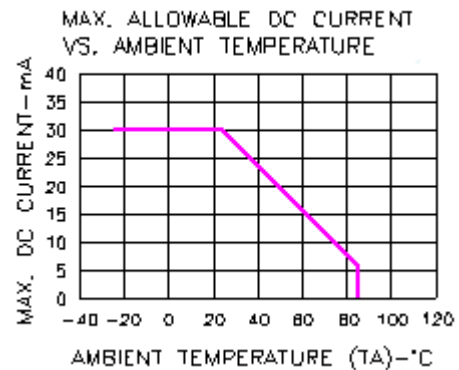
RELATIVE INTENSITY
LEAD TEMPERATURE (°C)
RELATIVE INTENSITY VS. LEAD TEMPERATURE
(PULSED 20 mA; 300us
PULSE, 10ms PERIOD)



FORWARD CURRENT (mA)
FORWARD VOLTAGE (V)
PEAK FORWARD VOLTAGE
VS. FORWARD (100us TEST PULSE,
1% DUTY CYCLE)



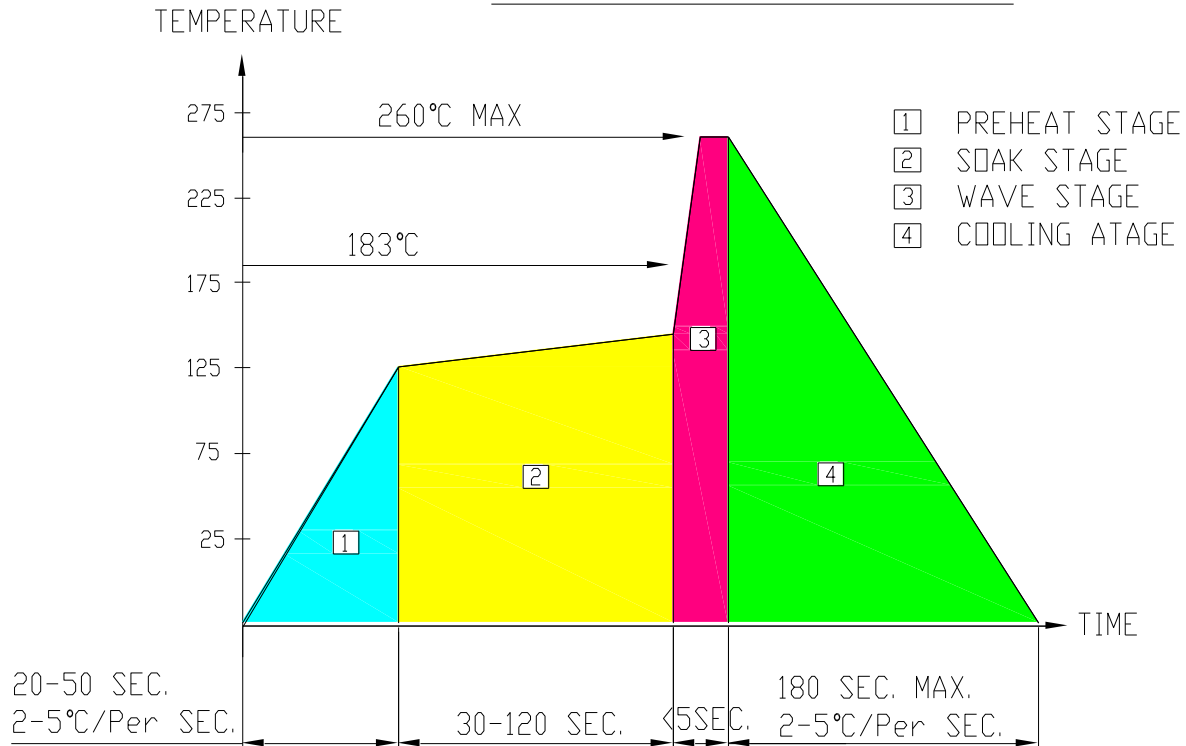
Relative Intensity vs. Wavelength



MAX. ALLOWABLE DC CURRENT
VS. AMBIENT TEMPERATURE

Solder Profile

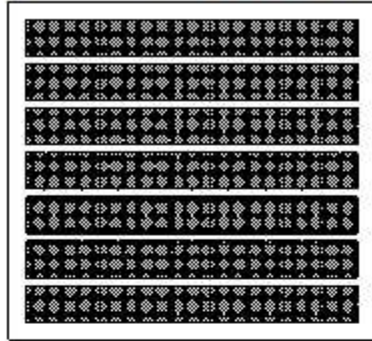
WAVE SOLDER PROFILE



Package Dimensions

PACKAGE DIMENSIONS

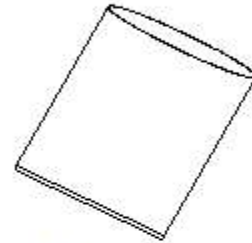
63 PCS / 1 Pink ESD Polyform (9 X 7 PCS)



5 Pink ESD Polyform / 1 Pink BAG
315 PCS / 1 Inner Carton

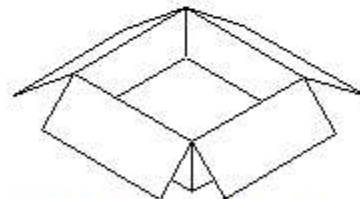


A reference for packing within bag.

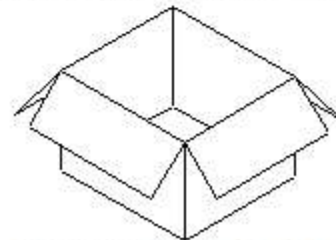


ESD BAG SIZE : 650 x 550 mm

630 PCS / 2 INNER CARTON / 1 OUTER CARTON



INNER BOX SIZE : 394 x 370 x 138 mm



OUTER BOX SIZE : 430 x 390 x 300 mm

Ordering Information

Product		Orderable Part#		Spec Range	Quantity per foam
Anode Row, Cathode Column	Anode Column, Cathode Row	Anode Row, Cathode Column	Anode Column, Cathode Row		
GMC15R88	GMA15R88	GMC15R88	GMA15R88	I _v =90mcd typ. @ I _F =20mA, λ _d =619nm to 629nm	63pcs
GMC15S88	GMA15S88	GMC15S88	GMA15S88	I _v =35mcd typ. @ I _F =20mA, λ _d =636nm to 647nm	63pcs
GMC15Y88	GMA15Y88	GMC15Y88	GMA15Y88	I _v =90mcd typ. @ I _F =20mA, λ _d =585nm to 595nm	63pcs
GMC15O88	GMA15O88	GMC15O88	GMA15O88	I _v =90mcd typ. @ I _F =20mA, λ _d =601nm to 611nm	63pcs
GMC15AG88	GMA15A88	GMC15AG88	GMA15AG88	I _v =25mcd typ. @ I _F =20mA, λ _d =566nm to 574nm	63pcs
GMC15IG88	GMA15IG88	GMC15IG88	GMA15IG88	I _v =200mcd typ. @ I _F =20mA, λ _d =515nm to 530nm	63pcs
GMC15IB88	GMA15IB88	GMC15IB88	GMA15IB88	I _v =160mcd typ. @ I _F =20mA, λ _d =460nm to 470nm	63pcs

Revision History

Description:	Revision #	Revision Date
New Release of GMX15X88_series	V1.0	05/26/2011
Amend Brightness & Part number to GMZ15XX88_series	V1.1	06/23/2011
Add Blue and Green Color Spec.	V1.2	07/13/2011
Update spec	V1.3	09/23/2015

Disclaimer

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2. A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.