

QT-Brightek Corporation

2.1" 5x7 Dot Matrix

Part No.: GMZ21XX75_series

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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:

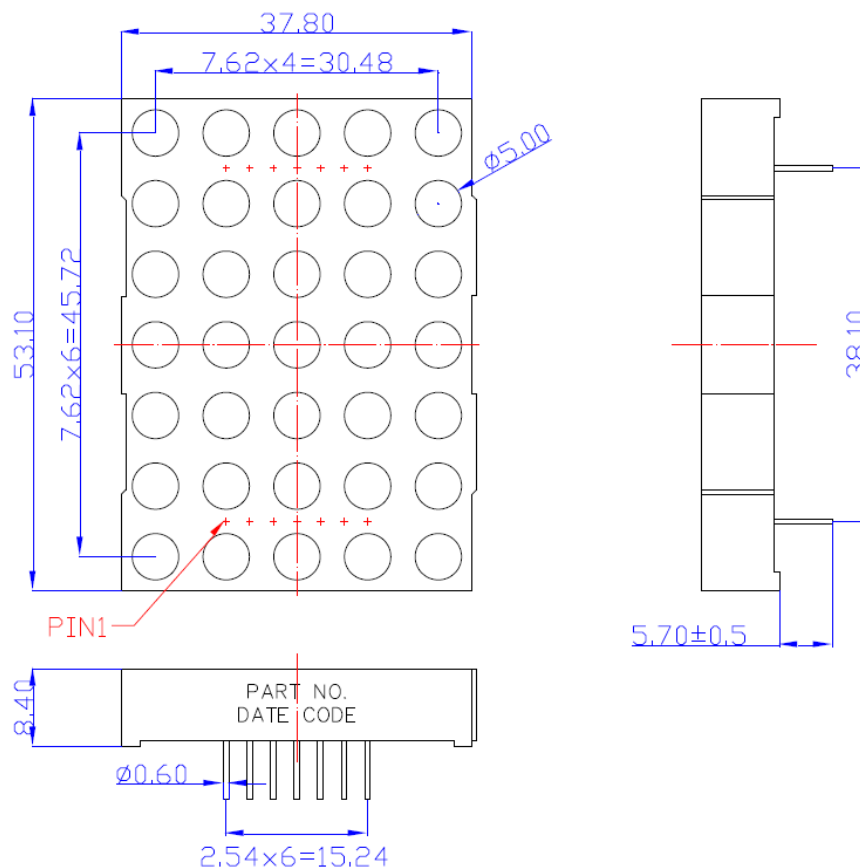
These 2.1" 5x7 dot matrix displays are made with white dots and a grey surface.

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.
GMC21R75	GMA21R75	AllnGaP	Red	20	2.0	2.6	619	624	629	90
GMC21S75	GMA21S75	AllnGaP	Deep Red	20	2.0	2.6	636	639	647	35
GMC21Y75	GMA21Y75	AllnGaP	Yellow	20	2.0	2.6	585	590	595	90
GMC21O75	GMA21O75	AllnGaP	Orange	20	2.0	2.6	601	606	611	90
GMC21AG75	GMA21AG75	AllnGaP	Yellow Green	20	2.1	2.6	566	571	574	30
GMC21IG75	GMA21IG75	InGaN	True Green	20	3.2	4.0	515	525	530	200
GMC21IB75	GMA21IB75	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	53	72	

Luminous Intensity I_V for Yellow @ $I_F=20\text{mA}$

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

Luminous Intensity I_V for Orange @ $I_F=20\text{mA}$

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

Luminous Intensity I_V for Yellow Green @ $I_F =20\text{mA}$

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

Luminous Intensity I_V for True Green @ $I_F =20\text{mA}$

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

Luminous Intensity I_V for Blue @ $I_F=20\text{mA}$

Bin	Min.	Max.	Unit
K	120	150	mcd
L	150	180	
M	180	210	

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

Bin	Min.	Max.	Unit
1	619	622	nm
2	622	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	

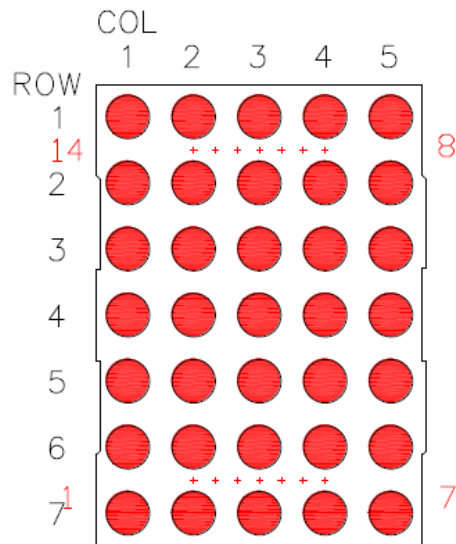
Dominant Wavelength λ_D for True Green @ $I_F = 20\text{mA}$

Bin	Min.	Max.	Unit
1	515	525	nm
2	525	530	
3	530	535	

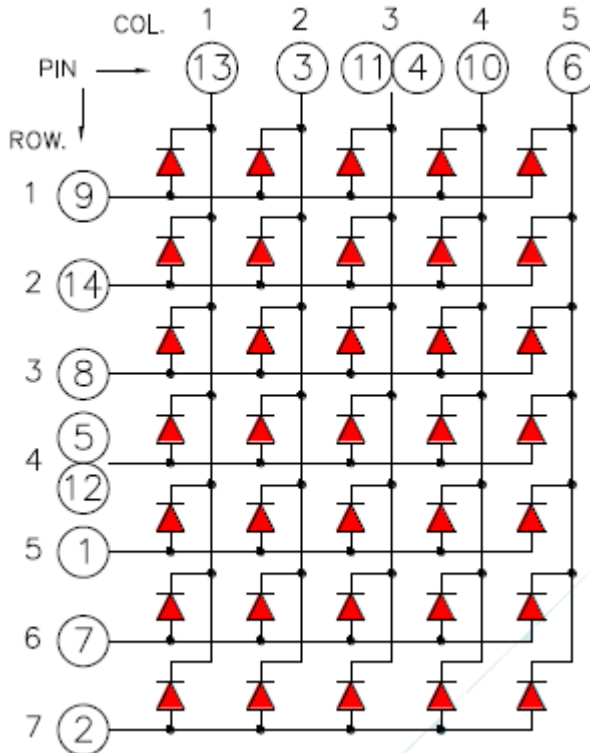
Dominant Wavelength λ_D for Blue @ $I_F = 20\text{mA}$

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

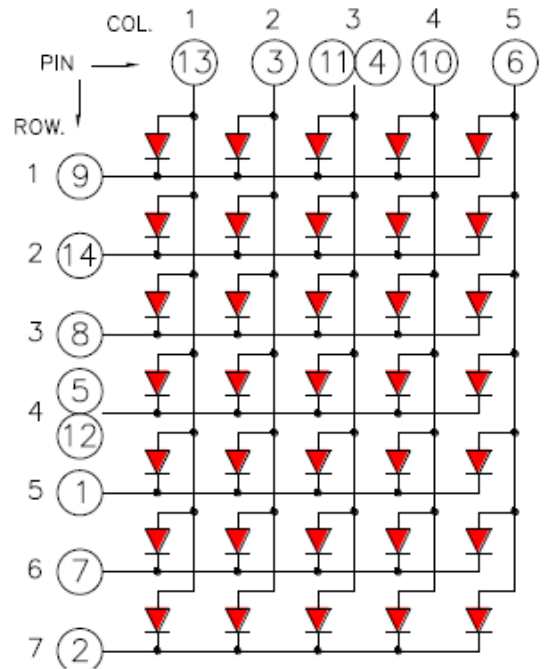
Pin Configuration



Anode Row, Cathode Column

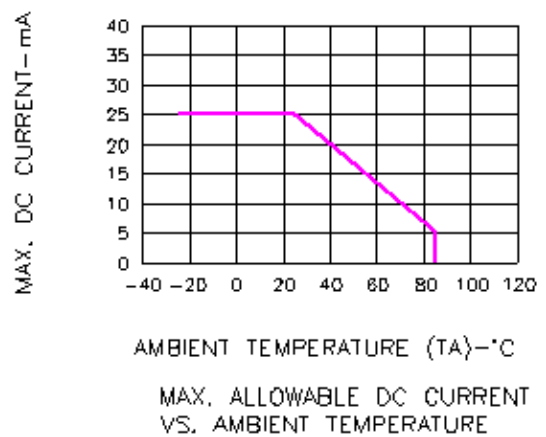
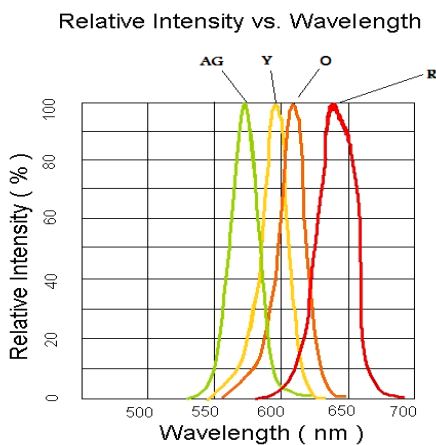
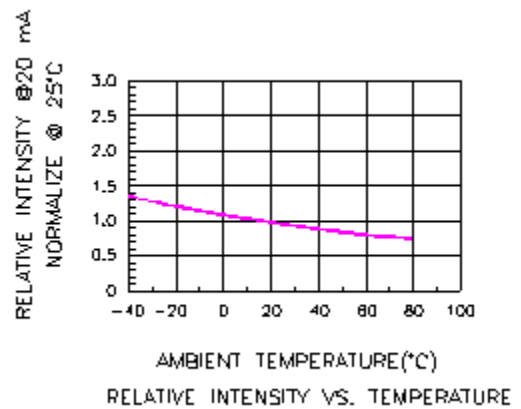
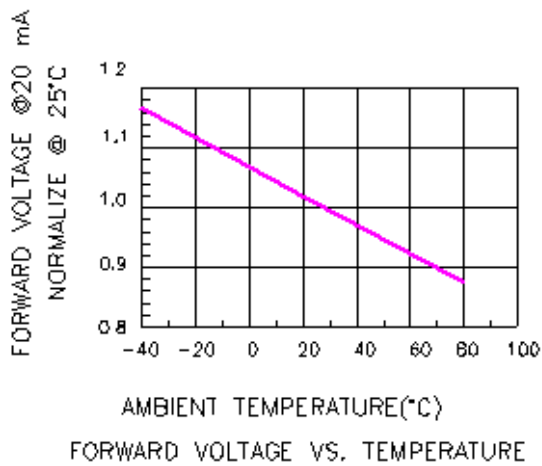
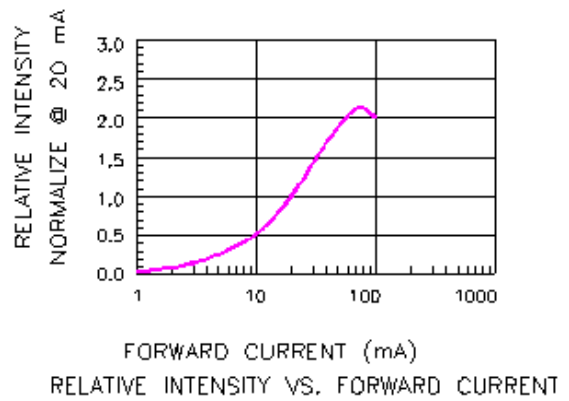
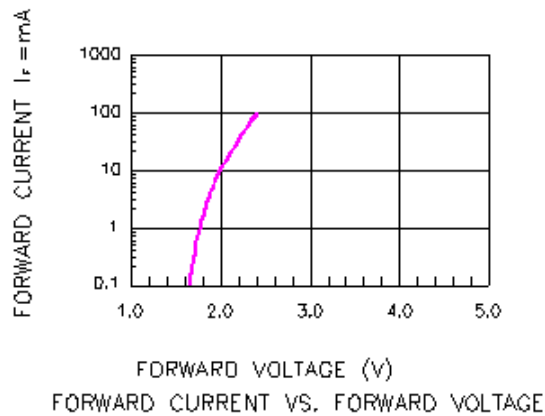


Anode Column, Cathode Row

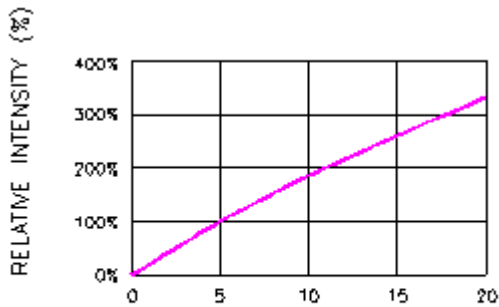


Characteristic Curves

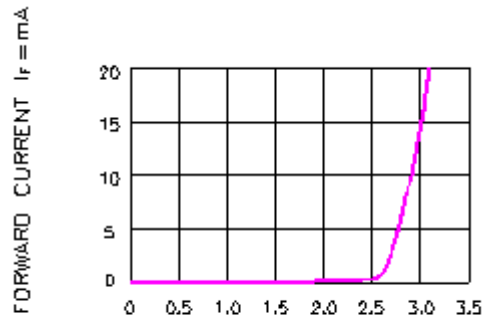
AllnGaP



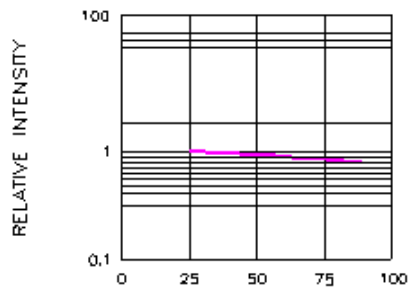
InGaN



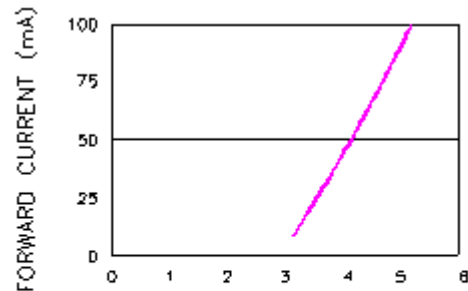
$I_r @ 20mA$ (mA)
RELATIVE INTENSITY VS. FORWARD CURRENT



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

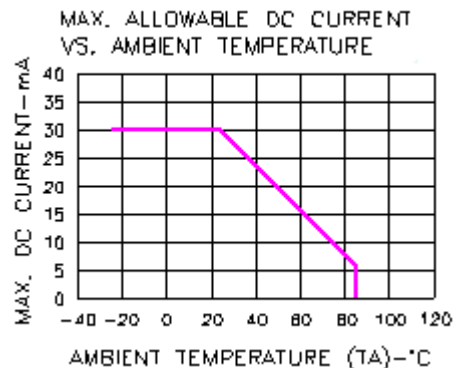
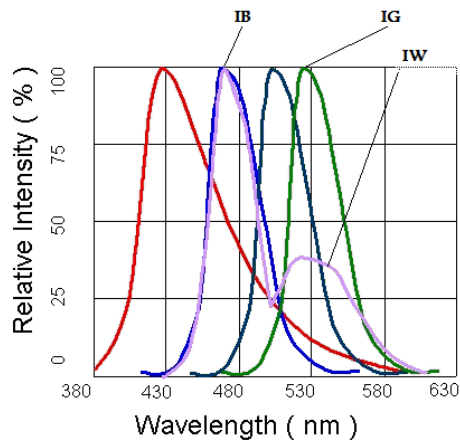


RELATIVE INTENSITY
LEAD TEMPERATURE(°C)
RELATIVE INTENSITY VS.LEAD TEMPERATURE
(PULSED 20 mA; 300us
PULSE,10ms PERIOD)



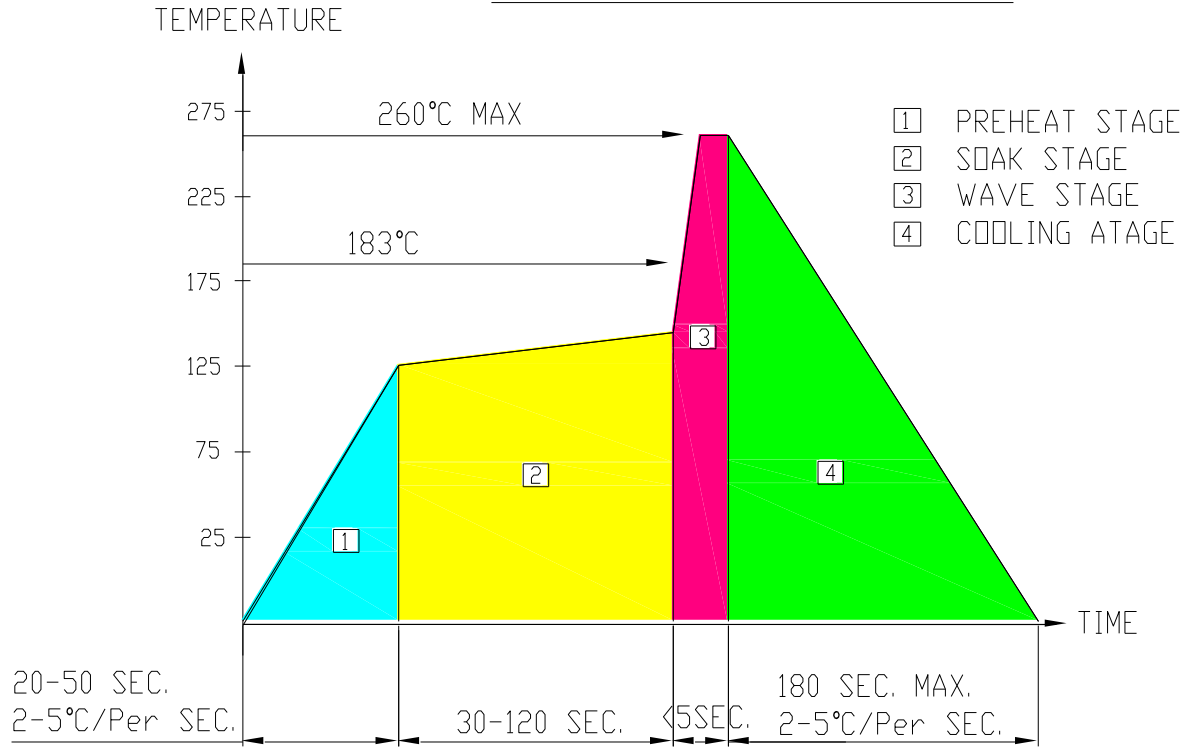
FORWARD CURRENT (mA)
FORWARD VOLTAGE(V)
PEAK FORWARD VOLTAGE
VS.FORWARD(100us TEST PULSE,
1% DUTY CYCLE)

Relative Intensity vs. Wavelength



Solder Profile

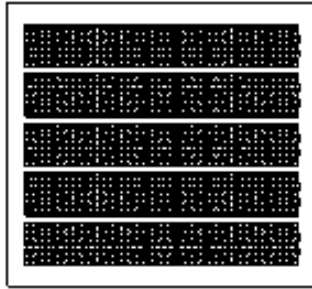
WAVE SOLDER PROFILE



Package Dimensions

PACKAGE DIMENSIONS

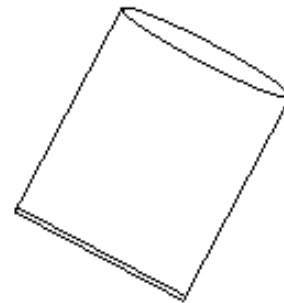
45 PCS / 1 Polyform (9 X 5 PCS)



5 Polyform / 1 BAG
225PCS /1 Inner Carton

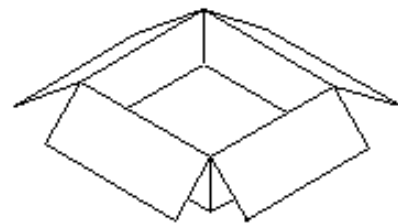


A reference for packing within bag.

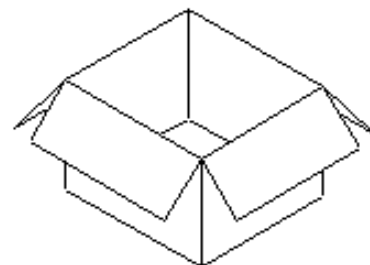


BAG SIZE : 450X410X580

450 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		
GMC21R75	GMA21R75	GMC21R75	GMA21R75	I _v =90mcd typ. @ I _F =20mA, λ _d =619nm to 629nm	45pcs
GMC21S75	GMA21S75	GMC21S75	GMA21S75	I _v =35mcd typ. @ I _F =20mA, λ _d =636nm to 647nm	45pcs
GMC21Y75	GMA21Y75	GMC21Y75	GMA21Y75	I _v =90mcd typ. @ I _F =20mA, λ _d =585nm to 595nm	45pcs
GMC21O75	GMA21O75	GMC21O75	GMA21O75	I _v =90mcd typ. @ I _F =20mA, λ _d =601nm to 611nm	45pcs
GMC21AG75	GMA21AG75	GMC21AG75	GMA21AG75	I _v =25mcd typ. @ I _F =20mA, λ _d =566nm to 574nm	45pcs
GMC21IG75	GMA21IG75	GMC21IG75	GMA21IG75	I _v =200mcd typ. @ I _F =20mA, λ _d =515nm to 530nm	45pcs
GMC21IB75	GMA21IB75	GMC21IB75	GMA21IB75	I _v =160mcd typ. @ I _F =20mA, λ _d =460nm to 470nm	45pcs

Revision History

Description:	Revision #	Revision Date
New Release of GMZ21XX75_series	V1.0	05/27/2011
Add Blue and Green Color Spec.	V1.2	07/13/2011
Amend to the new format	V1.3	04/29/2013
Add binning/ add deep red and orange spec	V1.4	09/18/2015

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.