

QT-Brightek Corporation

0.7" 5x7 Dot Matrix

Part No.: GMZ07XX75_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 0.7" 5x7 dot matrix displays are made with white dots and a grey surface.

Application:

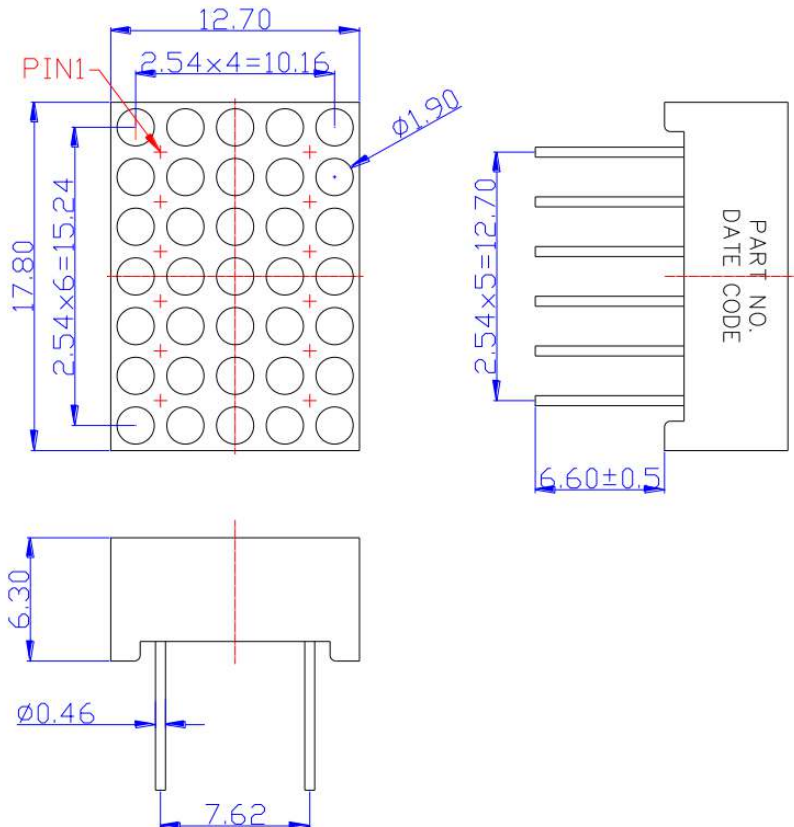
- Instrument panels
- Indoor/Outdoor display board
- Audio equipment

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.
GMC07R75	GMA07R75	AllnGaP	Red	20	2.1	2.6	619	624	629	60
GMC07S75	GMA07S75	AllnGaP	Deep Red	20	2.1	2.6	635	639	648	30
GMC07Y75	GMA07Y75	AllnGaP	Yellow	20	2.0	2.6	585	590	595	60
GMC07O75	GMA07O75	AllnGaP	Orange	20	2.0	2.6	601	606	611	60
GMC07AG75	GMA07AG75	AllnGaP	Yellow Green	20	2.1	2.6	566	571	574	20
GMC07IG75	GMA07IG75	InGaN	True Green	20	3.2	4.0	515	525	530	200
GMC07IB75	GMA07IB75	InGaN	Blue	20	3.0	4.0	460	465	470	130

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
Q	30	60	mcd
R	60	90	
S	90	120	
T	120	150	

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
Q	30	60	mcd
R	60	90	
S	90	120	
T	120	150	

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

Bin	Min.	Max.	Unit
Q	30	60	mcd
R	60	90	
S	90	120	
T	120	150	

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
S	90	120	mcd
T	120	150	
U	150	180	

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

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	635	640	nm
2	640	643	
3	643	648	

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	

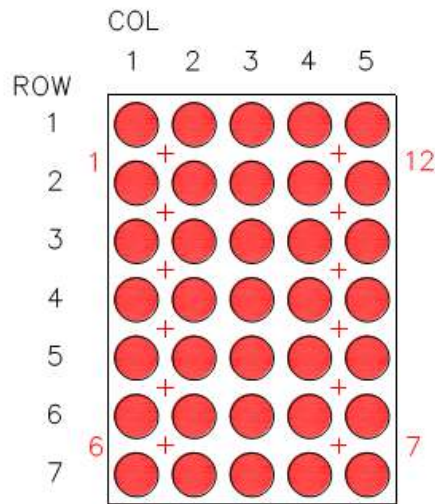
Dominant Wavelength λ_D for True Green @ $I_F = 20\text{mA}$

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

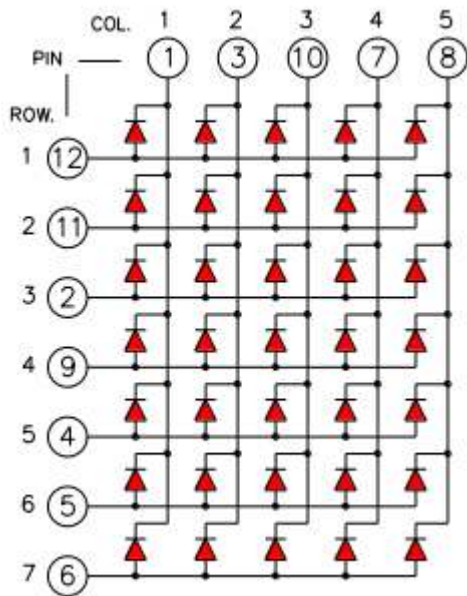
Dominant Wavelength λ_D for Blue @ $I_F = 20\text{mA}$

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

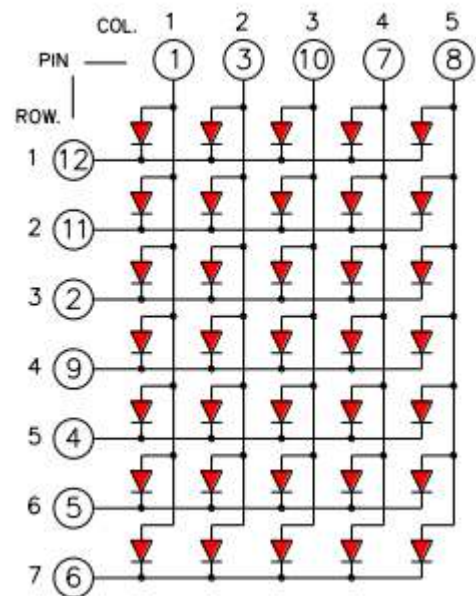
Pin Configuration



Anode Row, Cathode Column

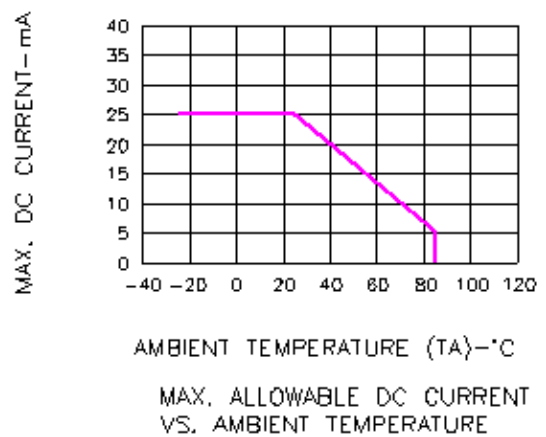
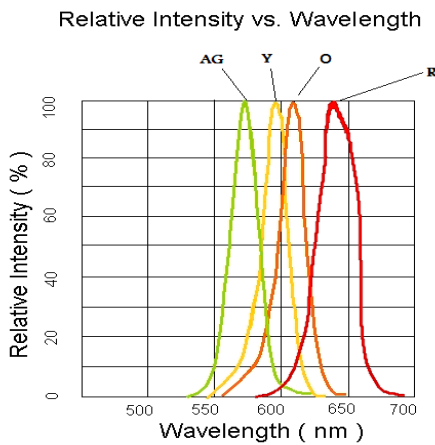
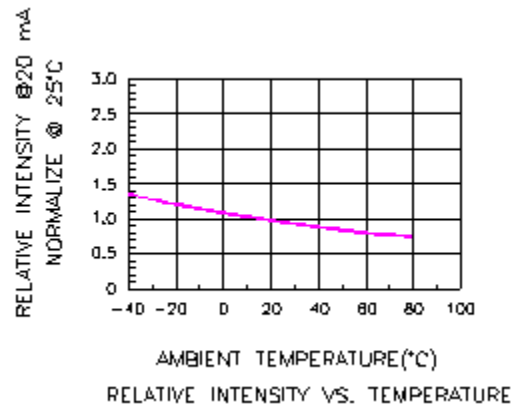
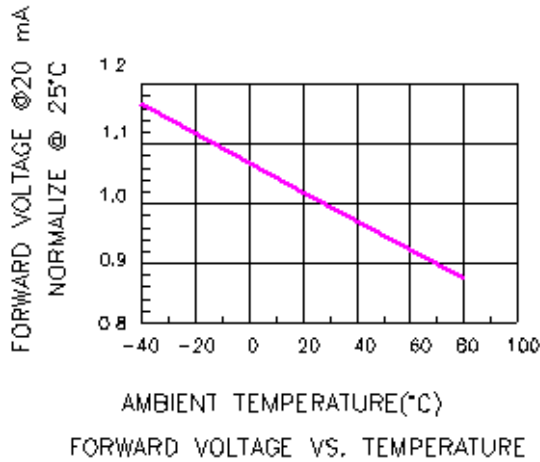
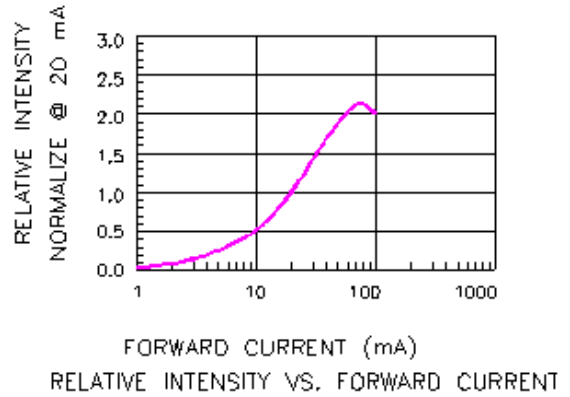
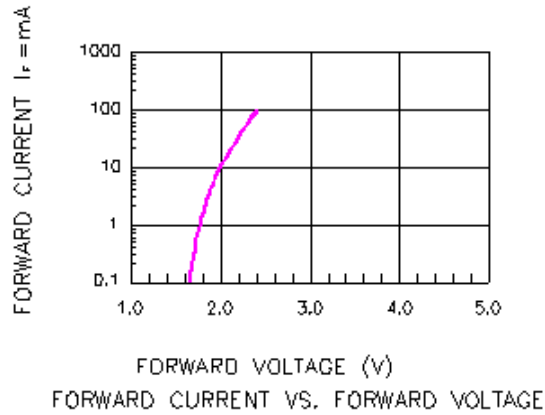


Anode Column, Cathode Row

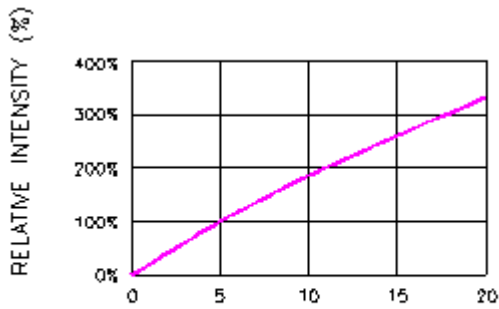


Characteristic Curves

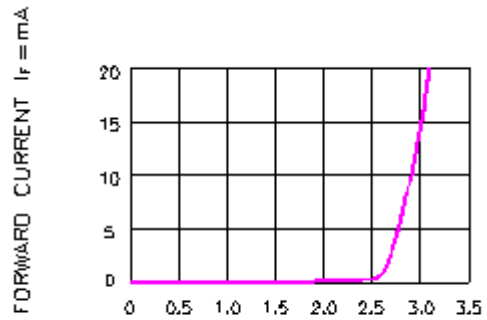
AllnGaP



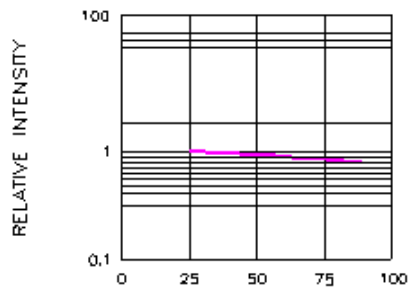
InGaN



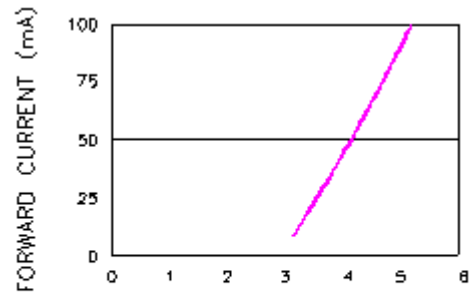
$I_r @ 20mA$ (mA)
RELATIVE INTENSITY VS. FORWARD CURRENT



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

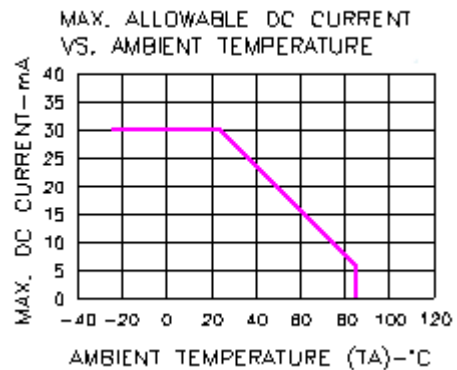
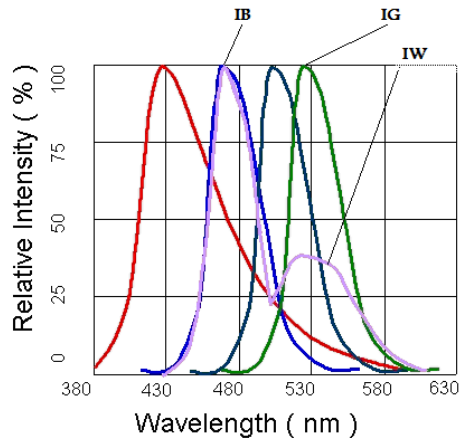


RELATIVE INTENSITY
LEAD TEMPERATURE (°C)
RELATIVE INTENSITY VS. LEAD TEMPERATURE
(PULSED 20 mA; 300us
PULSE, 10ms PERIOD)



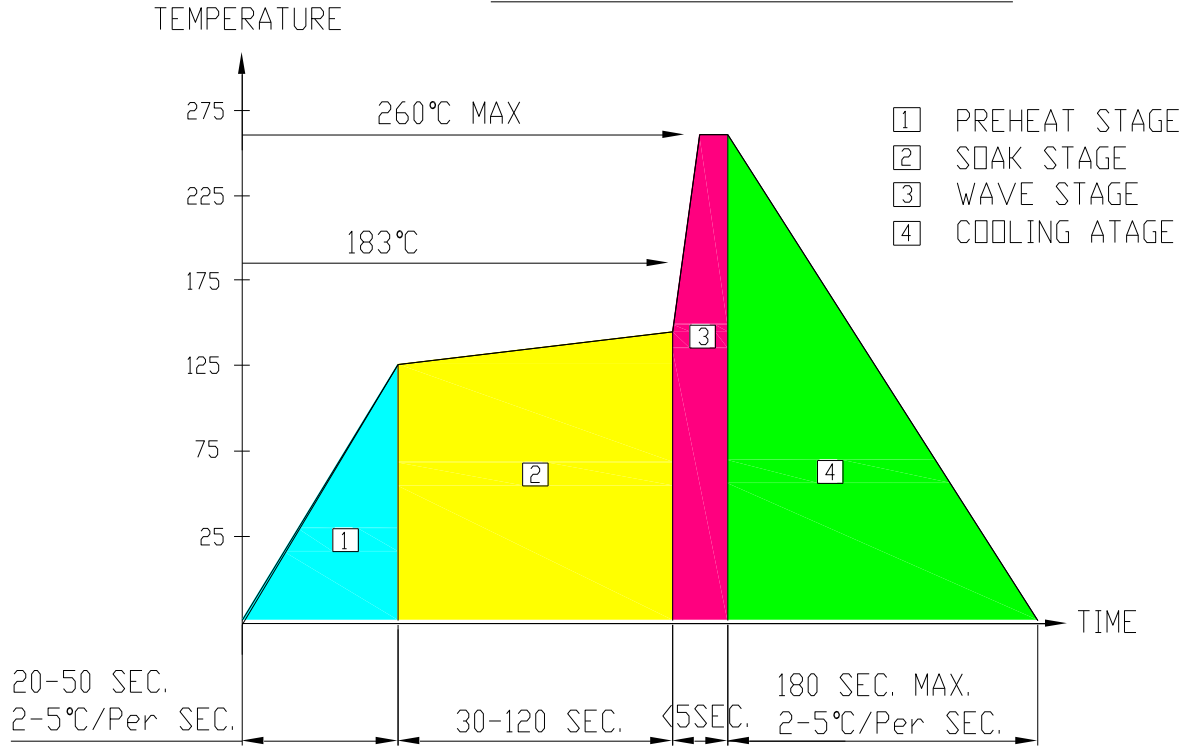
FORWARD CURRENT (mA)
FORWARD VOLTAGE (V)
PEAK FORWARD VOLTAGE
VS. FORWARD (100us TEST PULSE,
1% DUTY CYCLE)

Relative Intensity vs. Wavelength



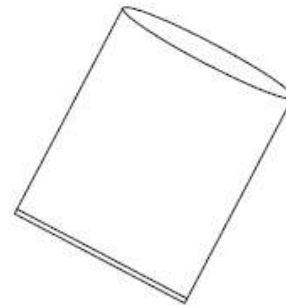
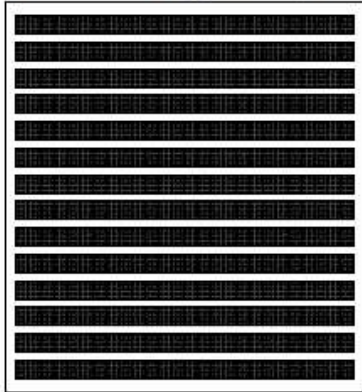
Solder Profile

WAVE SOLDER PROFILE



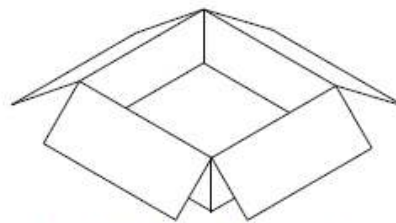
Package Dimensions

364 PCS / 1 Polyform (26 X 14 PCS)



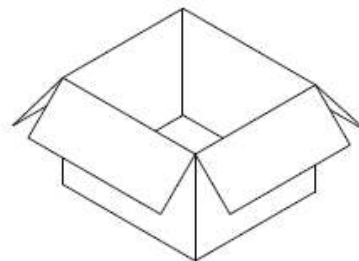
BAG SIZE :450X410X560

6 Polyform / 1BAG
2184 PCS /1Inner Carton



INNER BOX SIZE : 394 x 370 x 138 mm

4368 PCS / 2 Inner Carton / 1 Outer Carton



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		
GMC07R75	GMA07R75	GMC07R75	GMA07R75	I _v =60mcd typ. @ I _F =20mA, λ _d =619nm to 629nm	364pcs
GMC07S75	GMA07S75	GMC07S75	GMA07S75	I _v =30mcd typ. @ I _F =20mA, λ _d =636nm to 647nm	364pcs
GMC07Y75	GMA07Y75	GMC07Y75	GMA07Y75	I _v =60mcd typ. @ I _F =20mA, λ _d =585nm to 595nm	364pcs
GMC07O75	GMA07O75	GMC07O75	GMA07O75	I _v =60mcd typ. @ I _F =20mA, λ _d =601nm to 611nm	364pcs
GMC07AG75	GMA07AG75	GMC07AG75	GMA07AG75	I _v =20mcd typ. @ I _F =20mA, λ _d =566nm to 574nm	364pcs
GMC07IG75	GMA07IG75	GMC07IG75	GMA07IG75	I _v =200mcd typ. @ I _F =20mA, λ _d =515nm to 535nm	364pcs
GMC07IB75	GMA07IB75	GMC07IB75	GMA07IB75	I _v =130mcd typ. @ I _F =20mA, λ _d =460nm to 470nm	364pcs

Revision History

Description:	Revision #	Revision Date
New Release of GMZ07XX75 Series	V1.0	05/26/2011
Add Color Blue/ Green Spec.	V1.1	07/13/2011
Update format/ amend the brightness/ add Color Deep Red	V2.0	06/27/2014
Update packing spec	V2.1	03/05/2015
Update brightness spec	V2.2	06/16/2015
Add orange/ amend format	V2.3	10/02/2015
Update drawing orientation and wavelength bin range for S (deep red)	V2.4	01/14/2021

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.