CHIP LED - 0603 - AMBER
- CC - AUB0603TS - ED -

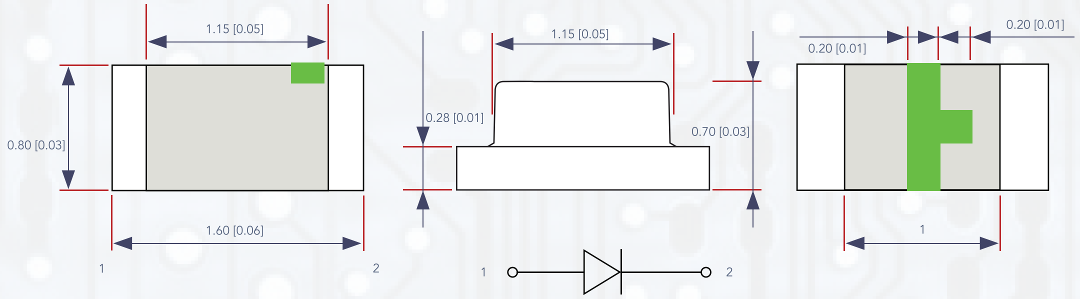
FEATURES

- Viewing angle: 140 deg
- The materials of the LED dice is AlGaInP
- 1.60 mm x 0.80 mm x 070 mm
- RoHS compliant led-free soldering compatible

ATTENTION

OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC SENSITIVE DEVICES

PACKAGE OUTINE



NOTE: All dimensions are in millimeters (Inches)
Tolerances are ±0.1mm (0.004 inch) unless otherwise noted

ABSOLUTE MAXIMUM RATINGS AT Ta - 25°C

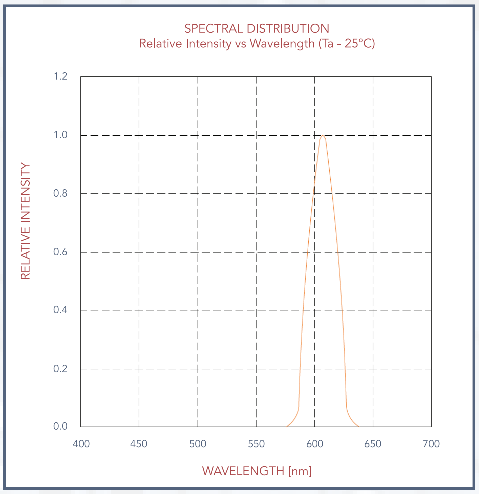
PARAMETER	SYMBOL	VALUE	UNIT
Forward Current	If	20	mA
Reverse Voltage	Vr	5	V
Operating Temperature Range	Top	-20~ +85	°C
Storage Temperature Range	Tstg	-35 ~ +85	°C
Peak Pulsting Current	Ifp	100	mA
Electrostatic Discharge	ESD	2000(HBM)	V

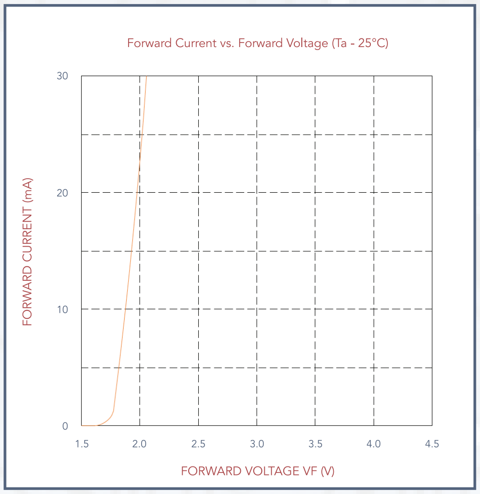
ELECTRO-OPTICAL CHARACTERISTICS AT Ta - 25°C

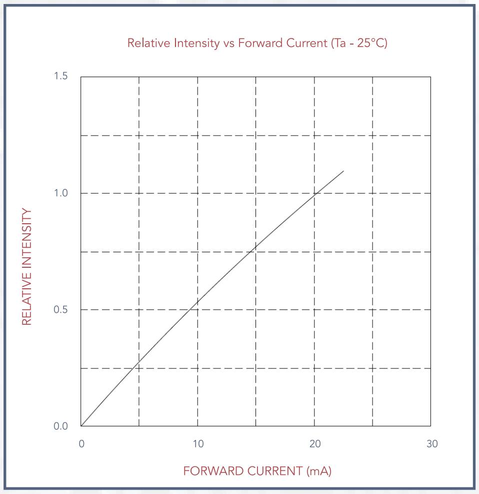
PARAMETER	TEST CONDITION	SYMBOL	VALUE			UNIT
			MIN	TYPE	MAX	
Spectral Half Bandwidth	If - 20mA	Δλ	-	15	-	mm
Forward Voltage	If - 20mA	Vf	1.8	-	1.9	V
			1.9	-	2.0	V
			2.0	-	2.1	V
			2.1	-	2.2	V
			2.2	-	2.3	V
			2.3	-	2.4	V
Dominant Wavelength	If - 20mA	λd	600	-	605	nm
			605	-	610	nm
Luminous Intensity	If - 20mA	Iv	70	-	90	mcd
			90	-	120	mcd
			120	-	150	mcd
			150	-	200	mcd
Viewing Angle at 50% Iv	If - 20mA	2θ	-	140	-	Deg
Reverse Current	Vr - 5V	Ir	-	-	10	μA

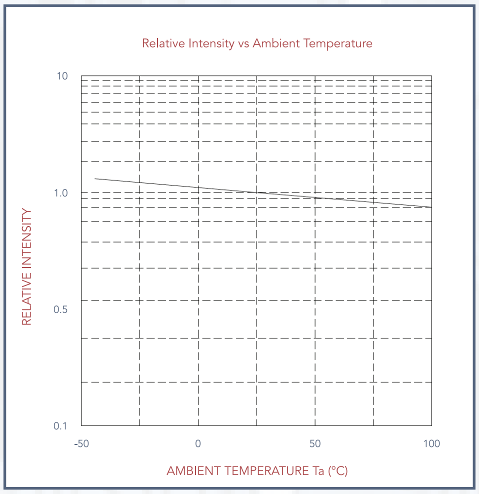
NOTE: (Tolerance: Iv ± 10%, λd ±2nm, Vf ±0.05V)
IFP Conditions: Pulse Width ≤10m sec. and Duty ≤1/10.

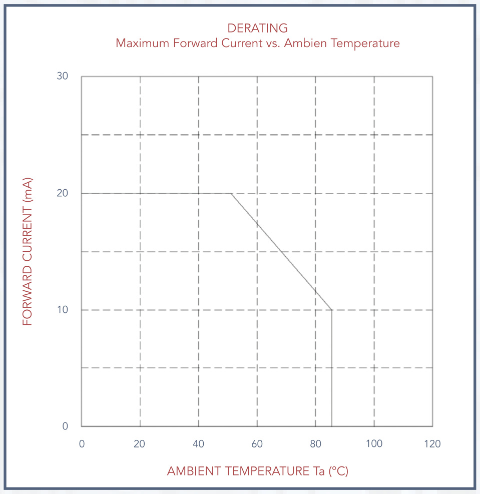
TYPICAL OPTICAL CHARACTERISTICS CURVES

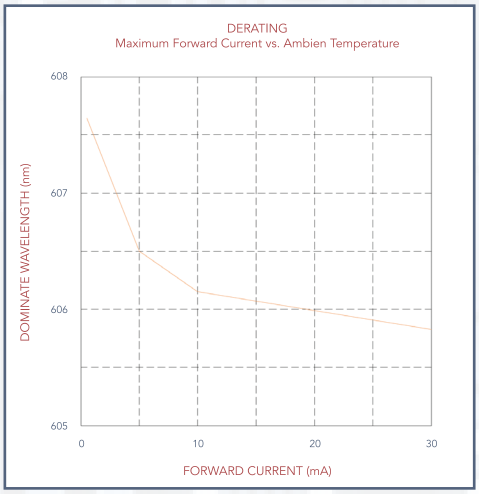

SPECTRAL DISTRIBUTION
Relative Intensity vs Wavelength (Ta - 25°C)


Forward Current vs. Forward Voltage (Ta - 25°C)


Relative Intensity vs Forward Current (Ta - 25°C)


Relative Intensity vs Ambient Temperature


DERATING
Maximum Forward Current vs. Ambien Temperature


DERATING
Maximum Forward Current vs. Ambien Temperature

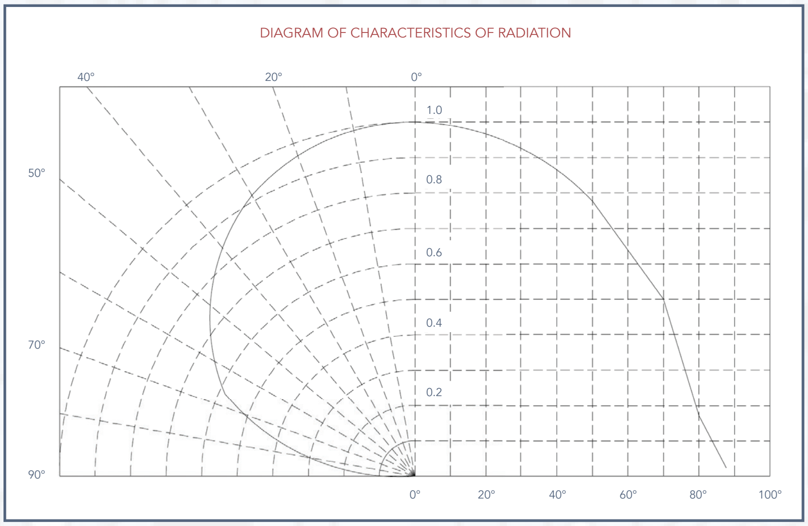


DIAGRAM OF CHARACTERISTICS OF RADIATION

REFLOW PROFILE

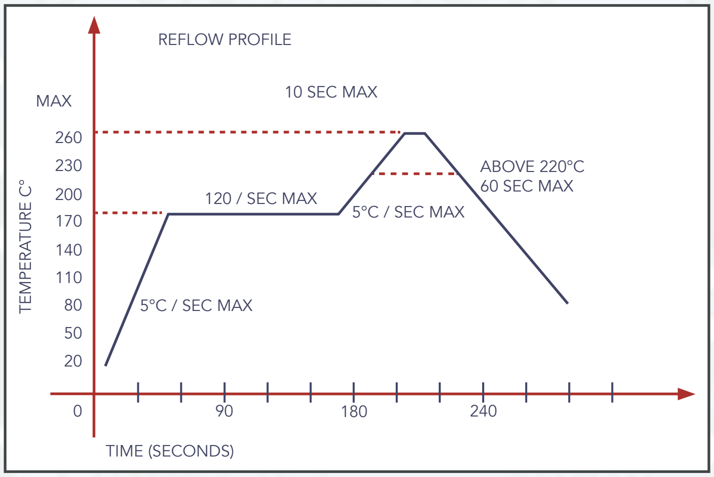
- Soldering Condition

Recommended Soldering
After reflow soldering rapid cooling should be avoided

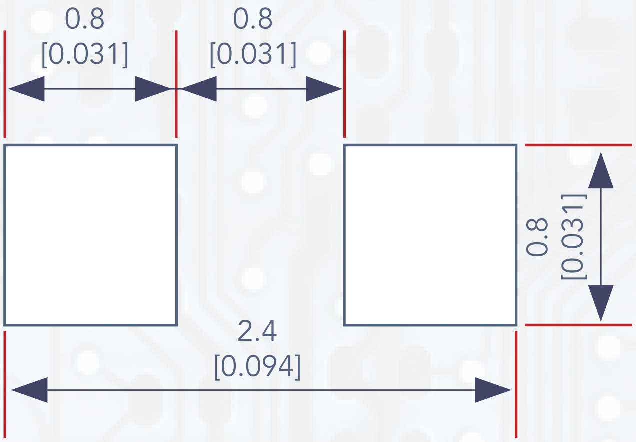
REFLOW SOLDERING		HAND SOLDERING	
Pre-Heat	160 °C ~ 180°C	Temperature	300°C
Pre-Heat Time	120 Seconds Max.	Soldering Time	3 Second Max - One Time Only
Peak Temperature	260°C Max		
Soldering Time	10 Seconds Max		
Condition	Refer to Temperature		

- Temperature - profile (surface of circuit board)

Use the following Conditions Shown in the Figure



- Recommend Pad Design (Units: mm)



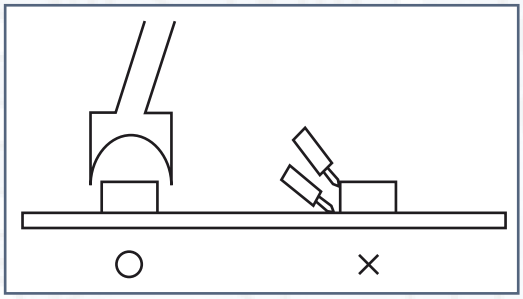
Reflow soldering should not be done more than two times
When soldering, do not put stress on the LEDs during heating

- Soldering Iron

When hand soldering, keep the temperature of the iron under 300°C, and at that temperature keep the time under 3 sec.
The hand soldering should be done only a time
The basic spec is ≤5 sec. when the temperature of 260°C, do not contact the resin when hand soldering.

- Rework

Customer must finish rework within 5 sec under 260°C
The head of iron can not touch the resin
Twin-head type is preferred



RELIABILITY

- TEST ITEMS AND RESULTS

TYPE	TEST ITEM	REF STANDARD	TEST CONDITIONS	NOTE	NUMBER OF DAMAGED
Environmental Sequence	Resistance to Soldering Heat (Reflow Soldering)	JESD22 - B106	Tsld - 260°C, 10 sec	2 times	0/22
	Temperature Cycle	JESD22 - A104	-40°C 30 min 25°C ↑↓ 5min 100°C 30 min	300 cycle	0/22
	Thermal Shock	JESD22 - A106	-35°C 15min ↑↓ 85°C 15 min	300 cycle	0/22
	High Temperature Storage	JESD22 - A103	T_a - 100°C	1000 hrs	0/22
	Low Temperature Storage	JESD22 - A119	T_a - 40°C	1000 hrs	0/22
Operation Sequence	Life Test	JESD22 - A108	T_a - 25°C I_F - 20mA	1000 hrs	0/22

- CRITERIA FOR JUDGING THE DAMAGE

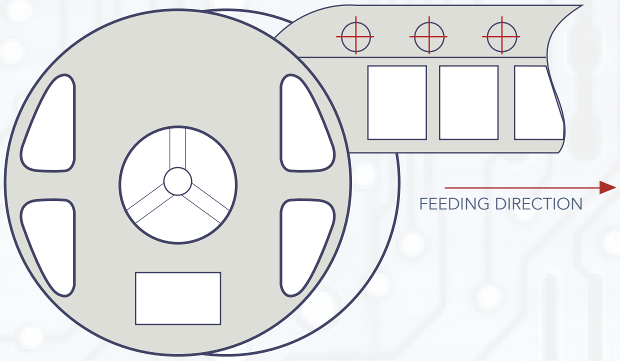
ITEM	SYMBOL	TEST CONDITIONS	CRITERIA FOR JUDGEMENT	
			MIN.	MAX.
Forward Voltage	VF	IF- 20mA	-	U.S.L *) x 1.1
Reverse Current	IR	VR - 5V	-	U.S.L*) x 2.0
Luminous Intensity	IV	IF - 20mA	L.S.L**) x 0.5	-

- U.S.L.: Upper Standard Level
- L.S.L.: Lower Standard Level

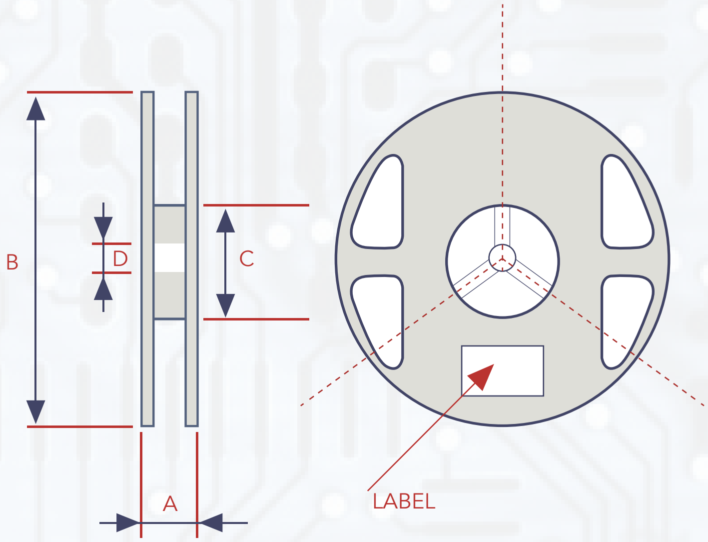
NOTE: Any reliability test standard change is confidential

PACKAGING SPECIFICATIONS

- Feeding Direction



- Dimensions of Reel (Unit: mm)



A	8.0 ± 0.1mm
B	178 ± 1mm
C	60 ± 1mm
D	13.0 ± 0.5mm

RoHS Pb HF

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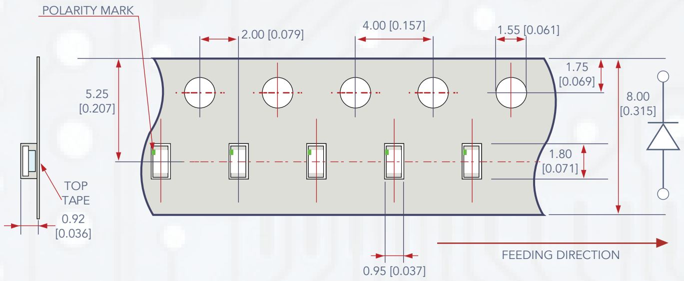
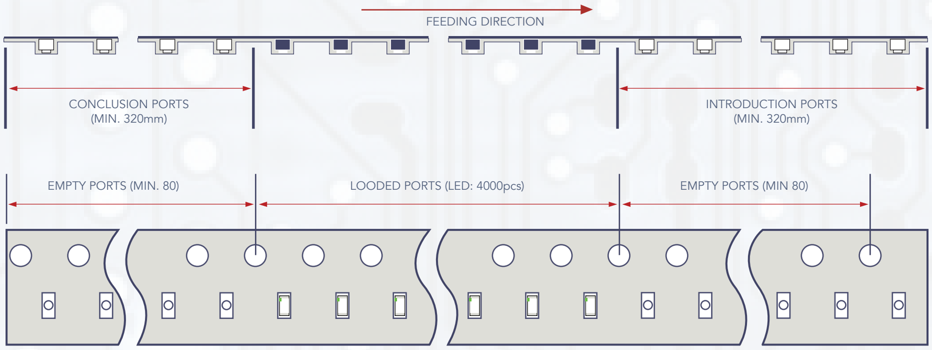
PACKAGING SPECIFICATIONS

- Dimensions of Tape (Unit: mm)

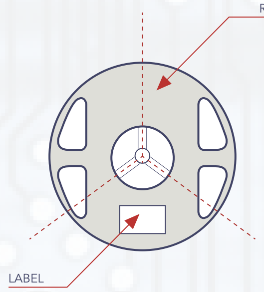


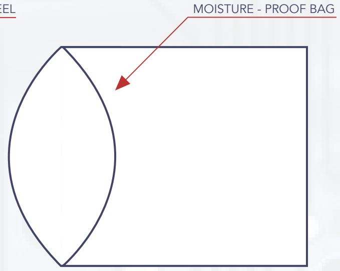
- Arrangement of Tape

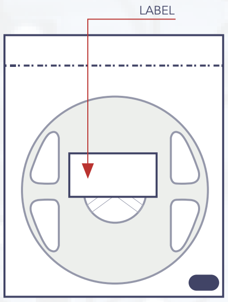


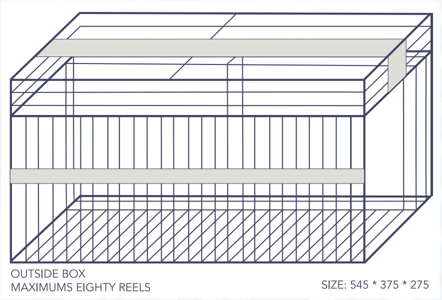
NOTE: Empty component pockets are sealded with top cover tape
The maximum number of missing lamps is two:
The cathode is oriented towards the tape sprocket hole in accordance with ANSI/EIA RS-481 specifications.
4,000 pcs / Reel

PACKAGING SPECIFICATIONS

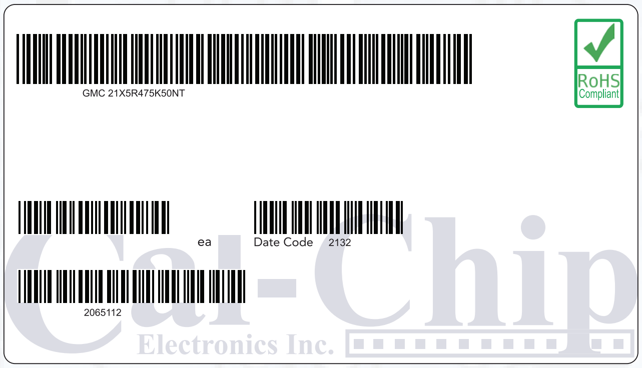








- Label


GMC 21X5R475K50NT

RoHS Compliant

ea

Date Code 2132

2065112

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- Cautions

- Packaging Specification

- Reeld products (numbers of products are 4,000 pcs) packed in a seal off moisture-proof bag along with a desiccant one by one, Eighty moisture-proof bag of maximum are put the outside box (size: abou 545mm x about 375mm x about 275mm) Together with buffer material, and it is packed. (Part No., quantity should appear on the label on the moisture-proof bag, part No. And wuatitiy should appear on the label on the cardboard box.) The number of the loading steps of outside box (cardboard box) has two steps.

- Storage Conditions

- **Before Opening the Packaging** - The LEDs should be kept at 30°C or less and 70% RH or less. The LEDs should be used within a hyear. When storing the LEDs, moisture proof packaging with absorbant material is recommended.

- **After Opening the Packge** - The LEDs should be kept at 30°C or less and 50% RH or less. THe LEDs should be soldered withing 168 hours (7 days) after opening the package. If unused LEDS remain, they should be stored in moisture proof packages, such as sealed containers with packages of moisture absorbent material. It is also recommended to return the LEDs to the original moisture proof bag and to reseal the moisture proof bag again.