ZM20-2NX

Product Code: C7C2-CR40201JD00-001

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Doc. ID: MOD-DS-031 Rev. Beta
Date: October 15, 2020

REVISION HISTORY

Rev.	Date	Charged	Approved	Revision Summary
Beta	2020/10/15	Fabien	Bruce	First issue

PRODUCT CHARACTERISTICS (T_j = 25 ˚C; I_F = 1100 mA)

Parameter		Values	Unit
Chromaticity coordinates acc. To CIE 1931 (typ.)		CIE-x : 0.323 CIE-y : 0.333	
Viewing Angle (FWHM)		120	°
Forward voltage	**(min.)**	6.2	V
	(typ.)	6.6	V
	(max.)	7.0	V
Reversed Current		not designed for reversed operation	
Thermal resistance junction / board	**(typ.)**	2.5	K/W
Radiating surface		2.34	mm^2

JEDEC MOISTURE SENSITIVITY

Level	Floor Life	
	Time	Conditions
1	unlimited	≦ 30°C / 85 % RH

BRIGHTNESS GROPES

Item	Group	Form Factor	Measured Test Condition 1100 mA Pulsed Operation Case Temperature T_c = 25°C Minimum Luminous Flux (lm)
ZA20-2NX	Z15	1x2	560
	Z16	1x2	630
	Z17	1x2	700

Notes:
• GPI maintains a tolerance of ±7% on flux
• Calculated flux values are for reference only

PERFORMANCE GROUPS – FORWARD VOLTAGE (IF = 1100 mA)

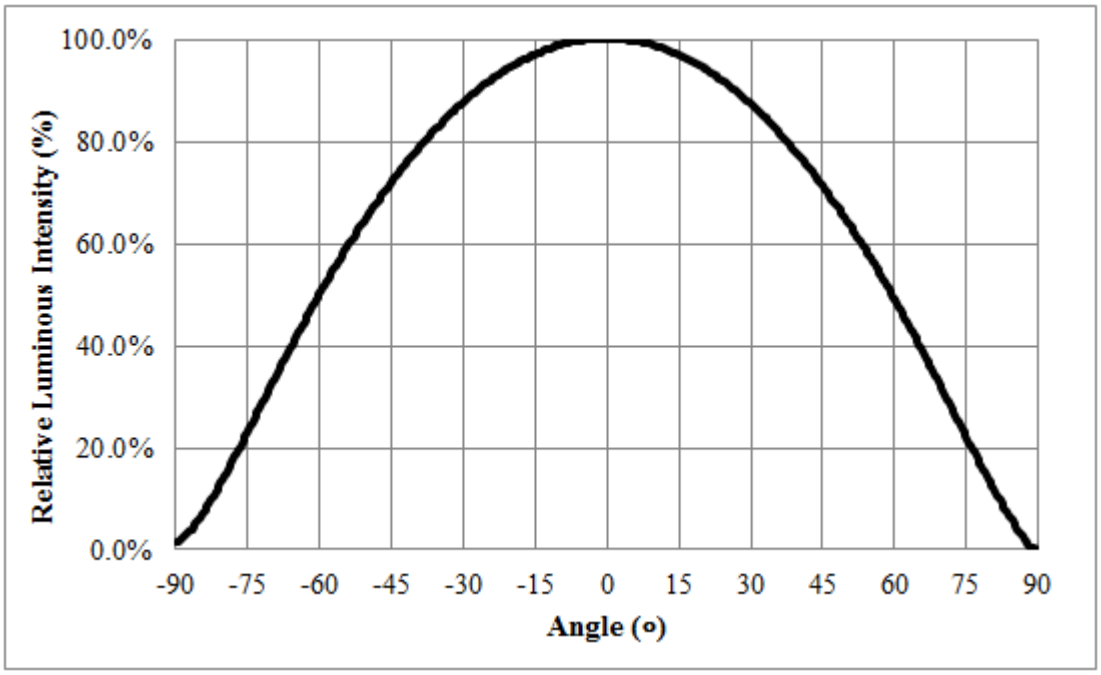
Group code	Minimum Forward Voltage (V)	Maximum Forward Voltage (V)
JF	6.0	6.4
JG	6.4	6.8
JH	6.8	7.2

Notes:
• GPI maintains a tolerance ±0.1V on voltage measurements

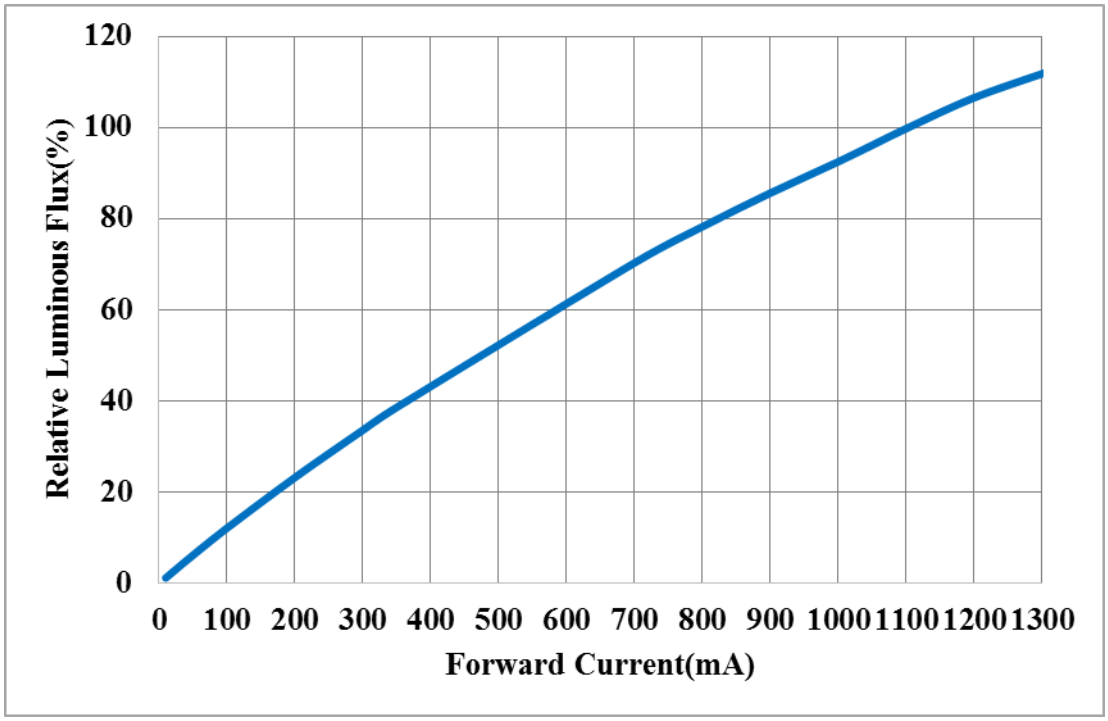
MAXIMUM RATINGS

Parameter		Values	Unit
Operating temperature range		-40 … 125	˚C
Storage temperature range		-40 … 125	˚C
Junction temperature		150	˚C
Forward Current	**(typ.)**	1100	mA
	(max.)	1300	mA
Reversed voltage		not designed for reversed operation	V
ESD Sensitivity		Up to 8	kV

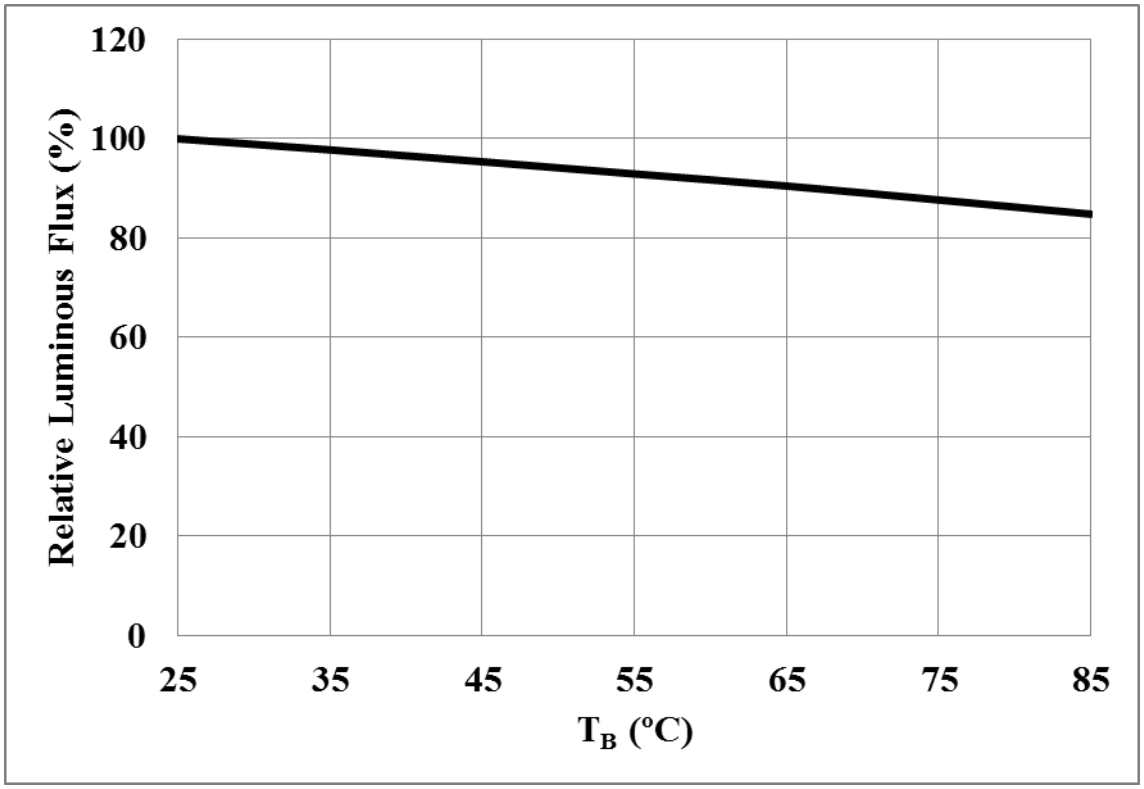
TYPICAL SPATIAL DISTRIBUTION —WHITE



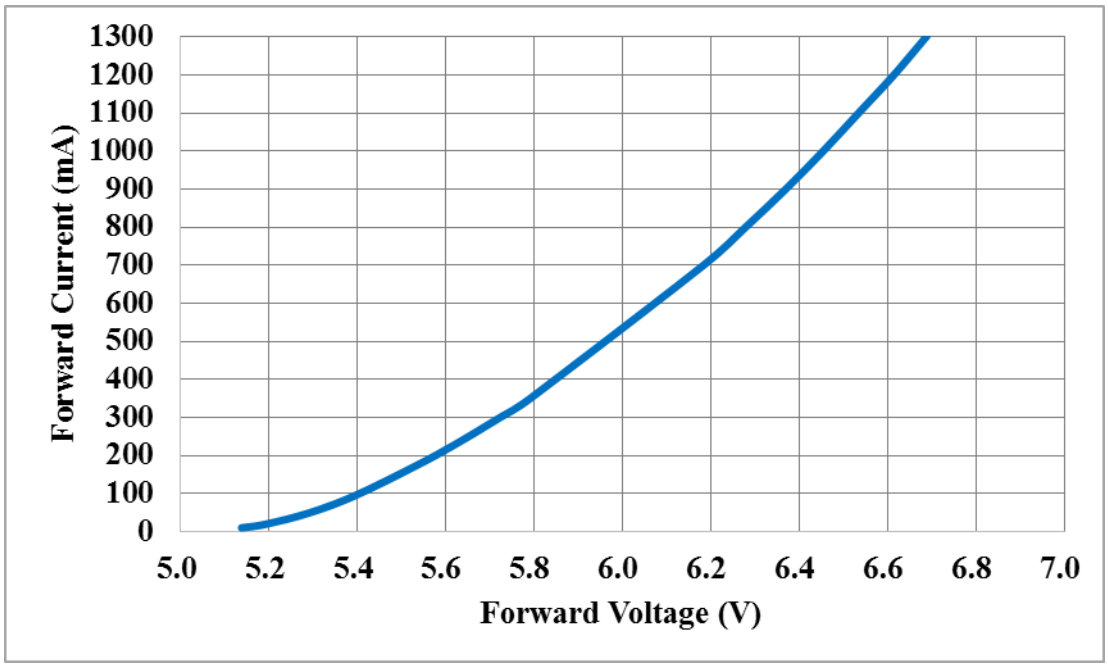
RELATIVE LUMINOUS FLUX VS. CURRENT (T_B = 25 °C)



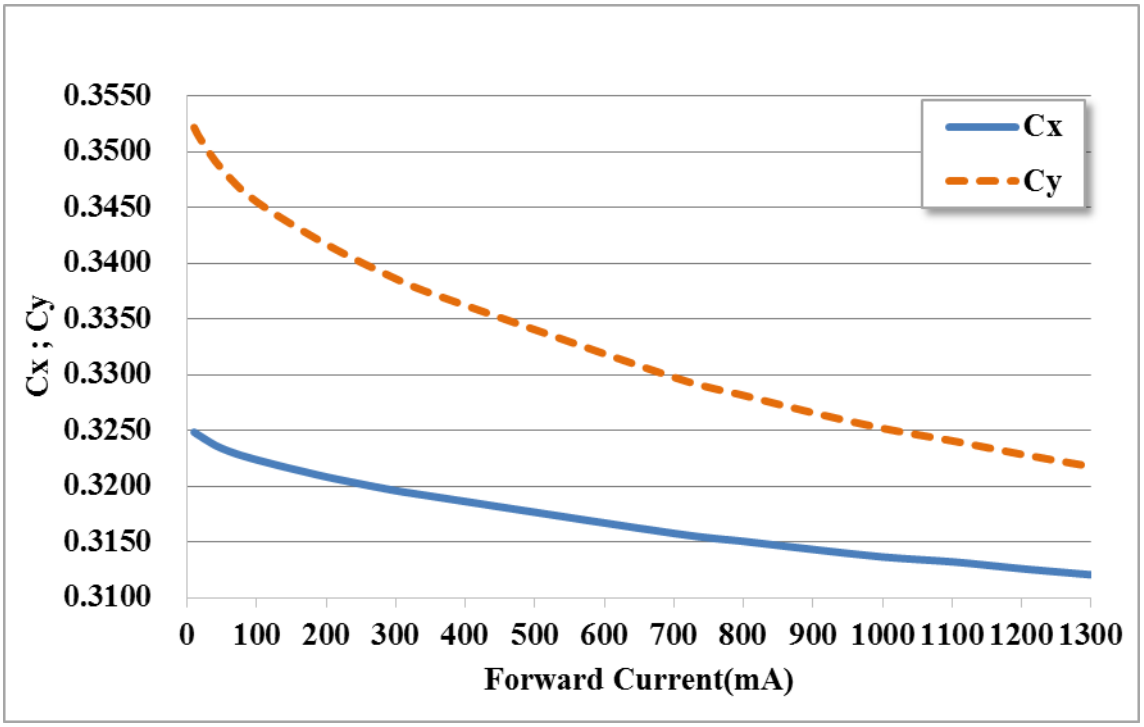
RELATIVE LUMINOUS FLUX VS. TEMPERATURE (I_F = 1100 mA)



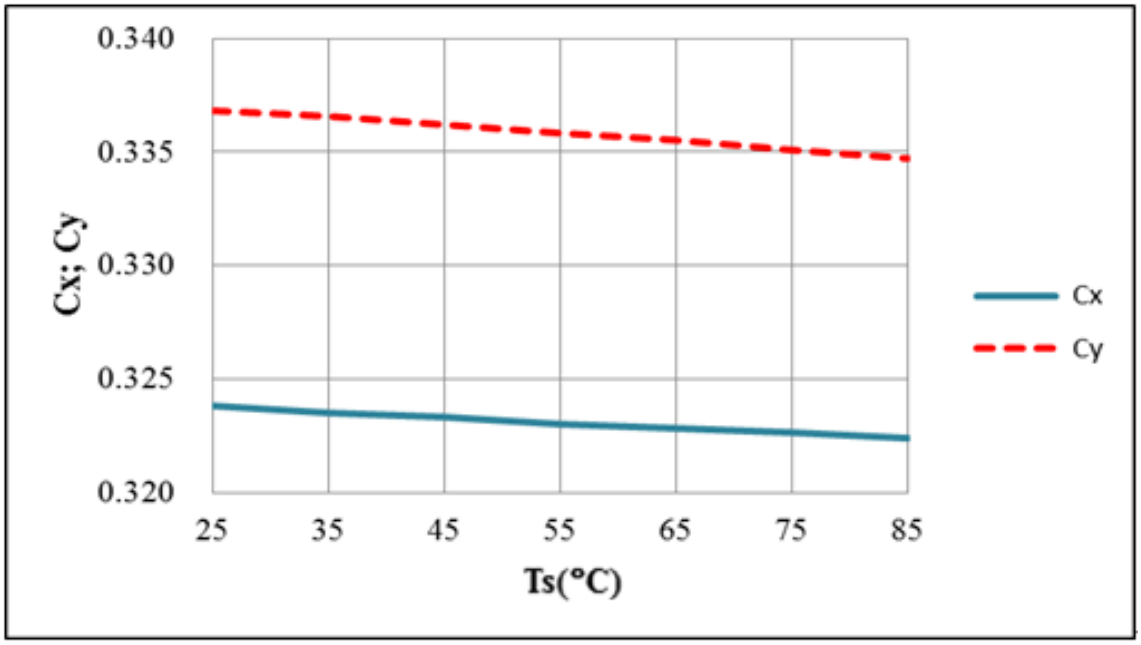
FORWARD VOLTAGE VS. FORWARD CURRENT (T_B = 25 °C)



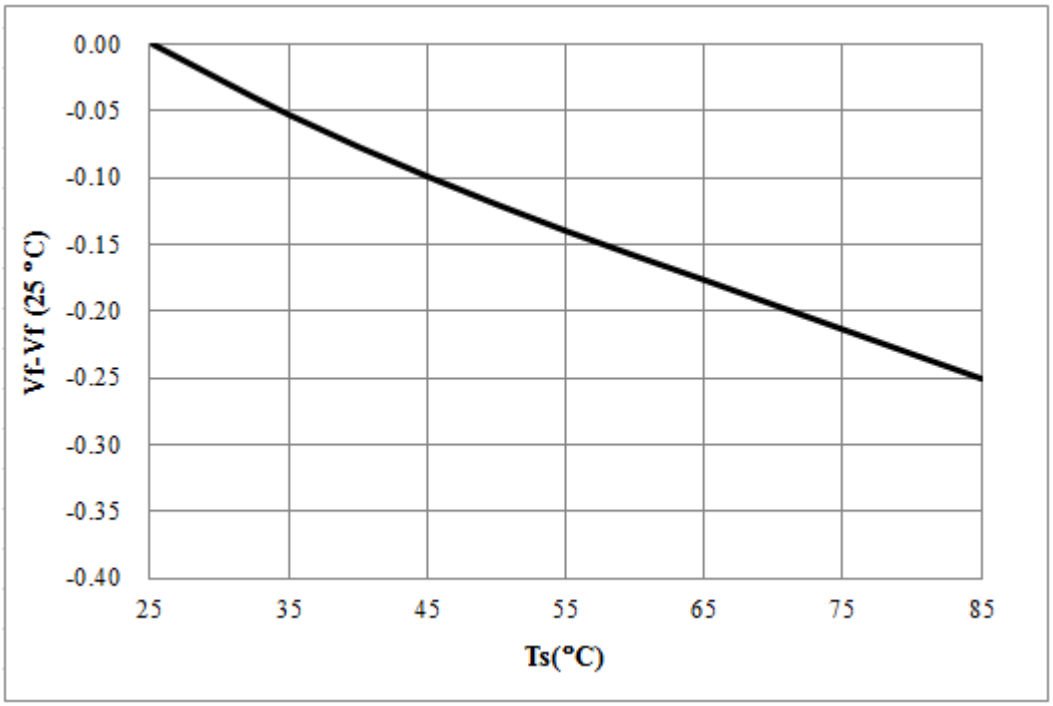
CHROMATICITY COORDINATE SHIFT (T_B = 25 °C)



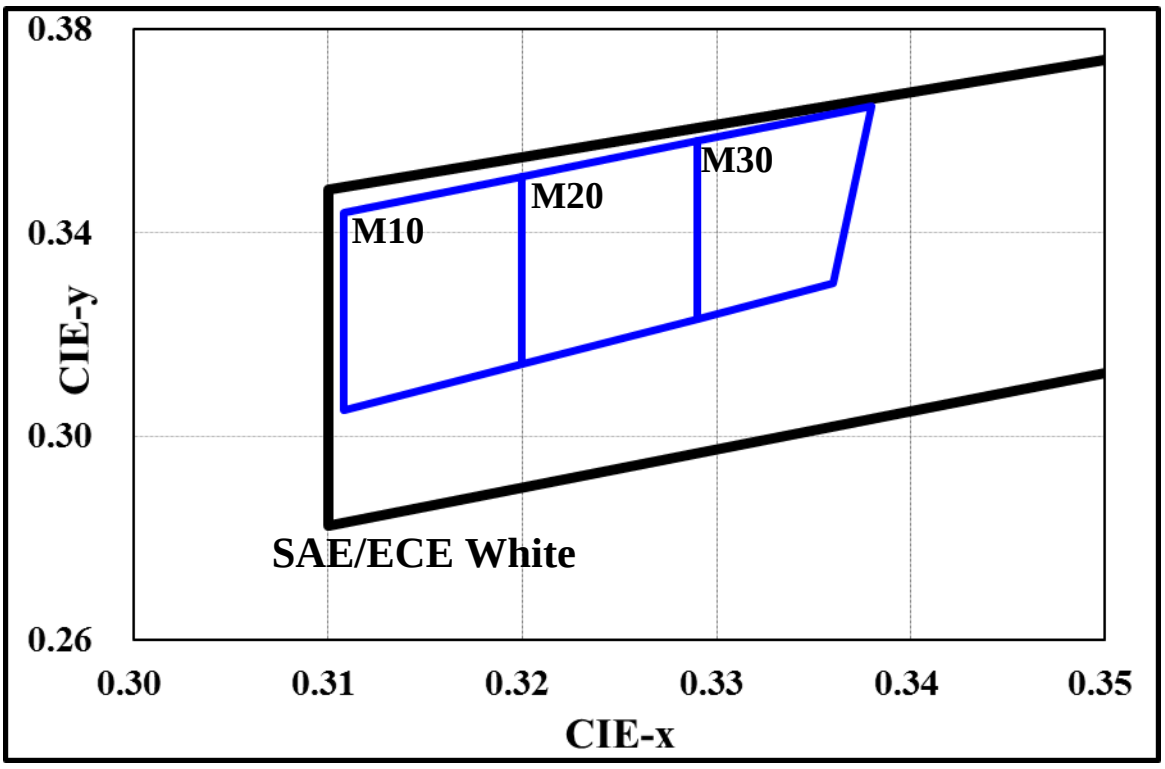
CHROMATICITY COORDINATE SHIFT (I_F = 1100 mA)



RELATIVE FORWARD VOLTAGE (I_F = 1100 mA)



GPI'S STANDARD WHITE CHROMATICITY REGINS PLOTTED ON THE 1931 CIE CURVE



PERFORMANCE GROUPS – CHROMATICITY

Bin Code	x	y
M10	0.32	0.3511
	0.3108	0.344
	0.3108	0.305
	0.32	0.3141

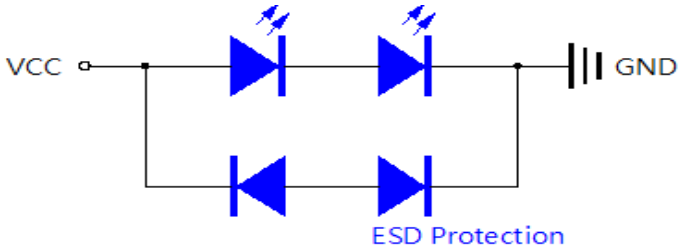
Bin Code	x	y
M20	0.32	0.3511
	0.329	0.3581
	0.329	0.3231
	0.32	0.3141

Bin Code	x	y
M30	0.329	0.3581
	0.338	0.365
	0.336	0.33
	0.329	0.3231

Notes:

•GPI maintains a tolerance of ±0.005 on chromaticity (CCx, CCy) measurements

Electrical Internal Circuit



RELIABILITY

Test Item	Test Conditions	Test Period	Ac/Re
High Temperature Forward Bias（HTFB）	TA=85°C ; IF=1300mA DC	1000 hours	0/1
High Temperature High Humidity Bias（HTHHB）	TA=85°C；85% humidity IF=1300mA DC	1000 hours	0/1
Temperature Cycle（TC）	-40°C / 125°C 15min dwell, 5min transfer	1000 cycles	0/1

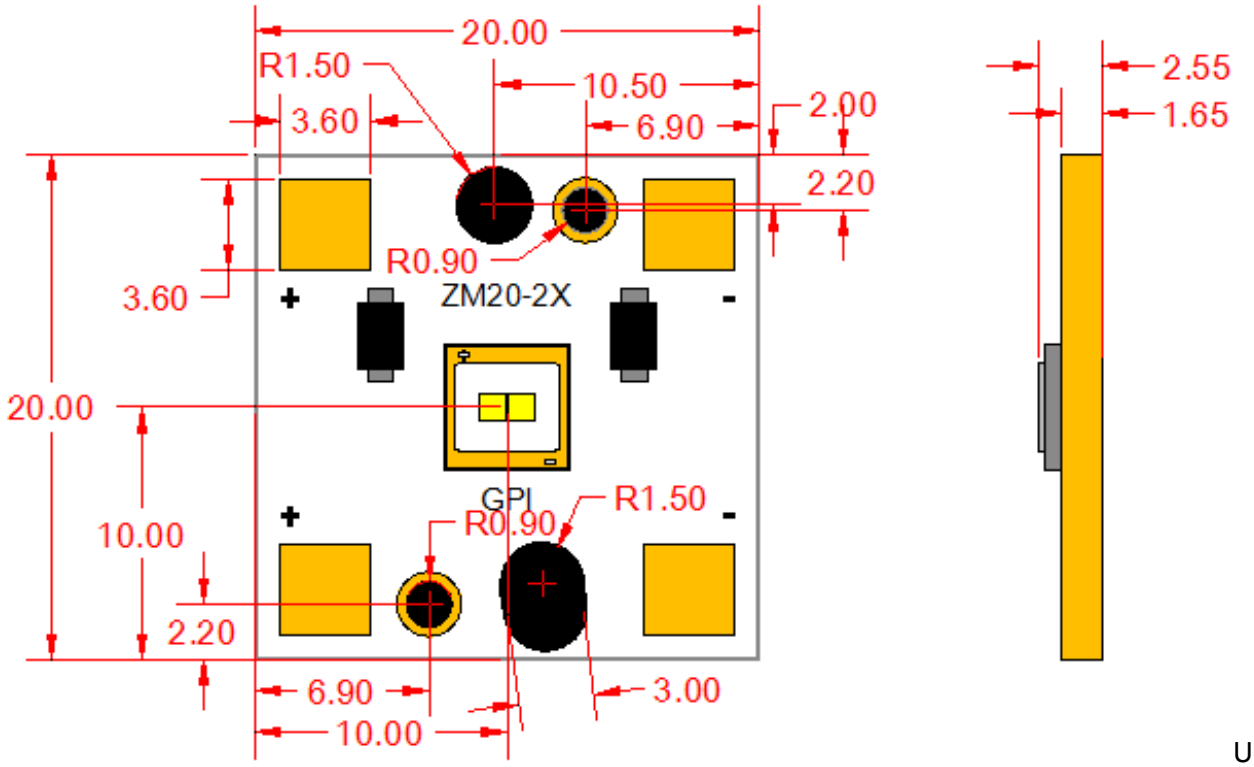
Notes:
- No catastrophic (LED Fail)
- Lumen maintenance > 85%
- Change in Vf < 10%
- Change in white color point Δx Δy ± 0.01
- No corrosion
- Moisture Sensitivity Level 1 (IPC/JEDEC J-STD-020)

ESD Protection Diode

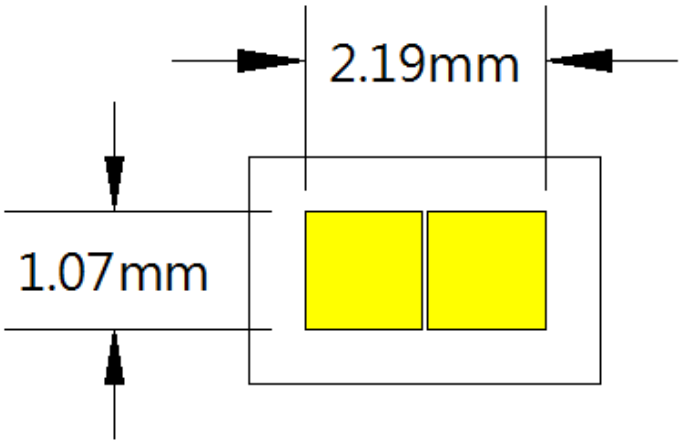
ELECTRICAL CHARACTERISTICS					
Reverse breakdown voltage at I_T, T_p = 5ms	Test current	Reverse working voltage	Reverse current at V_{RWM}	Peak pulse current T_p = 10/1000 μs	Reverse clamping voltage at I_{PPM}
V_{BR} MIN (V)	I_T (mA)	V_{RWM} MIN (V)	I_R (uA)	I_{PPM} (A)	V_C MAX (V)
8.89	1	8	0.1	14.7	13.6

MECHANICAL DIMENSIONS

All measurements are ±0.20 mm unless otherwise indicated.

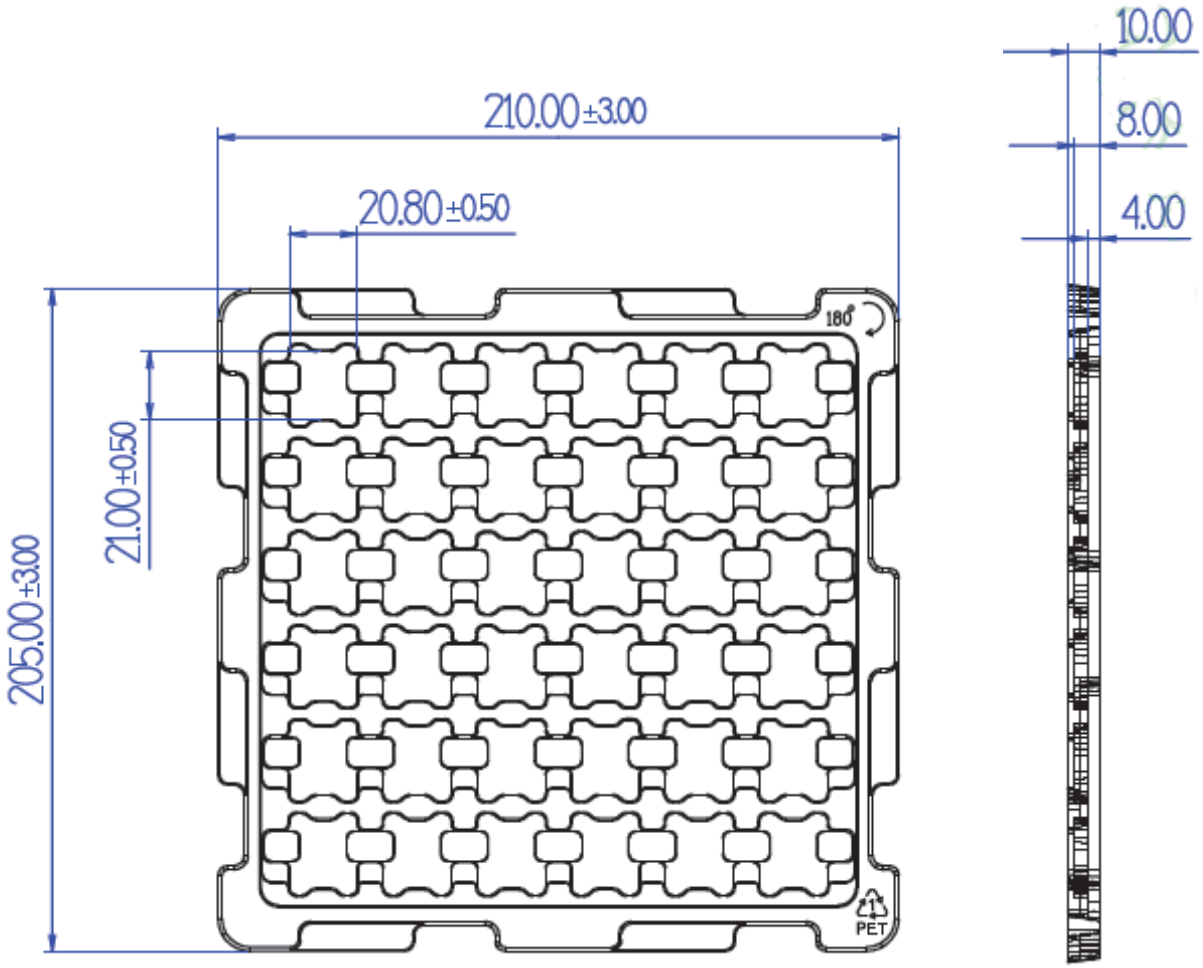


Unit: mm



TRAY

36 pcs. per tray



CAUTIONS

1. Moisture Sensitivity

   In testing, GPI has found ZA20-2NX LEDs to have 1 year floor life in condition <=30C/ 85% relative humidity (RH). Moisture testing included a 168-hr soak at 85C/60% RH followed by 3 times reflow cycles, with visual and electrical inspections at each stage.

   GPI recommends keeping ZA20-2NX LEDs in their sealed moisture-barrier packaging until immediately prior to use. GPI also recommends returning any unusual LEDs to the re-sealable moisture-barrier bag and closing the bag immediately after use.

2. Handling Precautions

   Do not handle LEDs with bare hands, it may contaminate the LED surface and affect optical characteristics. In the worst case, catastrophic failure from excess pressure through wire-bond breaks and package damage may result.

   Do not stack assembled PCBs together. Failure to comply can cause the resin portion of the product to be cut, chipped, delaminated and/or deformed. It may cause wire to break, leading to catastrophic failures.

3. Eye safety

   Warning: do not look at exposed lamp in operation. Eye injury can result.

4. Static Electricity

   Wristbands and anti-electrostatic gloves are strongly recommended and all devices, equipment and machinery must be properly grounded when handling the LEDs, which are sensitive against static electricity and surge.
   Precautions are to be taken against surge voltage to the equipment that mounts the LEDs.
   Unusual characteristics such as significant increase of current leakage, decrease of turn-on voltage or non-operation at a low current can occur when the LED is damaged.