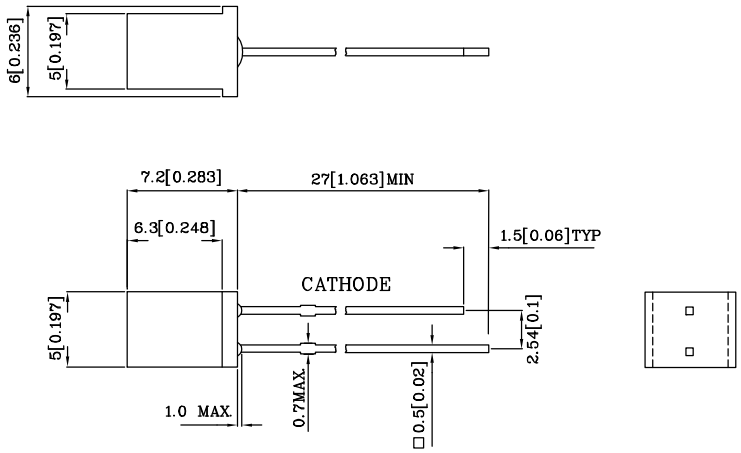
SunLED
www.SunLEDusa.com

Part Number: **XSFRA23MBVF**

5.0x5.0mm ICE CUBE LED

Features

- Low power consumption.
- Wide viewing angle.
- Reliable and rugged.
- Excellent uniformity of light output.
- Ideal as flush mounted panel indicators.
- Long life - solid state reliability.
- RoHS compliant.



Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is ± 0.25(0.01") unless otherwise noted.
3. Specifications are subject to change without notice.

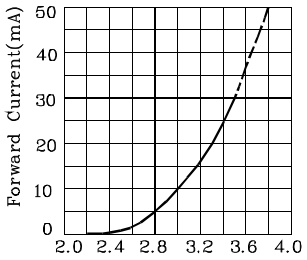
ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

Absolute Maximum Ratings (T_A=25°C)		**FRA (InGaN)**	**Unit**
Reverse Voltage	V_R	5	V
Forward Current	I_F	30	mA
Forward Current (Peak) 1/10 Duty Cycle 0.1ms Pulse Width	iFS	100	mA
Power Dissipation	P_D	120	mW
Operating Temperature	T_A	-40 ~ +85	°C
Storage Temperature	Tstg	-40 ~ +85	
Lead Solder Temperature [2mm Below Package Base]	260°C For 3 Seconds		
Lead Solder Temperature [5mm Below Package Base]	260°C For 5 Seconds		

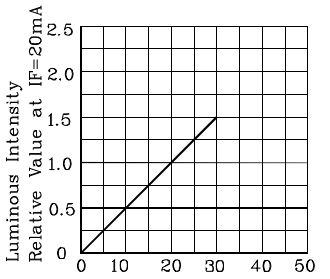
Operating Characteristics (T_A=25°C)		**FRA (InGaN)**	**Unit**
Forward Voltage (Typ.) (I_F=20mA)	V_F	3.3	V
Forward Voltage (Max.) (I_F=20mA)	V_F	4.0	V
Reverse Current (Max.) (V_R=5V)	I_R	50	uA
Chromaticity Coordinates (Typ.)	x	0.19	
	y	0.05	
Capacitance (Typ.) (V_F=0V, f=1MHz)	C	100	pF

Part Number	Emitting Color	Emitting Material	Lens-color	Luminous Intensity (IF=20mA) mcd		Viewing Angle 2 θ 1/2
				min.	typ.	
XSFRA23MBVF	Purple	InGaN	White Triple Diffused	10	49	110°

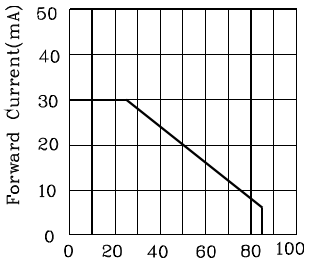
❖ FRA



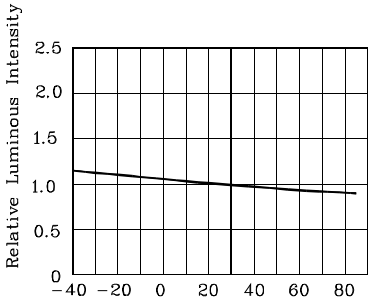
FORWARD CURRENT Vs.
FORWARD VOLTAGE



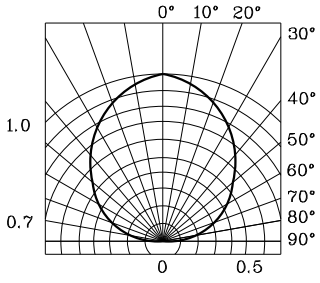
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT
DERATING CURVE

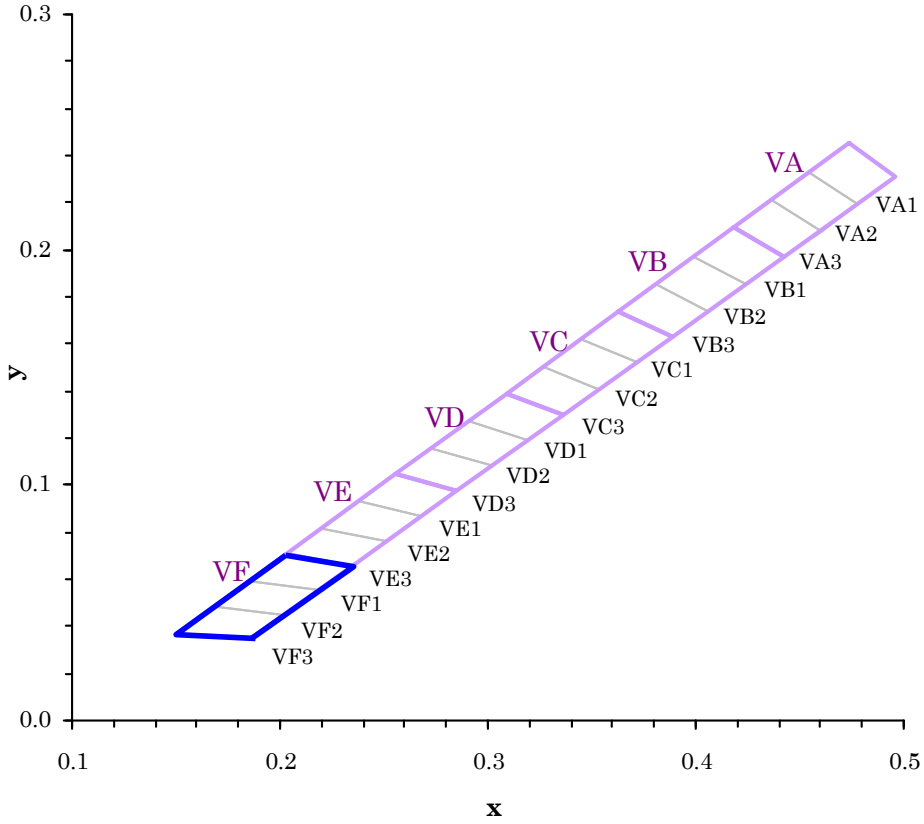


LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE



SPATIAL DISTRIBUTION

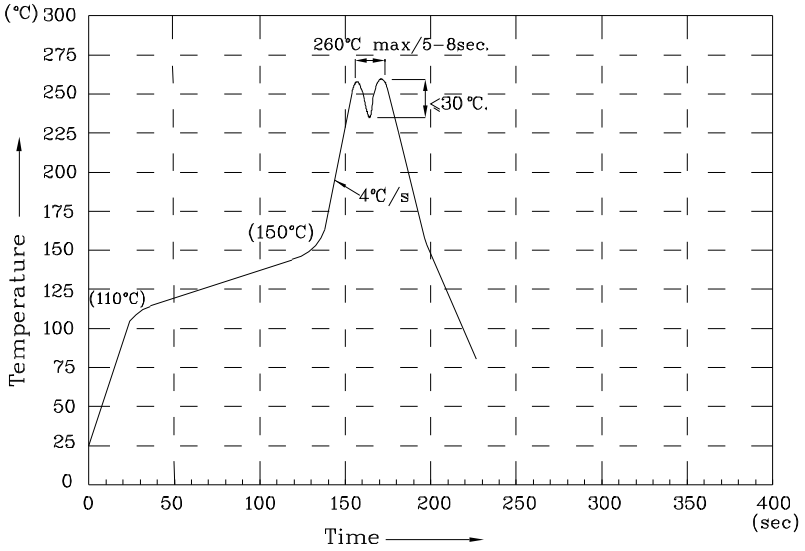
Violet CIE



Bin code	x	y	Bin code	x	y	Bin code	x	y
VA1	0.4735	0.2451	VC1	0.3629	0.1737	VE1	0.2556	0.1044
	0.4548	0.2330		0.3448	0.1620		0.2380	0.0931
	0.4783	0.2194		0.3713	0.1518		0.2682	0.0867
	0.4964	0.2309		0.3888	0.1629		0.2850	0.0973
VA2	0.4548	0.2330	VC2	0.3448	0.1620	VE2	0.2380	0.0931
	0.4363	0.2211		0.3267	0.1504		0.2205	0.0818
	0.4602	0.2080		0.3538	0.1408		0.2514	0.0761
	0.4783	0.2194		0.3713	0.1518		0.2682	0.0867
VA3	0.4363	0.2211	VC3	0.3267	0.1504	VE3	0.2205	0.0818
	0.4178	0.2091		0.3088	0.1388		0.2030	0.0705
	0.4422	0.1966		0.3364	0.1298		0.2347	0.0656
	0.4602	0.2080		0.3538	0.1408		0.2514	0.0761
VB1	0.4178	0.2091	VD1	0.3088	0.1388	VF1	0.2030	0.0705
	0.3994	0.1973		0.2910	0.1273		0.1857	0.0593
	0.4243	0.1853		0.3192	0.1189		0.2182	0.0551
	0.4422	0.1966		0.3364	0.1298		0.2347	0.0656
VB2	0.3994	0.1973	VD2	0.2910	0.1273	VF2	0.1857	0.0593
	0.3811	0.1855		0.2732	0.1158		0.1683	0.0481
	0.4065	0.1741		0.3021	0.1081		0.2018	0.0448
	0.4243	0.1853		0.3192	0.1189		0.2182	0.0551
VB3	0.3811	0.1855	VD3	0.2732	0.1158	VF3	0.1683	0.0481
	0.3629	0.1737		0.2556	0.1044		0.1510	0.0369
	0.3888	0.1629		0.2850	0.0973		0.1856	0.0345
	0.4065	0.1741		0.3021	0.1081		0.2018	0.0448

Notes:
Shipment may contain more than one chromaticity regions.
Orders for single chromaticity region are generally not accepted.
Measurement tolerance of the chromaticity coordinates is ±0.02.

Wave Soldering Profile For Lead-free Through-hole LED.



NOTES:

1. Recommend the wave temperature 245℃~260℃. The maximum soldering temperature should be less than 260℃.
2. Do not apply stress on epoxy resins when temperature is over 85 degree℃.
3. The soldering profile apply to the lead free soldering (Sn/Cu/Ag alloy).
4. No more than once.

Remarks:

If special sorting is required (e.g. binning based on forward voltage, Luminous intensity/ luminous flux, or chromaticity), the typical accuracy of the sorting process is as follows:

1. Measurement tolerance of the chromaticity coordinates is ±0.02.
2. Luminous intensity/ luminous flux: +/-15%.
3. Forward Voltage: +/-0.1V.

Note: Accuracy may depend on the sorting parameters.

PACKING & LABEL SPECIFICATIONS XSFRA23MBVF