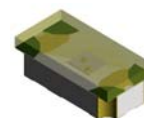


0402 SMD LED 0.2mm Height

VS 1W99M

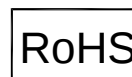
Description

The major breakthrough in VS 1W99M White color emitted is package in dimension L x W x H, 1.0 * 0.5 * 0.2 mm with yellow diffuse lens. The dice used in this series is InGaN material. The advantages of InGaN are low power consumption and obtaining high luminous intensity under low current driving condition. The Wavelengths and Luminous Intensities of this series are grouped under 5mA for uniformity. These LED are suitable for multiple usages in series connection applications.



Applications

- Cellular phone display
- Backlight keypads
- Industrial control systems signal indicator
- Automotive features



Electronic Optical Characteristics (at 5mA):

Part Number	Emitted Color	C.C		Lens Color	Iv(mcd)		View Angle	VF(V)	
		X	Y		Min.	Typ.		Min.	Max.
VS 1W99M	White	0.29	0.30	Yellow	140	224	120	2.7	3.2

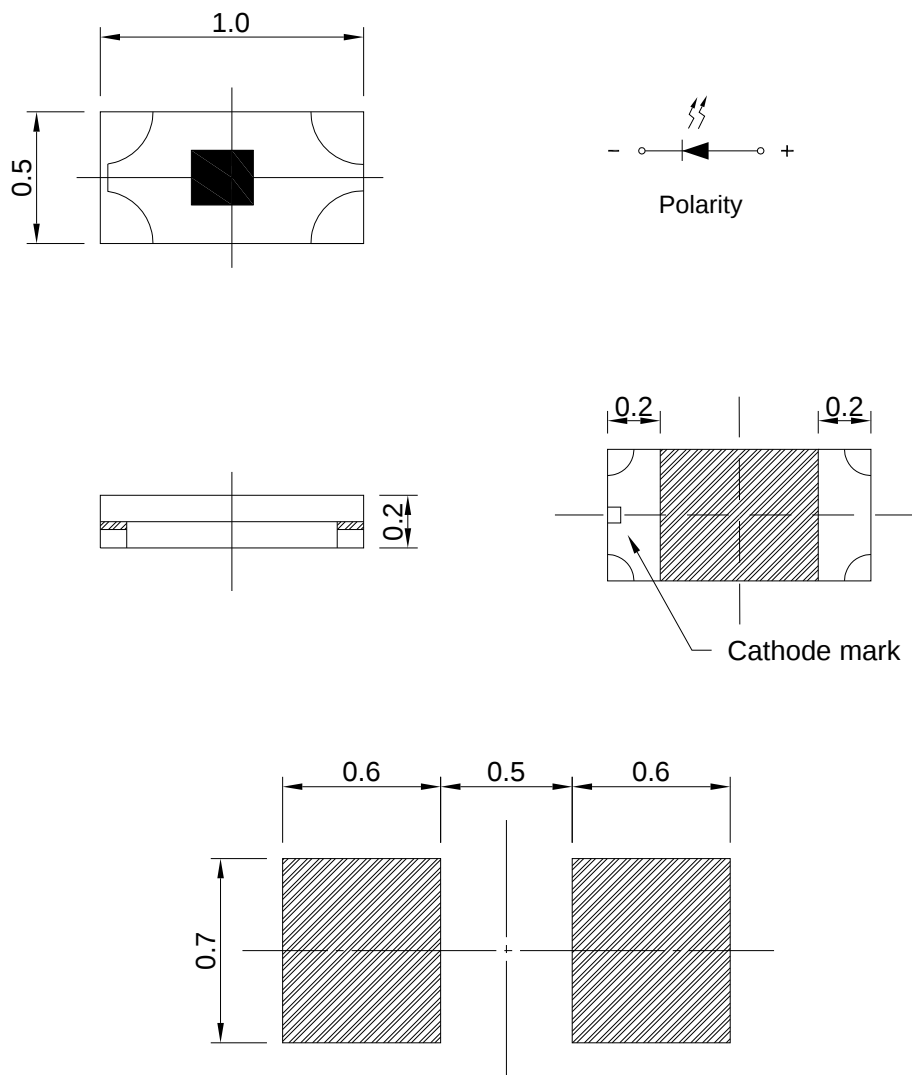
Absolute Maximum Ratings (at Ta=25°C)

P _D (mW)	I _{FP} (mA)	I _F (mA)	Iron Solder(°C)	I _R (uA)@V _R =5V	Topr(°C)	Tstg(°C)
60	100*	25	350 ± 5 for 3 sec.	50	-40~+85	-40~+100

Note: Please take note the Absolute Maximum Rating values. Any operation beyond the specify ratings in this table will result degradation of LED life-span and may cause LED to fail.

* I_{FP}: Peak Forward Current under 1/10 duty, 1KHz condition

Package Dimension:

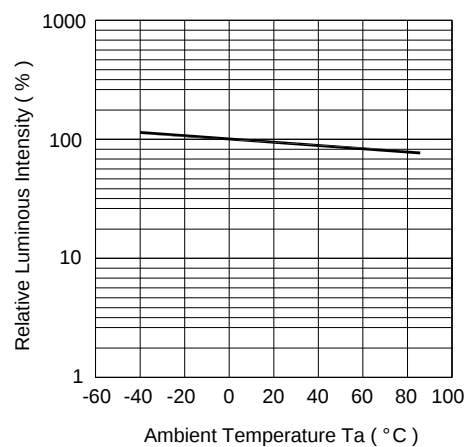
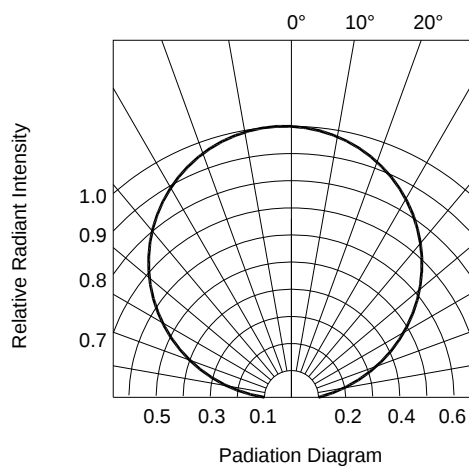
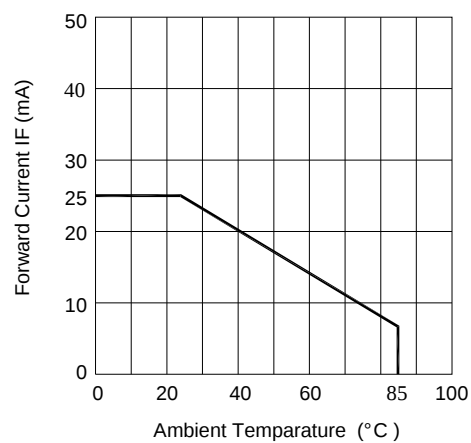
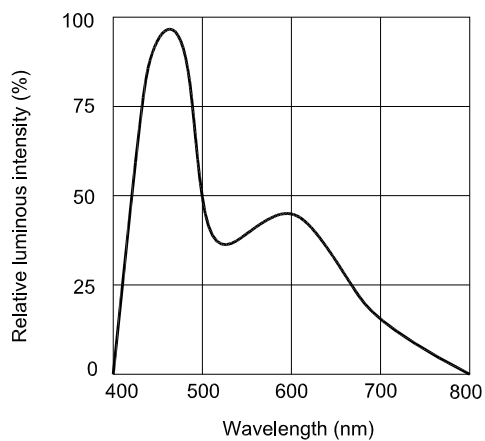
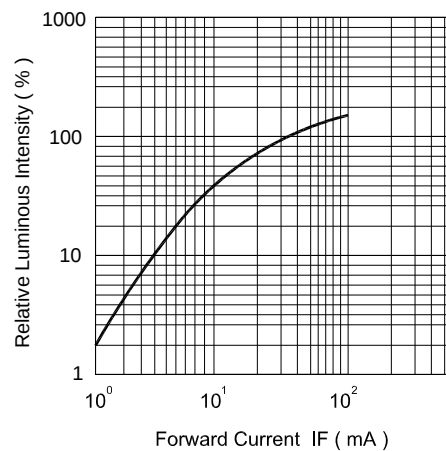
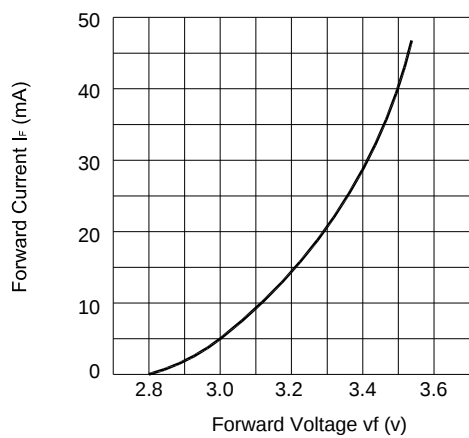


Recommended Soldering Pad

Notes:

1. All dimensions are millimeters.
2. Tolerance is $\pm 0.2\text{mm}$ unless otherwise specified.
3. Specifications are subject to change without notice.

Typical Electro-optical Characteristics Curves



Color Ranks ($I_F=5\text{mA}$, $T_a=25^\circ\text{C}$)

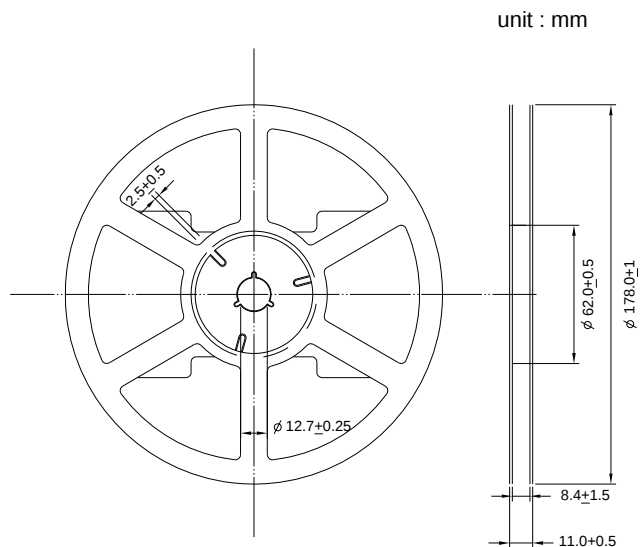
Rank	CIE x	CIE y
1A	0.274	0.226
	0.274	0.258
	0.294	0.286
	0.294	0.254
1B	0.274	0.258
	0.274	0.291
	0.294	0.319
	0.294	0.286
2A	0.294	0.254
	0.294	0.286
	0.314	0.315
	0.314	0.282
2B	0.294	0.286
	0.294	0.319
	0.314	0.347
	0.314	0.315
3A	0.314	0.282
	0.314	0.315
	0.334	0.343
	0.334	0.311

Measurement uncertainty of the color coordinates: ± 0.01

Specification for bin grade @ 5 mA

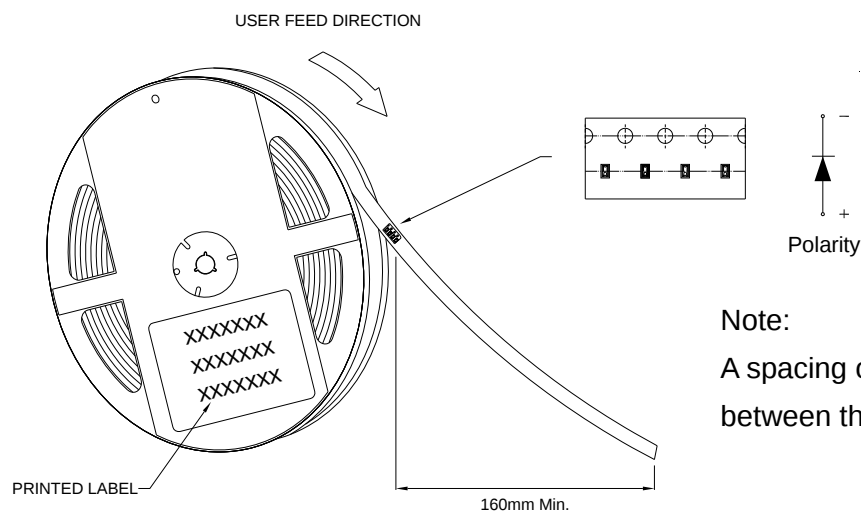
Iv(mcd)			VF(Volt)		
Code	Min.	Max.	Code	Min.	Max.
47	140	180	A	2.7	2.8
48	180	224	B	2.8	2.9
49	224	280	C	2.9	3.0
50	280	355	D	3.0	3.1
--	--	--	E	3.1	3.2

Reel Dimension:



Note:

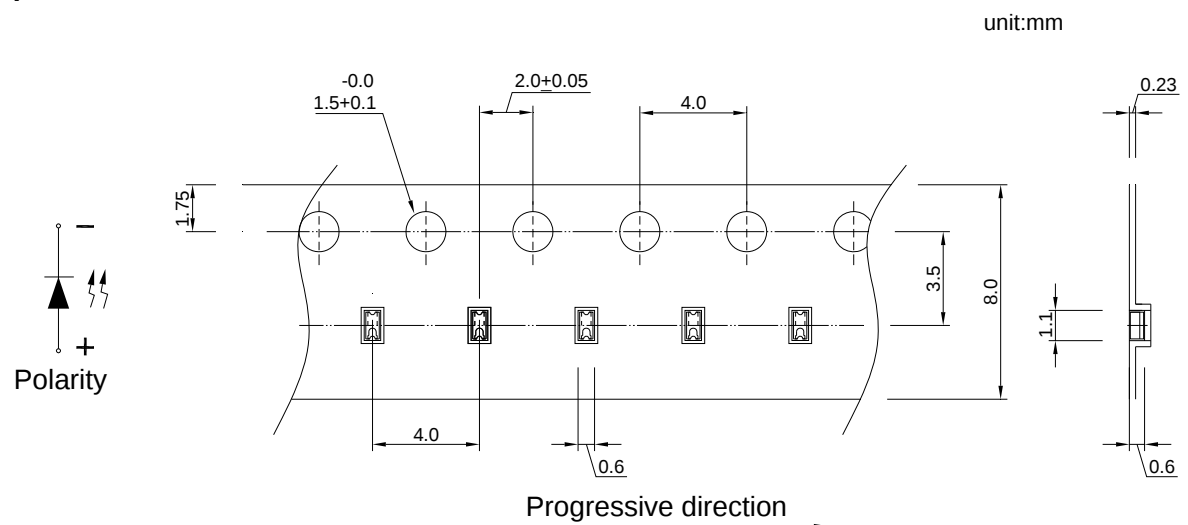
Available in 8mm carrier tape on 178mm diameter reels. (3000 pieces)



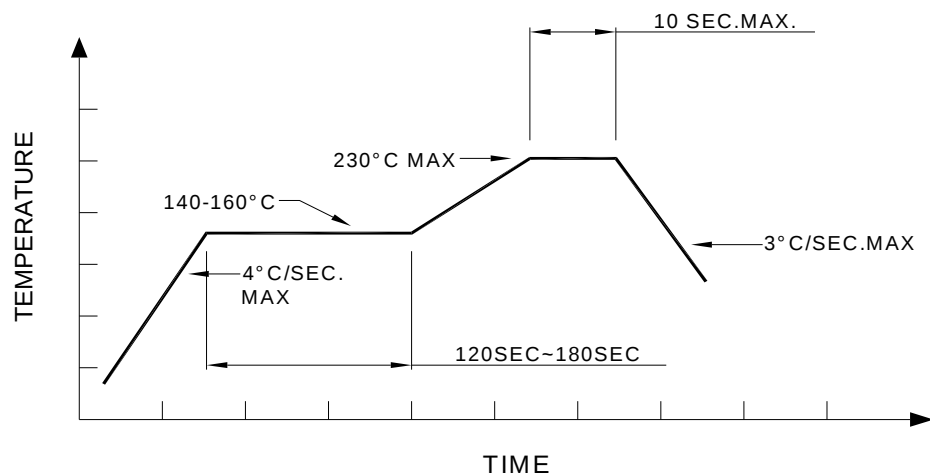
Note:

A spacing of approximately 160mm between the front edge of tape

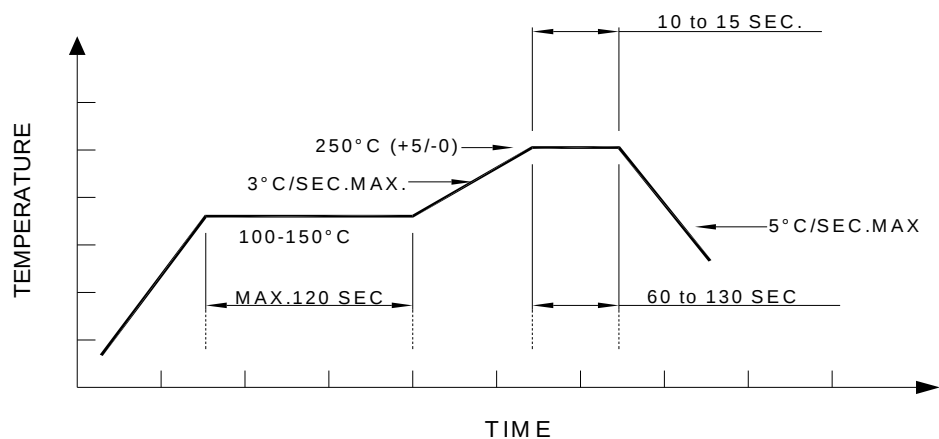
Tape Dimension:



Recommended re-flow soldering profile:



Recommended Pb-free re-flow soldering profile:



Note:

All the specifications listed in this data sheet are suitable for general electronic equipment, office equipment and communication devices. Kindly consult Sales Representatives for specific reliabilities request, Forward Voltage, Luminous Intensity, Wavelength, Radiant Power or Viewing Angle.