SpiceLED™

Like spice, its diminutive size is a stark contrast to its standout performance in terms of brightness, durability and reliability. Despite being the smallest in size yet the SpiceLED<sup>™</sup> packs a powerful performance and is a highly reliable design device. Its versality enables its application in automotive applicances, key-pad illumination, hand-held devices such as PDAs, notebooks, compact back-lighting applications, consumer appliances, office equipment, audio and video equipment.

DATA SHEET:

**SpiceLED**<sup>™</sup>

InGaN S-Spice : SSx-SLD

# Features:

- > High brightness surface mount LED.
- > Super wide viewing angle of 160°.

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Semiconductors

Innovating Illumination

- > Equivalent to 0603 package outline. Copper lead-frame construction.
- > Qualified according to JEDEC moisture sensitivity Level 2.
- > Compatible to both IR reflow soldering and TTW soldering.
- > Environmental friendly; RoHS compliance.

# Applications:

- > Automotive: interior applications, eg: switches, telematics, climate control system, dashboard, etc.
- > Consumer Appliances: LCD illumination as in PDAs, LCD TV.
- > Communication: indicator and backlight in mobilephone.
- > Display: full color display video notice board.
- > Industry: white goods (eg: Oven, microwave, etc.).









5.60 - 7.20 7.20 - 9.00

Part Ordering Number	Chip Technology / Color	Viewing Angle°	Luminous Intensity @ IF = 2mA IV (mcd)
SST-SLD-L2N1-1	InGaN	160	14.00 - 35.50
• SST-SLD-L2	True Green, 525 nm		14.00 - 18.00
• SST-SLD-M1			18.00 - 22.40
• SST-SLD-M2			22.40 - 28.50
• SST-SLD-N1			28.50 - 35.50
SSB-SLD-H2K1-1	InGaN	160	3.55 - 9.00
• SSB-SLD-H2	Blue, 470 nm		<b>3</b> .55 - 4.50
• SSB-SLD-J1			4.50 - 5.60

NOTE

• SSB-SLD-J2

• SSB-SLD-K1

1. All part number above comes in a quantity of 3000 units per reel.

2. Other luminious intensity groups are also available upon request

3. Luminous intensity is measured with an accuracy of ± 11%.

4. Wavelength binning is carried for all units as per the wavelength-binning table. Only one wavelength group is allowed for each reel.

# Wavelength Grouping

Color	Group	Wavelength distribution (nm)
SST; True Green	Full	520 - 536
	W	520 - 524
	х	524 - 528
	Y	528 - 532
	Z	532 - 536
SSB; Blue	Full	464 - 476
,	W	464 - 468
	Х	468 - 472
	Y	472 - 476

Dominant wavelength is measured with an accuracy of  $\pm \mbox{ 1nm}$  .

#### Electrical Characteristics at Ta=25°C

		Vf @ If = 2mA		Vf @ lf = 10mA	Vr @ lr = 10uA
Part Number	Min. (V)	Тур. (V)	Max. (V)	Тур. (V)	Min. (V)
SSx-SLD	2.6	2.8	3.0	3.0	5

Forward voltage, Vf is measured with an accuracy of  $\pm$  0.1 V.

#### **Absolute Maximum Ratings**

	Maximum Value	Unit
DC forward current	15	mA
Peak pulse current; (tp $\leq$ 10µs, Duty cycle = 0.1)	100	mA
Reverse voltage; Ir <sub>max</sub> = 10µA	5	V
ESD threshold (HBM)	1000	V
LED junction temperature	110	°C
Operating temperature	-40 +100	°C
Storage temperature	-40 +100	°C
Power dissipation (at room temperature)	45	mW

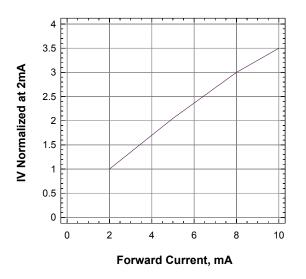
#### Material

	Material		
Lead-frame	Cu Alloy With NiPdAu Plating		
Package	High Temperature Resistant Epoxy Resin		

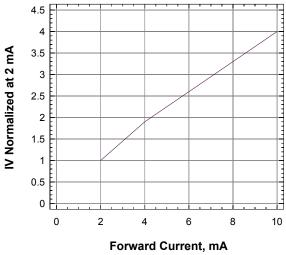
Note: product is Pb free

## InGaN S-Spice : SSx-SLD

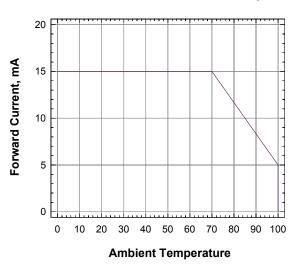
#### Intensity Vs Forward Current (True Green)



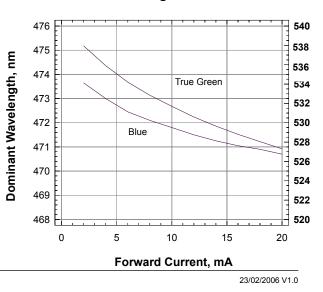
# Intensity Vs Forward Current (Blue)



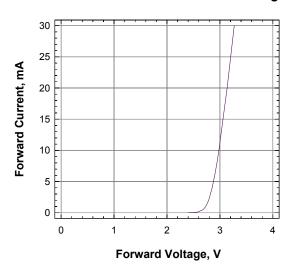
Maximum Current Vs Ambient Temperature



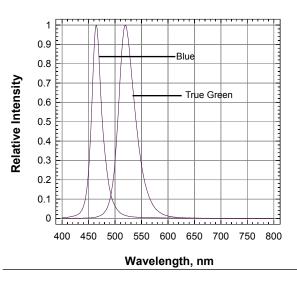
**Dominant Wavelength Vs Forward Current** 



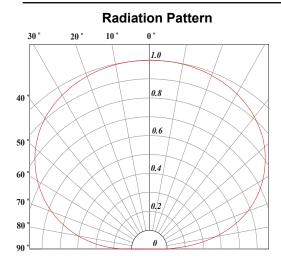
#### Forward Current Vs Forward Voltage



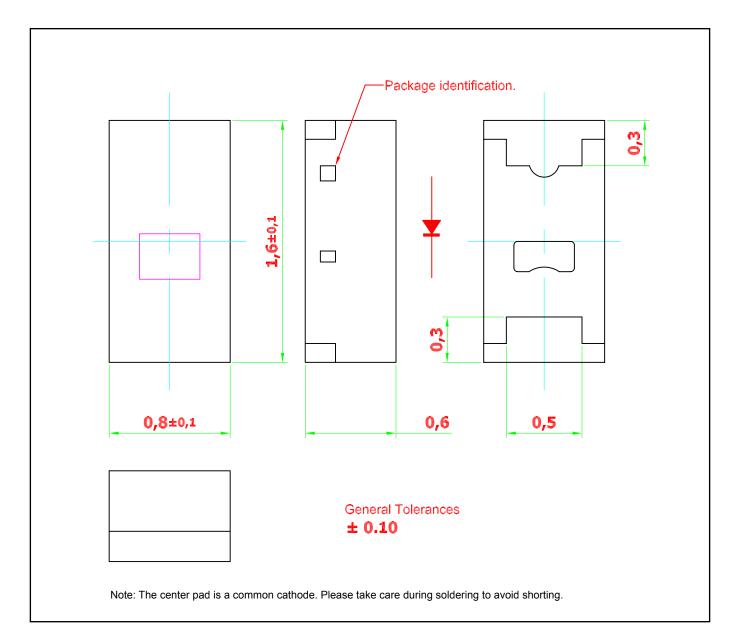
**Relative Intensity Vs Wavelength** 



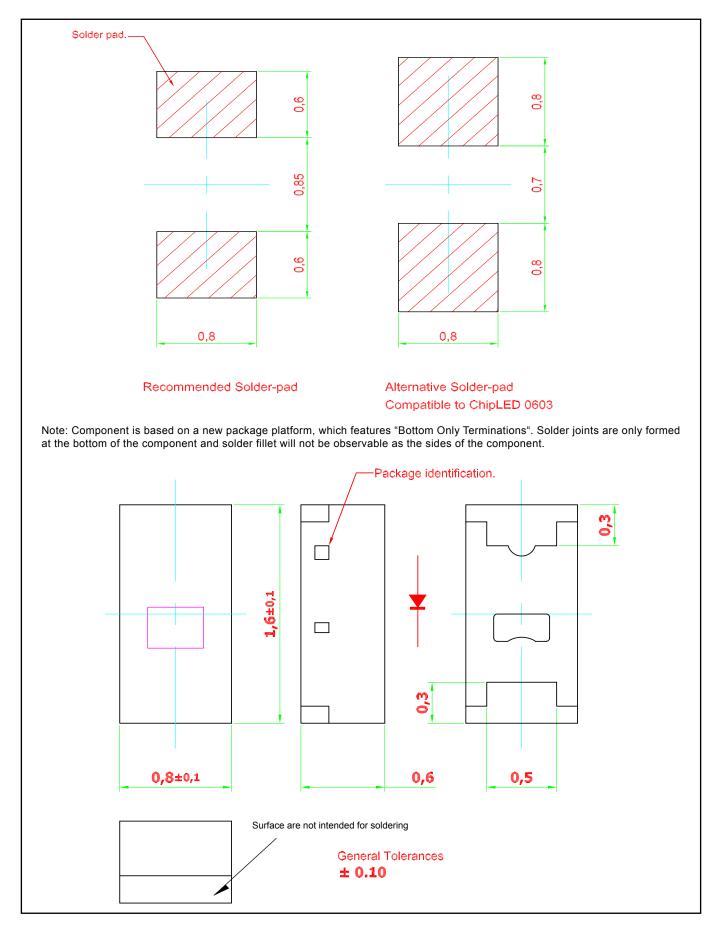








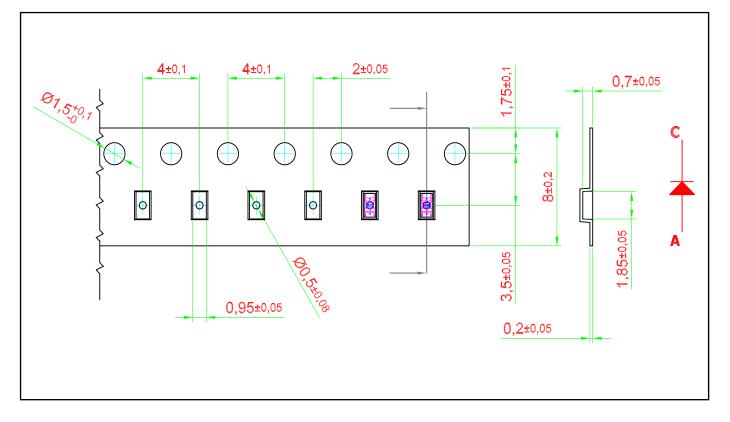
#### **Recommended Solder Pad**





#### **Taping and orientation**

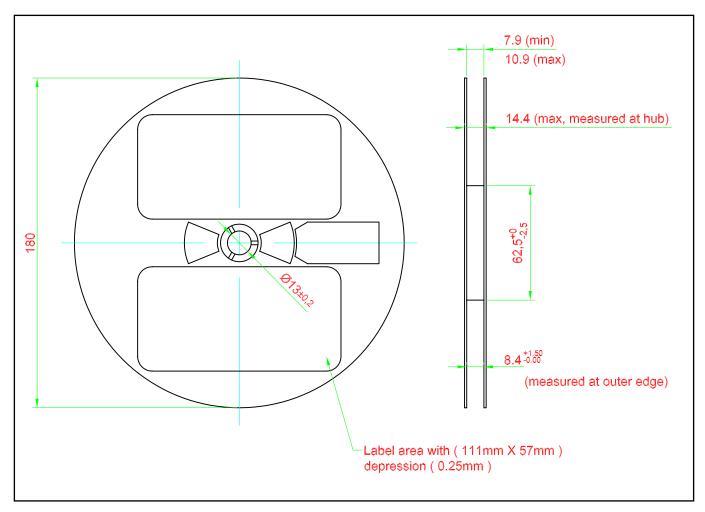
- Reels come in quantity of 3000 units.
- Reel diameter is 180 mm.





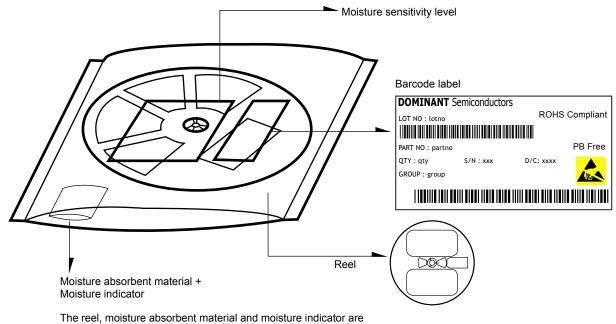
InGaN S-Spice : SSx-SLD

#### **Packaging Specification**



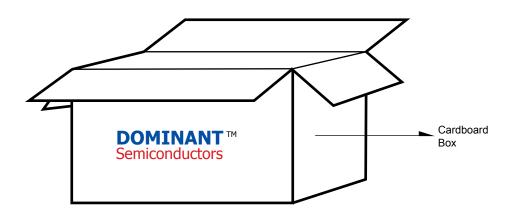
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#### **Packaging Specification**



sealed inside the moisture proof foil bag

	Average 1pc SpiceLED	1 completed bag (3000pcs)
Weight (gram)	0.001	140 ± 10

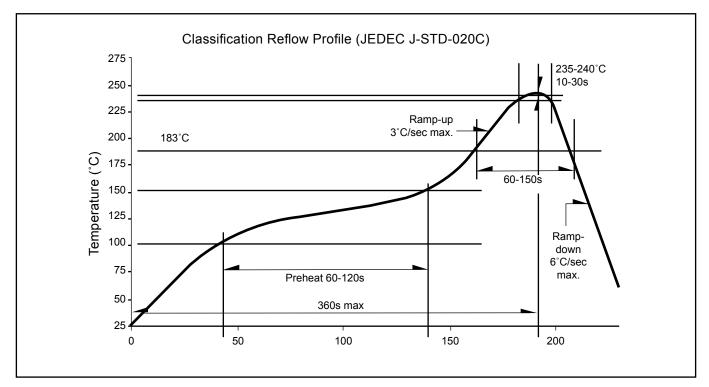


## For SpiceLED<sup>™</sup>

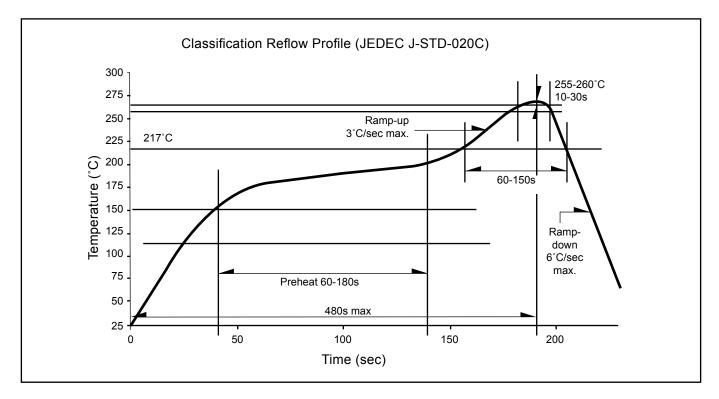
Cardboard Box Size	Dimensions (mm)	Empty Box Weight (kg)	Reel / Box	Quantity / Box (pcs)
Small	300 x 250 x 250	0.58	15 reels MAX	45,000 MAX
Large	416 x 516 x 476	1.74	55 reels MAX	165,000 MAX



## Recommended Sn-Pb IR-Reflow Soldering Profile



# **Recommended Pb-free Soldering Profile**



#### **Revision History**

New Format	
	23 Feb 2006

#### NOTE

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