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Snowdragon Industrial Co.,Ltd

DATA SHEET

MODEL N.O.: SDS3528TCT-S-OK-B

ENG. N.O.: 120221001

Description:

- **Shape: 3.5*2.8*1.9mm Surface Mount LEDs**
- **Emitting Color: RGB Full Color**
- **Lens Color : Clear Lucite**
- **Viewing Angle: 120°**
- **Chip Material: AlGaInP&InGaN**

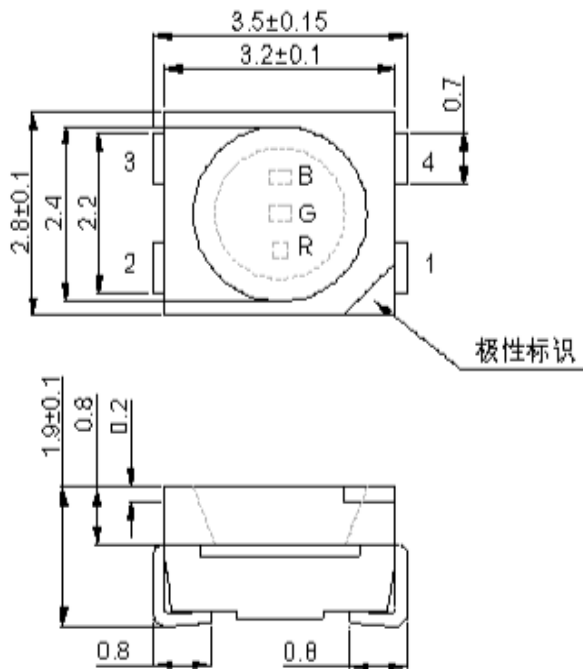
PREPARED BY	CHECKED BY	APPROVED BY
CUSTOMER APPROVED SIGNATURES		



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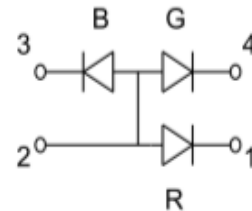
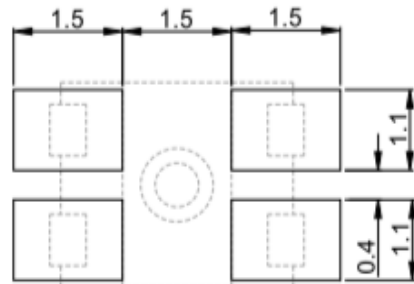


Package Dimensions



极性标识

Recommended Soldering Pattern



Note:

1. All dimensions are in mm
2. If no special instructions tolerance range ± 0.1 mm
3. Described in the technical data sheet are subject to change without notice.
4. The semiconductor device is static sensitive components, wear protective equipment pick up static electricity, all the machines, please do ground handling equipment.

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Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Red	Green	blue	Unit
Power Dissipation	P _D	110	110	110	mW
Continuous Forward Current	I _F	30	30	30	mA
Peak Forward Current*1	I _{FP}	100	100	100	mA
Reverse Voltage	V _R	5			V
Operating Temperature Range	Topr	-40°C To +85°C			
Storage Temperature Range	Tstg	-40°C To +85°C			

*1 : Peak Forward Current 1/10 Duty Cycle,0.1ms Pulse Width

Electrical Optical Characteristics at Ta=25°C

Parameter	Symbol	Min	Typ	Max	Unit	Condition	
Forward Voltage	VF	R	1.9	2.1	2.2	V	IF=20mA
		G	3.0	3.2	3.5		
		B	2.8	3.1	3.2		
Luminous Intensity	IV	R	270	---	320	mcd	IF=20mA
		G	700	---	860		
		B	300	---	360		
Dominant Wavelength	λd	R	621	---	624	nm	IF=20mA
		G	521	---	524		
		B	469	---	472		
Reverse Current	IR	/	/	10	μA	VR=5V	
Viewing Angle	2θ1/2	/	120	/	deg	IF=20mA	

Note.

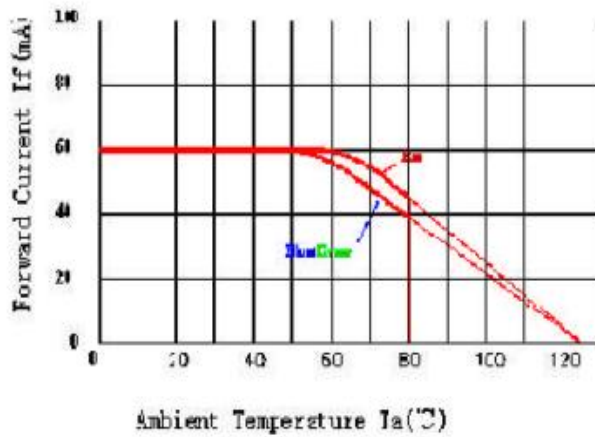
1. 2θ1/2 is the off axis angle from lamp centerline where the luminous intensity is 1/2 of the peak value.
2. View angle tolerance is ± 10

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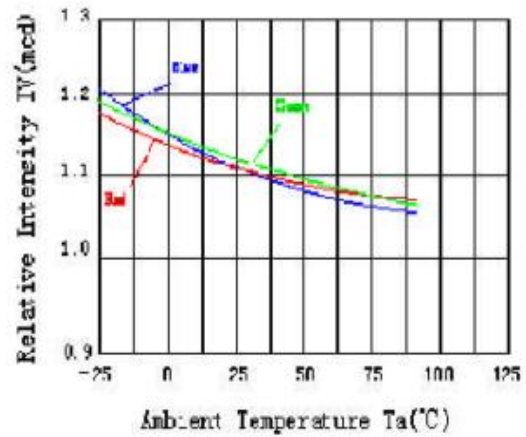


Typical Electro-Optical Characteristics Curves

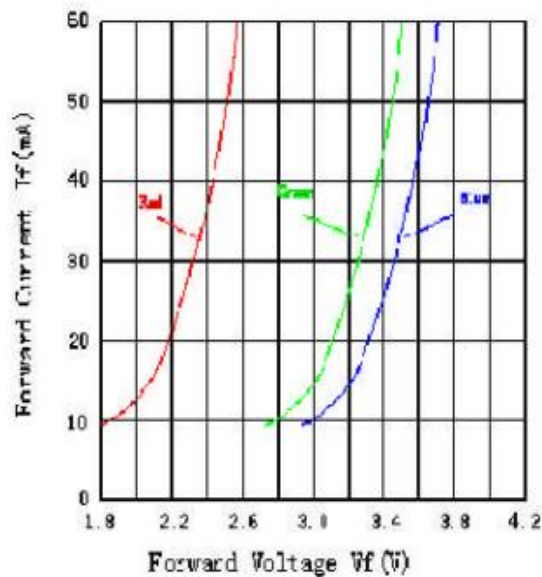
Forward Current vs. Ambient Temperature



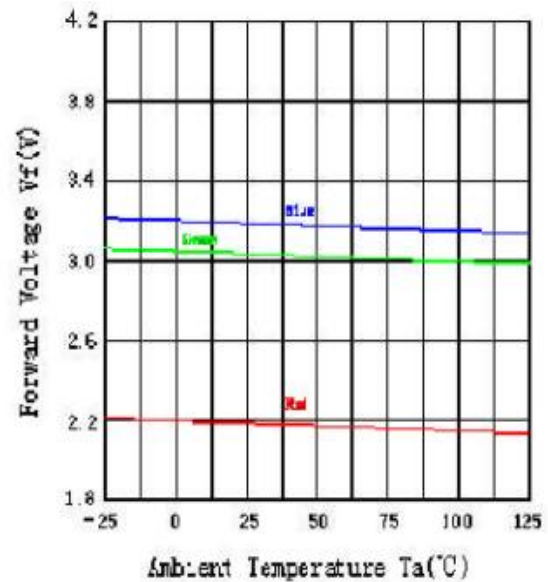
Relative Intensity vs. Ambient Temperature

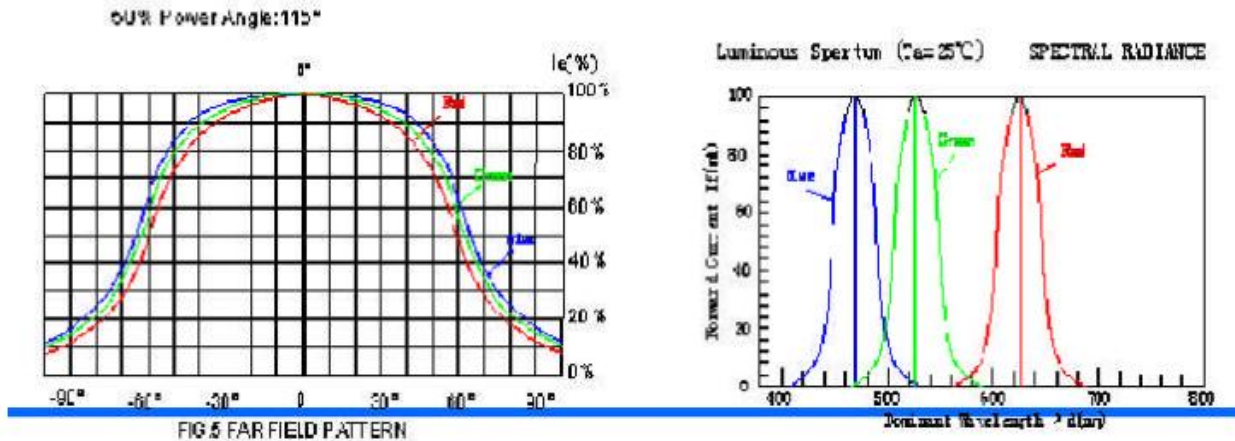


Forward Current vs. Forward Voltage



Forward Voltage vs. Ambient Temperature





Caution:

1. Cleaning

Cleaning methods do not use an unknown chemical liquid cleaning products: unknown liquid-chemicals may damage the product. When cleaning is necessary, the product immersed in alcohol, in normal room temperature of less than 1 minute and air dry for 15 minutes, then get started.

2. Moisture proof packaging

Anti-humidity packaging products in order to avoid transportation and storage of moisture in the product packaging is packed with moisture-proof aluminum bags, and which contains desiccant bags, desiccant bags packed the main play control of the humidity.

3. Storage

A. sealed bags stored in conditions of temperature $<40\text{ }^{\circ}\text{C}$, humidity $<90\%$ RH, storage period of 12 months. When more than shelf life, the need to re-baking dehumidification.

B. Before the open packaging, check whether the bags leak, if there is leakage phenomenon, re-baked before use.

C. After opening, please use the following conditions: temperature $<30\text{ }^{\circ}\text{C}$, humidity 60% RH below; If you use longer than 24 hours, subject to the following baking before use.

D. Curing conditions: oven at a temperature of products in the $70\text{ }^{\circ}\text{C} \pm 5\text{ }^{\circ}\text{C}$; relative humidity $\leq 10\%$ RH, time: 24 hours. E. out from the bag and baked products. In the baking process can not open the oven door.

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4. ESD&EOS

A. ESD electrostatic discharge and impact of current (ESD) or pulse current (EOS), may damage SMD LED.

B. Must wear a wrist strap, to wear anti-static shoes or gloves, can the SMD LED production.

C. All mechanical equipment must be grounded.

5. Heat treatment

SMD product heat treatment heat treatment in SMD circuit design, careful consideration, the current should reduce the specific reference to the appropriate specifications of each product's current book - the temperature corresponding to the curve.

6. Welding

Manual welding operations:

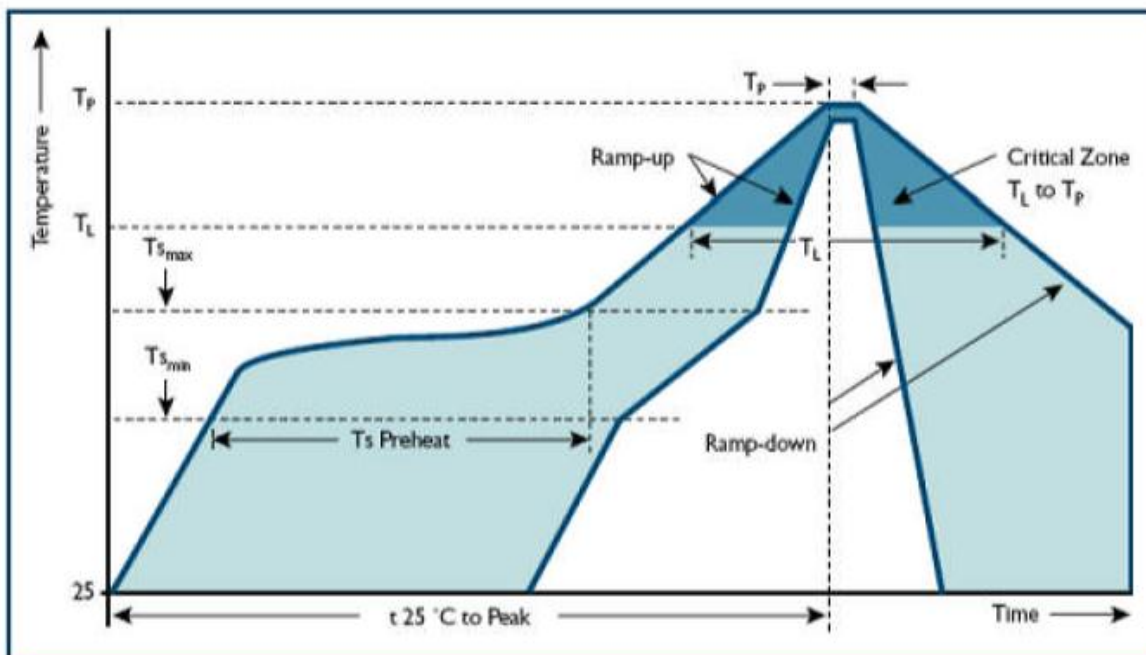
A. Use the soldering iron must be less than 25W, soldering iron temperature must be kept below 315 °C, soldering time must not exceed 2 seconds.

B. Iron can not come into contact with epoxy resin (silicone) section.

C. Once when welding, to let it cool down to temperatures below 40 °C can packaging.

Reflow soldering operation:

A. Reflow temperature profile had Refer to the following:





Solder: Lead solder	Solder: lead-free solder
The temperature rise slope T _{max} to TP = 4 °C / s maximum	The temperature rise slope T _{max} to TP = 4 °C / s maximum
Preheating temperature T _{min} = 100 °C ~ 150 °C	Preheating temperature T _{min} = 150 °C ~ 200 °C
Preheating time T _{min} to T _{max} = 100s maximum	Preheating time T _{min} to T _{max} = 100s max.
Ramp-down rate 6 °C / s maximum	Ramp-down rate 6 °C / s maximum
Peak temperature TP = 230 °C maximum	Peak temperature TP = 250 °C maximum
At the time of peak temperature must not exceed ± 5 °C 10s	At the time of peak temperature must not exceed ± 5 °C 10s
More than 183 °C temperature could not exceed 80s.	More than 217 °C of temperature for longer than 80s.

B. Do not weld the welding surface after modification, so if you want to modify the product must not harm the premise.

C. reflow should be done at a time, not min repeated.

D. In the welding, the circuit board packaging can not be immediately, to let it cool before packaging.

LED Lamp Reliability test standard

Type	Test Item	REF. Standard	Test conditions		Note	Number of Damaged
			Binary / Trinary Chip	Quaternary Chip		
Environments Sequence	Temperature Cycle	JIS C7021 (1977)A4	-20°C~25°C~80°C~25°C 30min,5min,30min,5min	-40°C~25°C~100°C~25°C 30min,5min,30min,5min	100 cycles	0/100
	Thermal shock	MIL-STD-202G	-20°C~80°C 30min, 30min	-40°C~100°C 30min, 30min	100 cycles	0/100
	High Temperature Storage(*)	JIS C7021 (1977)B10	Ta=80°C	Ta=100°C	1000Hrs	0/100
	Low Temperature Storage	JIS C7021 (1977)B12	Ta=-30°C	Ta=-40°C	1000Hrs	0/100
Operation Sequence	Life test	JIS C7035 (1985)	Ta=25°C If=25mA	Ta=25°C If=25mA	1000Hrs	0/100
	High humidity Heat life test	-----	60°C RH=90% If=20mA	60°C RH=90% If=20mA	500Hrs	0/100
	Low temperature Life test	-----	Ta=-20°C If=20mA	Ta=-30°C If=20mA	1000Hrs	0/100

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REVISION:					
Destructive Sequence	Resistance to solderingHeat	JIS C7021 (1977)A11	Tsol=260±5°C ,10sec. (3mm from the base of the epoxy bulb)	1 time	0/20
	Solder ability	JIS C7021 (1977)A2	Tsol=235±5°C ,5sec. (using flux)	1 time (over95%)	0/20
	Lead Pull/Bend Test	JIS C7021 (1977)A11	Load 2.5N(0.25kgf) 0°C~90°C~0°C;Bend 3times	3 time	0/10
ESD Test	ESD TEST	AEC (Q101002)	Human body model 1000v	-----	0/10

Items marked with * are selective.

Failure Criteria

Item	Symboi	Test Condition	Criteria for Judgment	
			min	Max
Forward Voltage	VF	IF = 20 mA	-----	Initial Data x 1.1
Reverse Current	IR	VR = 5 V	-----	100 A
Luminous Flux/Intensity	/IV	IF = 20 mA	Initial Data x 0.7 (Total degradation) Initial Data x 0.5 (Single lamp degradation)	-----

