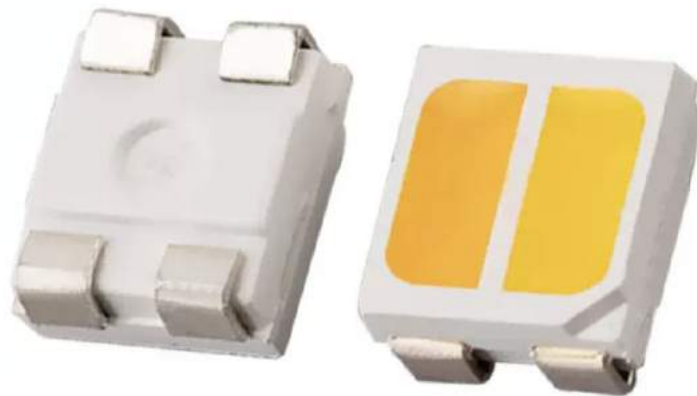


SPC No.	Version	Issue Date	Approval	Making
230420005	C	2023-4-19	Mr Chiang	Ms Lee

Model:GESMD3528VW CRI90+

Dual white led Datasheet



Features :

- High Luminous Intensity
- Based on Blue : InGaN technology
- Wide viewing angle : 120°
- Excellent performance and visibility
- Suitable for all SMT assembly methods
- IR reflow process compatible
- Environmental friendly; RoHS compliance

Typical Applications :

- Signal and Symbol Luminaire
- Indoor and Outdoor Displays
- Backlighting (illuminated advertising, general lighting)
- Interior Automotive Lighting

Absolute Maximum Ratings

Absolute maximum ratings ($T_a=25^{\circ}\text{C}$)

Parameter	Symbol	Value	Units
DC Forward Current	I_F	2*20	mA
Pulse Forward Current ($t_p \leq 100\mu\text{s}$, Duty cycle=0.25)	I_{pulse}	2*30	mA
Reverse Voltage	V_R	5	V
LED Junction Temperature	T_J	115	$^{\circ}\text{C}$
Operating Temperature	-	-40 ~ +85	$^{\circ}\text{C}$
Storage Temperature	-	-40 ~ +125	$^{\circ}\text{C}$
ESD Sensitivity (HBM)	V_B	2,000	V
Soldering Temperature	T_s	Reflow Soldering : 255~260 $^{\circ}\text{C}/10\text{sec}$ Manual Soldering : 350 $^{\circ}\text{C}/3\text{sec}$	

Notes:

- The values are based on 1-die performance.
- * I_{FP} condition: pulse width $\leq 0.1\text{msec}$ and duty $\leq 1/10$.

Electronic optical Parameters

ITEM	SYMBOL	TEST CONDITIONS	UNIT	MIN.	TYP.	MAX.	
Forward Voltage	V_f	$I_f=2*20\text{ mA}$	V	2.8	3.0	3.4	
Reverse Current	I_r	$V_r=5\text{V}$	μA	-	-	5	
Viewing Angle	2θ	1/2	deg	-	120	-	
Color Rendering Index(*1)	CRI	$I_f=2*20\text{ mA}$	-	90	-	-	
Color temperature	CCT	$I_f=2*20\text{ mA}$	K	2600	2700	2800	
				6000	6500	7000	
Junction/Solder 1 chips on (*2)	$R_{\theta j-c}$	$I_f=2*20\text{ mA}$	$^{\circ}\text{C}/\text{W}$	-	-	4	
Luminous Intensity (*3)	WW	I_v	$I_f=2*20\text{ mA}$	mcd	2000	-	2200
	CW				2200	-	2400
Luminous Flux(*4)	WW	Φ_v	$I_f=2*20\text{ mA}$	lm	6.0	-	6.5
	CW				6.5	-	7.0

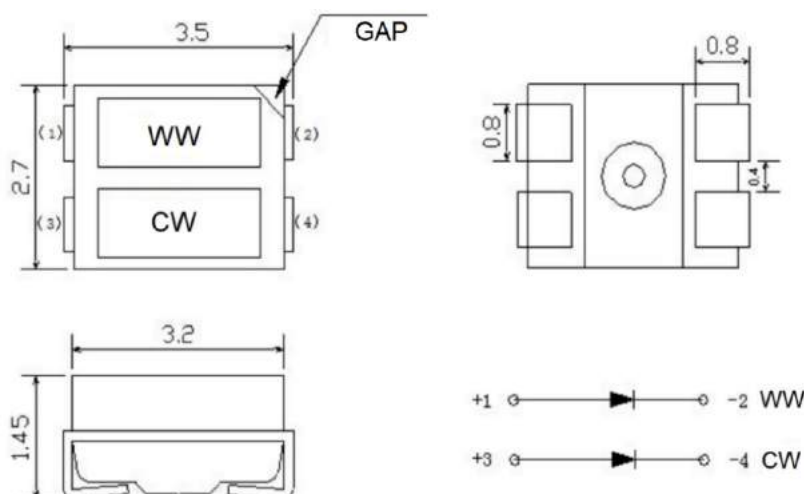
*1: Measurement tolerance of the Color Rendering Index: ± 2

*2: Rth test condition: Mounted on PC Board FR 4 (pad size $\geq 16\text{mm}^2$)

*3: Measurement tolerance of the luminous intensity: $\pm 10\%$. This value for reference only.

*4: Measurement tolerance of the luminous flux: $\pm 10\%$.

Mechanical Dimensions

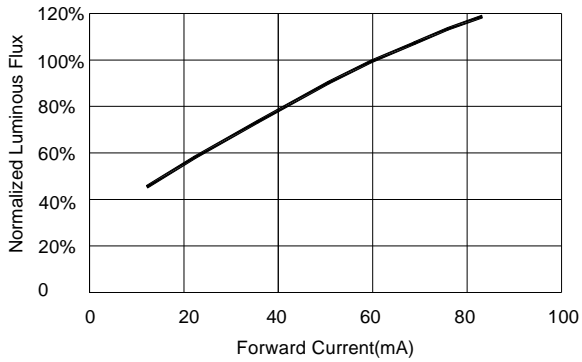


Notes:

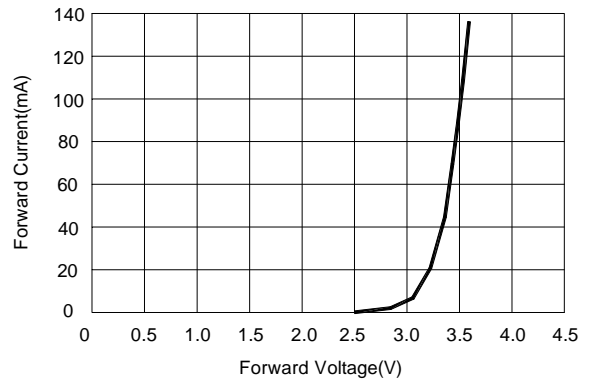
- All dimensions are measured in mm.
- Tolerance : $\pm 0.2\text{ mm}$

Characteristic Curve

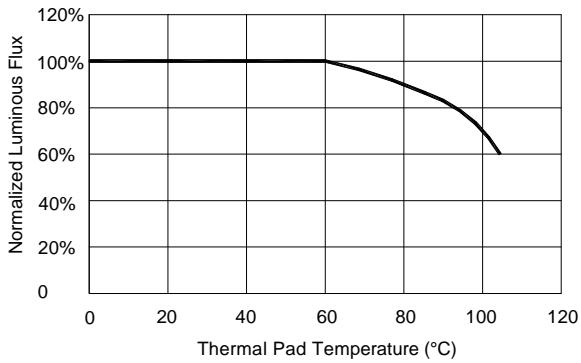
Forward Current vs. Typical Relative Luminous Flux



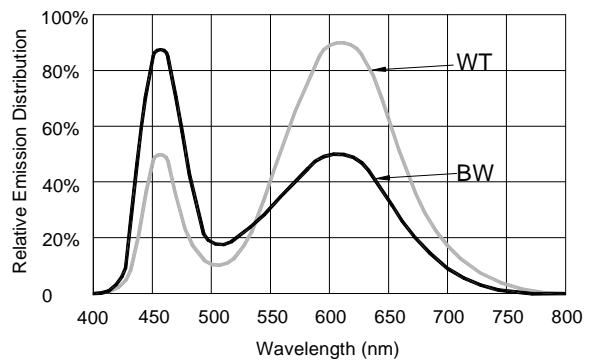
Forward Voltage vs. Forward Current



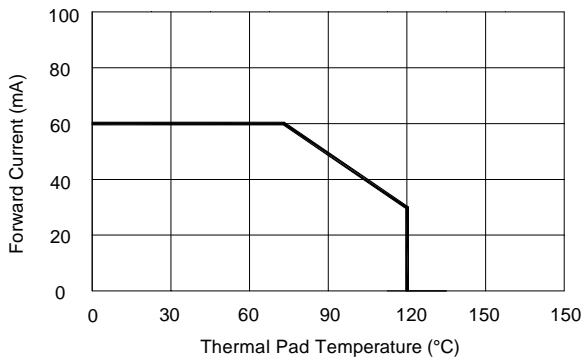
Thermal Pad Temperature vs. Relative Light Output



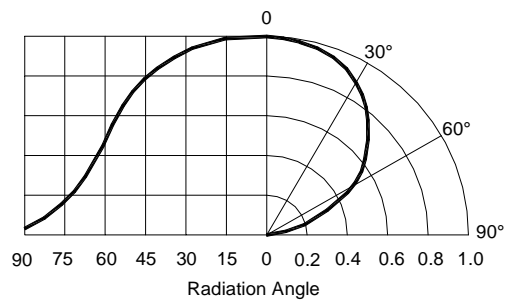
Wavelength Characteristics



Thermal Pad Temperature vs. Forward Current

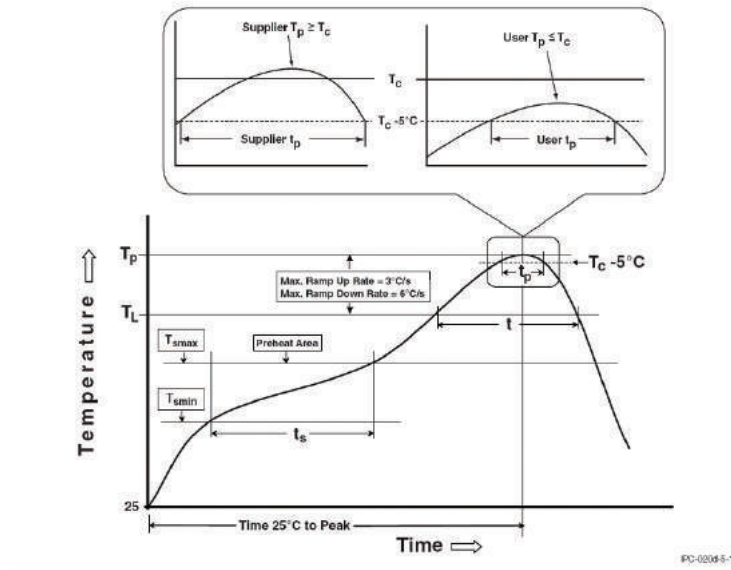


Typical Radiation Pattern 120°



Reflow Profile

The following reflow profile is from IPC/JEDEC J-STD-020D which provided here for reference.



Reflow Profiles

Classification Reflow Profiles

Profile Feature	Pb-Free Assembly
Preheat & Soak	150 °C
Temperature min (Tsmn)	200 °C
Temperature max (Tsmx)	60-120 seconds
Time (Tsmn to Tsmx) (ts)	
Average ramp-up rate (Tsmx to Tp)	3 °C/second max.
Liquidous temperature (TL)	217 °C
Time at liquidous (tl)	60-150 seconds
Peak package body temperature (Tp)*	255 °C ~260 °C *
Classification temperature (Tc)	260 °C
Time (tp)** within 5 °C of the specified classification temperature (Tc)	30** seconds
Average ramp-down rate (Tp to Tsmx)	6°C/second max.
Time 25°C to peak temperature	8 minutes max.

Notes:

- * Tolerance for peak profile temperature (Tp) is defined as a supplier minimum and a user maximum.
- ** Tolerance for time at peak profile temperature (tp) is defined as a supplier minimum and a user maximum.

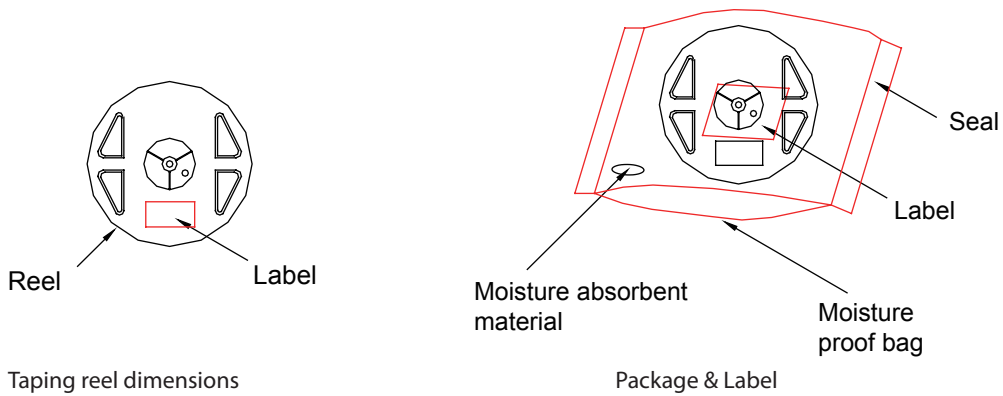
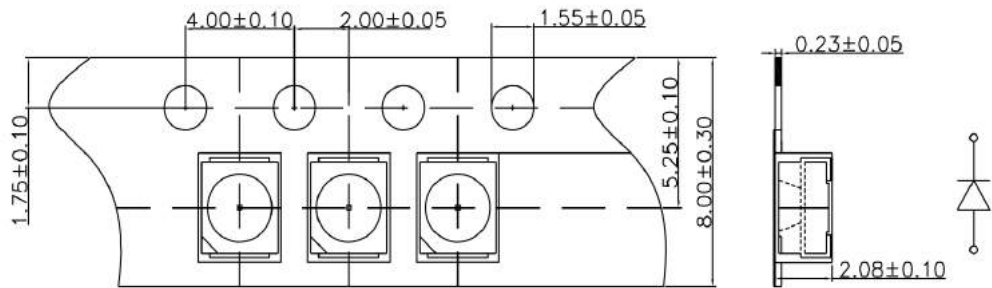
Reliability

NO .	Test Item	Test Condition	Remark
1	Temperature Cycle	-40°C~100°C 30, 30, mins	100 Cycle
2	Thermal Shock	-40°C~100°C 15, 15 mins ≤ 10 sec	100 Cycle
3	Resistance to Soldering Heat	T _{SOL} =260°C, 30 sec	3 times
4	Moisture Resistance	25°C~65°C 90% RH 24 hrs / 1 cycle	10 Cycle
5	High-Temperature Storage	T _A =100°C	1,000 hrs
6	Humidity Heat Storage	T _A =85°C RH=85%	1,000 hrs
7	Low-Temperature Storage	T _A =-40°C	1,000 hrs
8	Operation Life test	25°C	1,000 hrs
9	High Temperature Operation Life test	85°C	1,000 hrs
10	High Humidity Heat Life Test	85°C, 85%RH	1,000 hrs
11	ON/OFF Test	30 sec ON, 30 sec OFF	1.5W times

Failure Criteria

Item	Criteria for Judgment	
	Min.	Max.
Lumen Maintenance	85%	-
$\Delta u'v'$	-	0.006
Forward Voltage	-	Initial Data x 1.1
Reverse Current	-	10 μ A
Resistance to Soldering Heat	No dead lamps or visual damage	

Product Packaging Information



Model	Package	Emitting Color	QTY/Reel	Reel/CTN
GESMD3528VW	SMD3528 2IN1	WW+CW	1k/Reel	50Reel/CTN

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