



**THE DATASHEET OF
SC23-12SRWA**



ELECTRICAL / OPTICAL CHARACTERISTICS at T_A=25°C

Parameter	Symbol	Emitting Color	Value		Unit
			Typ.	Max.	
Wavelength at Peak Emission I _F = 10mA	λ_{peak}	Super Bright Red	655	-	nm
Dominant Wavelength I _F = 10mA	λ_{dom} ^[1]	Super Bright Red	640	-	nm
Spectral Bandwidth at 50% Φ REL MAX I _F = 10mA	$\Delta\lambda$	Super Bright Red	20	-	nm
Capacitance	C	Super Bright Red	45	-	pF
Forward Voltage I _F = 10mA (Segment) Forward Voltage I _F = 10mA (DP)	V _F ^[2]	Super Bright Red	7.2 3.6	9.2 4.6	V
Reverse Current (V _R = 5V) (Per chip)	I _R	Super Bright Red	-	10	μ A

Notes:

1. The dominant wavelength (λ_d) above is the setup value of the sorting machine. (Tolerance λ_d : $\pm 1\text{nm}$.)
2. Forward voltage: $\pm 0.1\text{V}$.
3. Wavelength value is traceable to CIE127-2007 standards.
4. Excess driving current and / or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.

ABSOLUTE MAXIMUM RATINGS at T_A=25°C

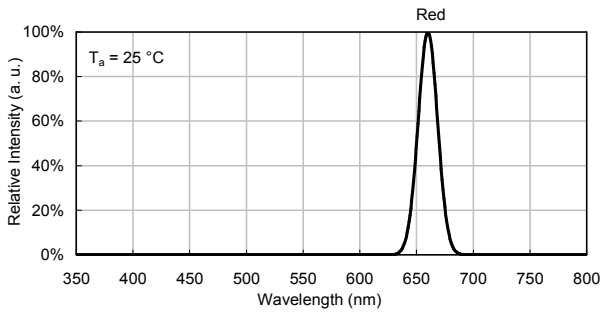
Parameter	Symbol	Value	Unit
Power Dissipation (Per chip)	P _D	75	mW
Reverse Voltage (Per chip)	V _R	5	V
Junction Temperature	T _j	115	°C
Operating Temperature	T _{op}	-40 to +85	°C
Storage Temperature	T _{stg}	-40 to +85	°C
DC Forward Current (Segment) DC Forward Current (DP)	I _F	30 30	mA
Peak Forward Current (Segment) Peak Forward Current (DP)	I _{FM} ^[1]	155 155	mA
Electrostatic Discharge Threshold (HBM)	-	3000	V
Lead Solder Temperature ^[2]		260°C For 3-5 Seconds	

Notes:

1. 1/10 Duty Cycle, 0.1ms Pulse Width.
2. 2mm below package base.
3. Relative humidity levels maintained between 40% and 60% in production area are recommended to avoid the build-up of static electricity – Ref JEDEC/JESD625-A and JEDEC/J-STD-033.

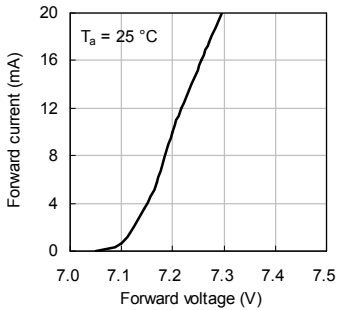
TECHNICAL DATA

RELATIVE INTENSITY vs. WAVELENGTH

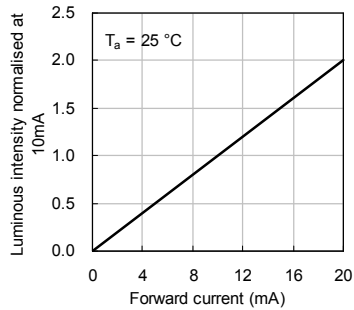


SUPER BRIGHT RED (SEGMENT)

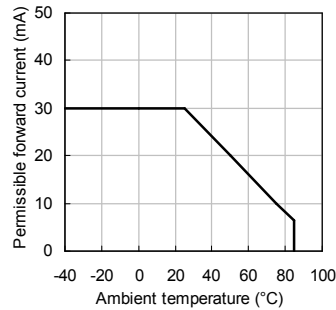
Forward Current vs. Forward Voltage



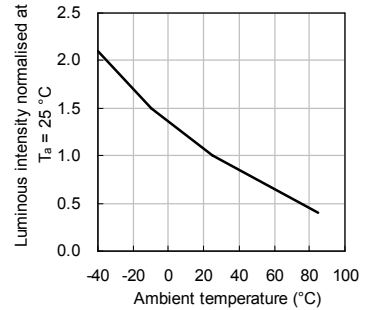
Luminous Intensity vs. Forward Current



Forward Current Derating Curve

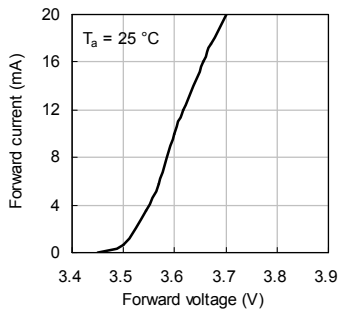


Luminous Intensity vs. Ambient Temperature

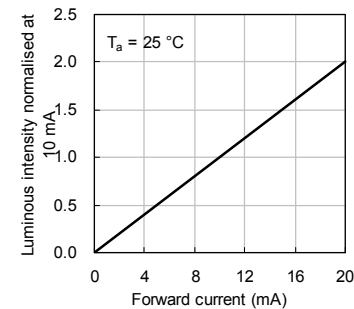


SUPER BRIGHT RED (DP)

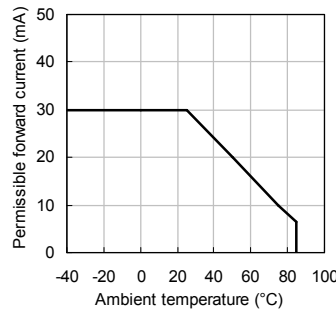
Forward Current vs. Forward Voltage



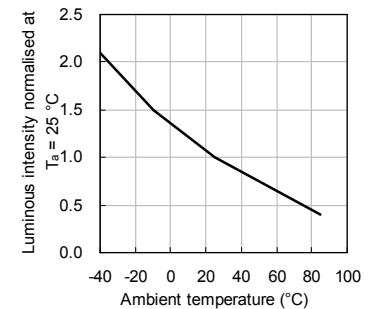
Luminous Intensity vs. Forward Current



Forward Current Derating Curve

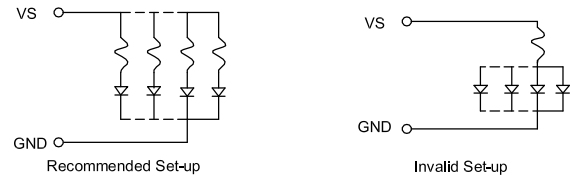


Luminous Intensity vs. Ambient Temperature



CIRCUIT DESIGN NOTES

1. Protective current-limiting resistors may be necessary to operate the LEDs within the specified range.
2. LEDs mounted in parallel should each be placed in series with its own current-limiting resistor. (Fig.3)
3. The driving circuit should be designed to protect the LED against reverse voltages and transient voltage spikes when the circuit is powered up or shut down.
4. The safe operating current should be chosen after considering the maximum ambient temperature of the operating environment.
5. Prolonged reverse bias should be avoided, as it could cause metal migration, leading to an increase in leakage current or causing a short circuit.



(Fig.3)

PRECAUTIONARY NOTES

1. The information included in this document reflects representative usage scenarios and is intended for technical reference only.
2. The part number, type, and specifications mentioned in this document are subject to future change and improvement without notice. Before production usage customer should refer to the latest datasheet for the updated specifications.
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