



Working Together for a Greener Society

Future of Power Electronics and the Earth

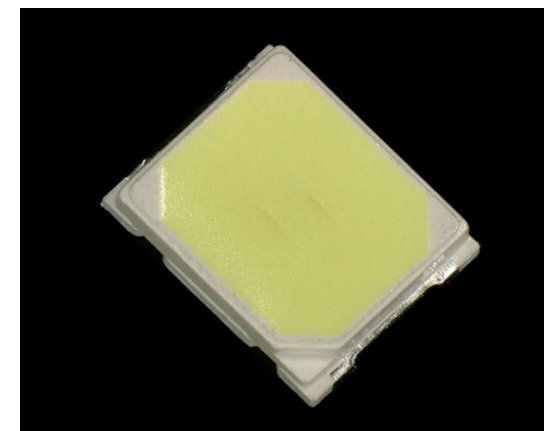


For In-vehicle Blackout Panel Displays

Ultra-high Brightness LEDs

2835 Flat LED Series

SEP1WC1L19DTA



■ Features

- Automotive-grade Qualified
- Thermally Enhanced Surface-mount Package
- Luminous Intensity, $I_v = 3500$ mcd (Typ.) ($I_F = 30$ mA)
- ESD-protection Zener Diode Included
- Higher Efficiency as No Light-scattering Sheet or Lens Embossing Required

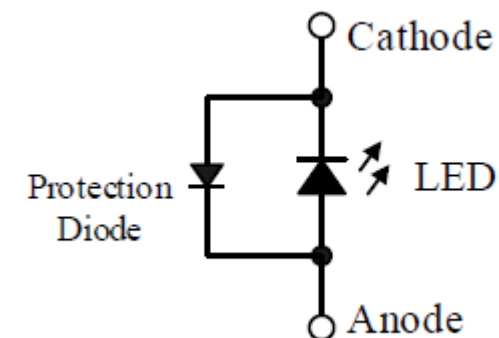
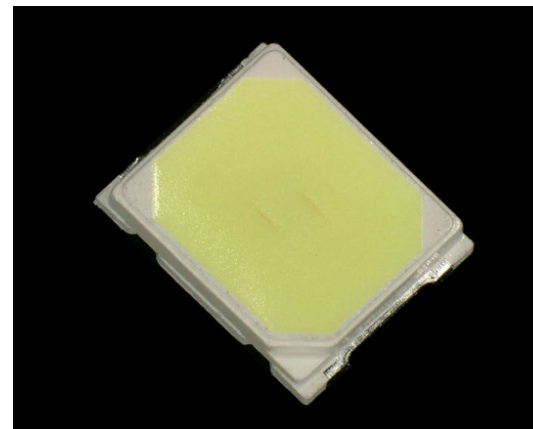
■ Applications

For light sources for in-vehicle lighting applications such as:

- Blackout Panel Displays with Low Light Transmission
- Room Lights and Map Lights
- Footlights and Other Lighting Equipment

■ Package

- Standard Size for Automotive: 2.8 mm × 3.5 mm × 0.7 mm



Nearly 1.6 Times Brighter than Conventional

- Uses high heat-resistant/light-resistant materials for the reflector resins
- Uses high heat-resistant chip



Results in better temp. derating factors and operation at a higher current

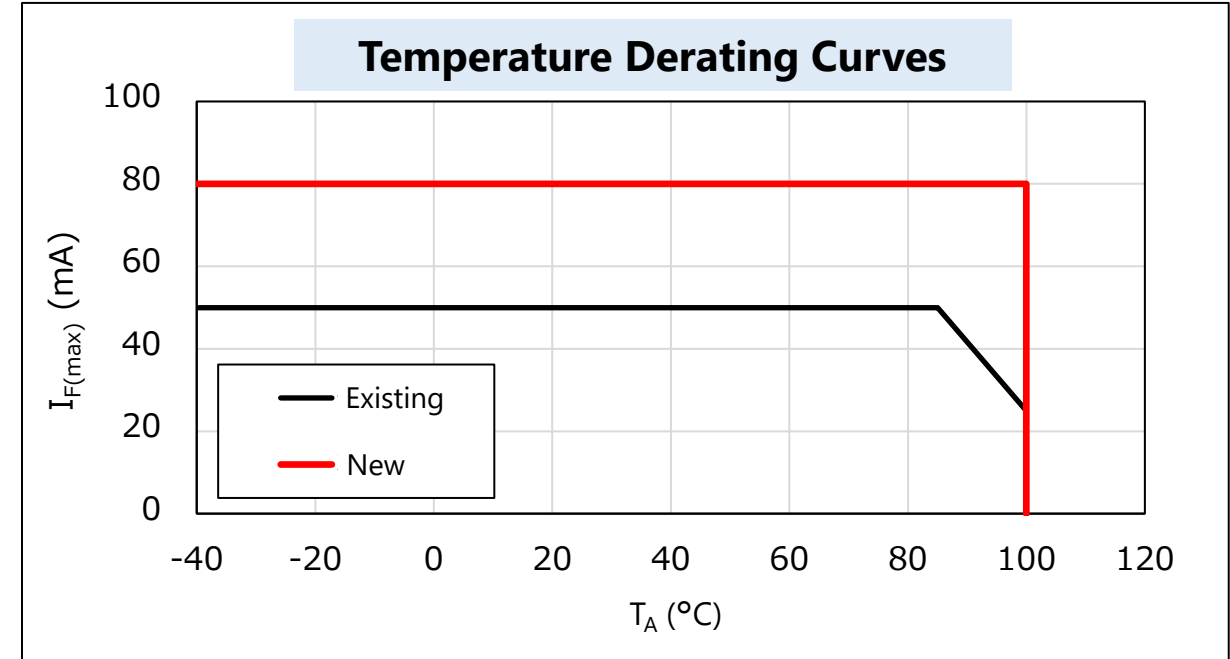


Our new device emits nearly 1.6 times brighter* and yields a greater luminous efficacy at the same current.

* Luminous intensity, $I_v = 3500$ mcd (typ.) ($I_F = 30$ mA)

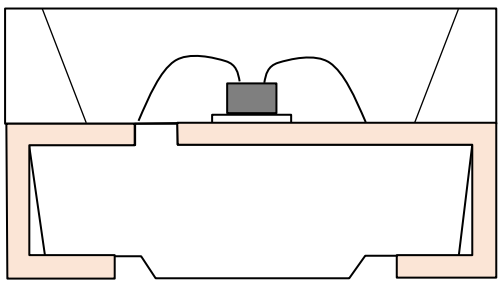
What is more, our new device uses:

- High-reflective Ag plating to increase luminous intensity
- Silicone encapsulation resin to prevent Ag sulfuration



The package heat dissipation is enhanced by the new structure that transfers chip-generated heat directly under the chip.

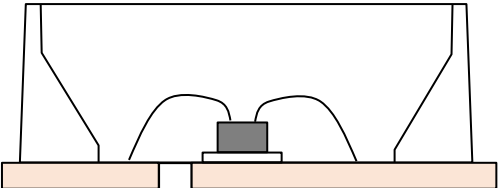
SEP1xx14 Series (Exg. Structure)



Thermal Resistance, $\theta_{(J-S)} = 100 \text{ }^\circ\text{C/W}$

Longer heat dissipation paths;
decreased heat dissipation

SEP1WC1L19DTA (New Structure)



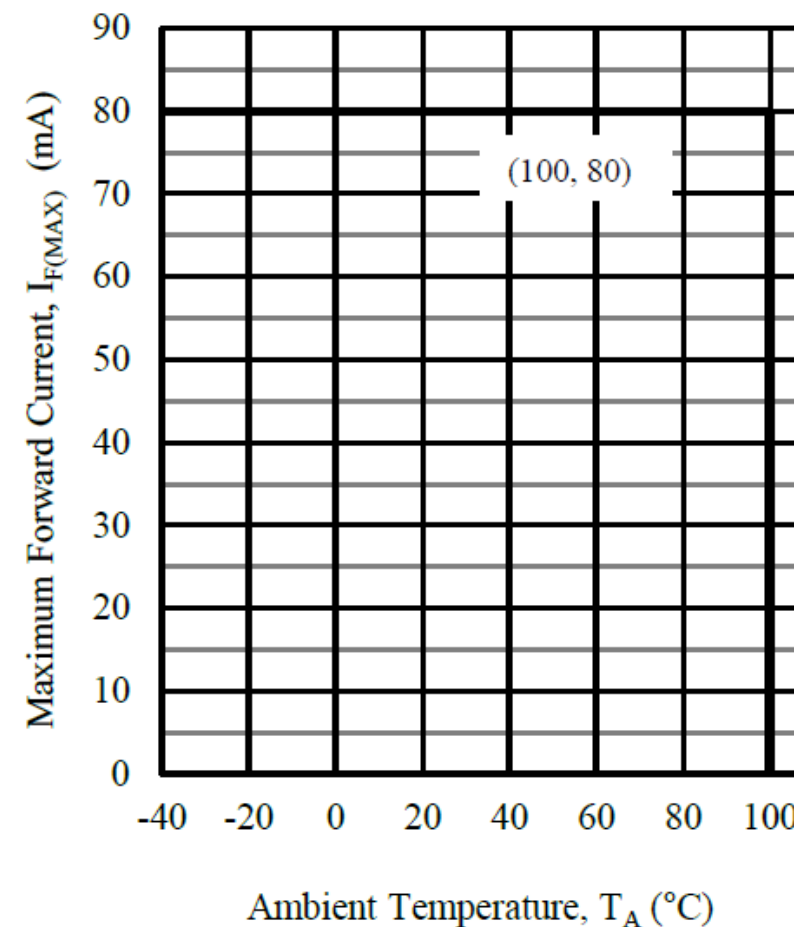
✓ Thermal Resistance, $\theta_{(J-S)} = 25 \text{ }^\circ\text{C/W}$

✓ Shorter heat dissipation paths;
increased heat dissipation

■ Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit	Remarks
Power Dissipation	P_D	280	mW	
Forward Current	I_F	80	mA	
Pulse Forward Current	I_{FP}	100	mA	Frequency = 1 kHz Pulse width $\leq 100 \mu s$
Operating Temperature	T_{OP}	-40 to 100	$^{\circ}C$	
Storage Temperature	T_{STG}	-40 to 100	$^{\circ}C$	

■ Temperature Derating Curve



■ Electrical / Optical Characteristics

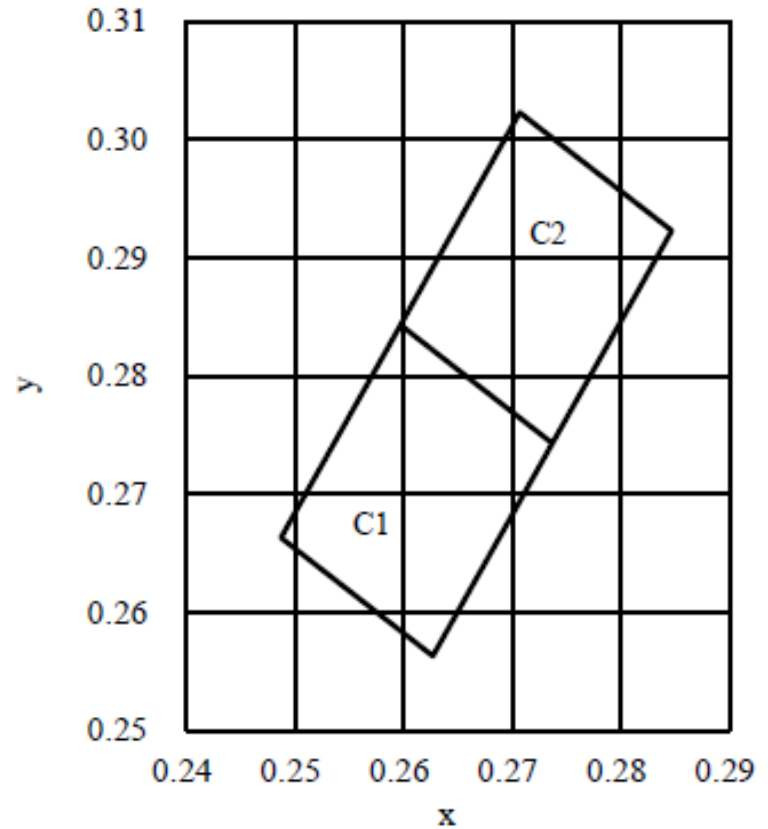
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	$I_F = 30 \text{ mA}$	2.4	2.9	3.5	V
Reverse Voltage	V_R	$I_R = 1 \text{ mA}$		0.8		V
Luminous Intensity	I_V	$I_F = 30 \text{ mA}$	3150	3500	3850	mcd
Chromaticity	x	$I_F = 30 \text{ mA}$		0.2667		-
	y			0.2793		

■ Luminous Intensity Bins

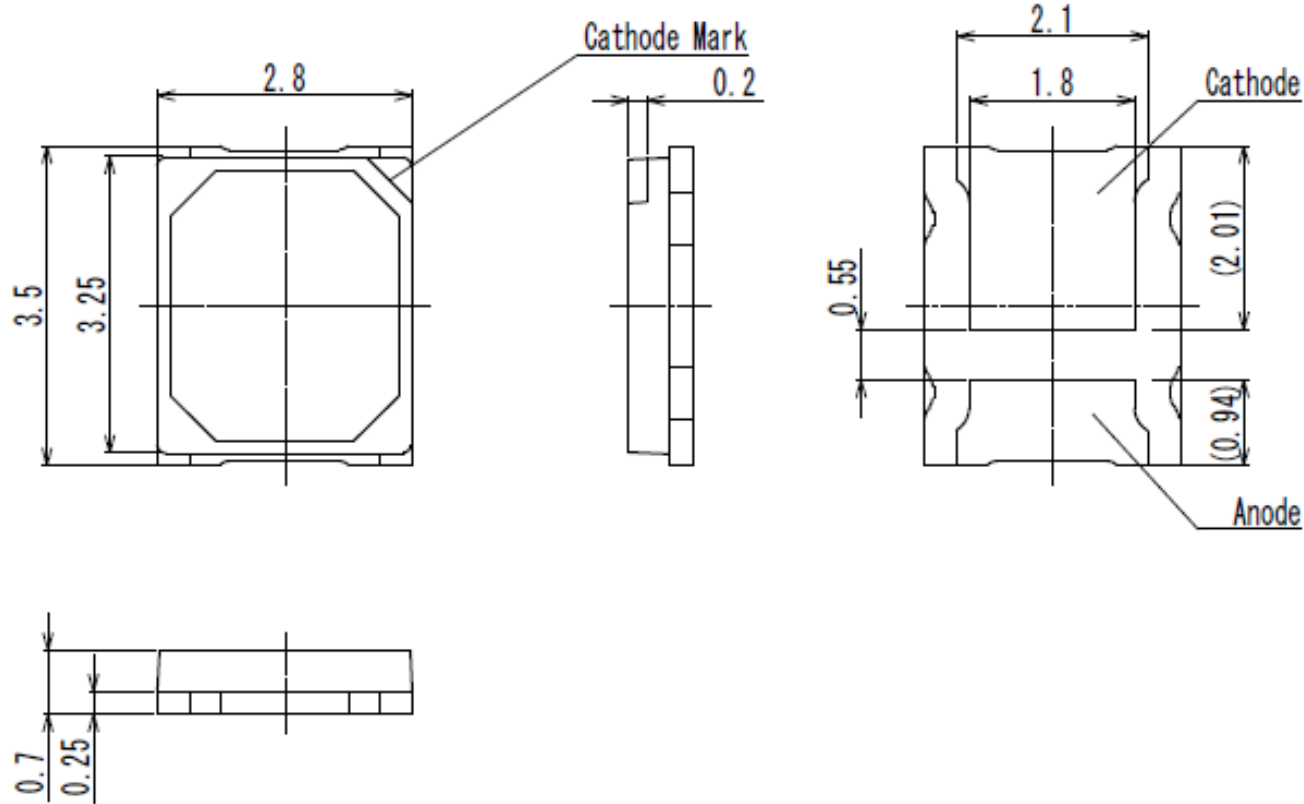
Bin No.	Luminous Intensity Range	Unit
C	3150 to 3500	mcd
D	3500 to 3850	mcd

■ Chromaticity Bins

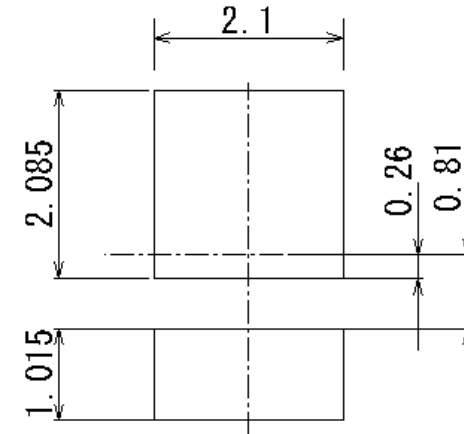
Bin No.	x	y
C1	0.2487	0.2663
	0.2597	0.2843
	0.2737	0.2743
	0.2627	0.2563
C2	0.2597	0.2843
	0.2707	0.3023
	0.2847	0.2923
	0.2737	0.2743



■ Surface Mount: 2.8 mm × 3.5 mm × 0.7 mm



■ Land Pattern Example



Unit: mm

NOTES:

- Dimensions in millimeters
- Tolerance: ± 0.2 mm
- All the values in parentheses are reference dimensions.
- Pb-free (RoHS compliant)
- MSL 3 (Moisture Sensitivity Level 3)

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