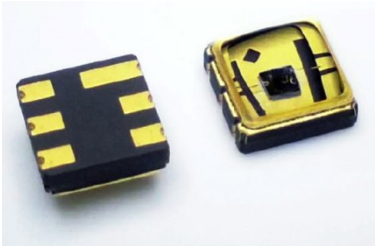
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DUV-SML



- **Deep Ultraviolet Light Emission Source**
- **280, 310, 325, 340 nm**
- **Ceramic 3838 SMD package**
- **Resin dome lens**
- **Beam angle 142 deg.**

RoHS COMPLIANT Pb Pb-Free

Description

DUV-SML is a series of **AlGaN** based single emitter DEEP-UV LEDs in a ceramic 3838 SMD package, and can be delivered on tape. It features a resin dome lens. **DUV-SML** is available from 280 nm up to 340 nm peak wavelength with an optical output power of typically 1.9 mW.

Maximum Rating (T_{CASE} = 25°C)

Parameter	Symbol	Values Min.	Values Max.	Unit
Forward Current *(T_A=25°C)*	I_F		40	mA
Operating Temperature	T_{OPR}	- 20	+ 80	°C
Storage Temperature	T_{STG}	- 30	+ 85	°C
Soldering Temperature (max. 5s)	T_{SOL}		+ 260	°C

Electro-Optical Characteristics (T_{CASE} = 25°C, I_F =20 mA)

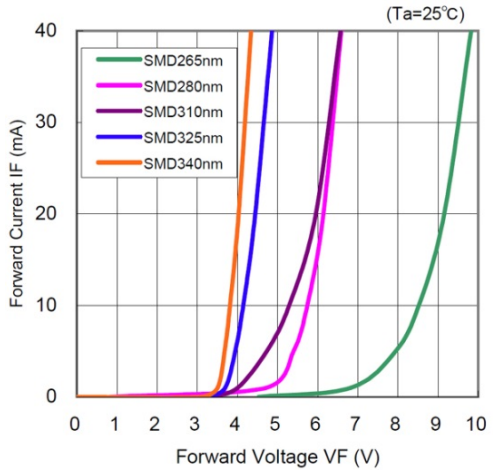
Parameter	Symbol	DUV280 -SML	DUV310 -SML	DUV325 -SML	DUV340 -SML	Unit
Peak Wavelength	λ_P	280 ±5	310 ±5	325 ±5	340 ±5	nm
Radiated Power	P_O	**2.2**	**2.6**	**2.5**	**1.9**	**mW**
Spectral Width (FWHM)	$\Delta\lambda$	11	9	8	9	nm
Forward Voltage	V_F	7	6.5	5	4	V
Reverse Voltage (I_R=10µA)	V_R	>2	>10	>10	>10	V
Reverse Current (V_R=5V)	I_R	<200	<1	<1	<1	µA
Viewing Angle	$2\Theta_{1/2}$	**142**				**deg.**
Thermal resistance	$R\Theta_{J\text{-}REF}$	190				°C/W
Rise time*	t_R	/	16	20	12	ns
Fall time*	t_F	/	8	9	9	ns

** frequency=100kHz, duty cycle=1%, I_{FP}=200mA*

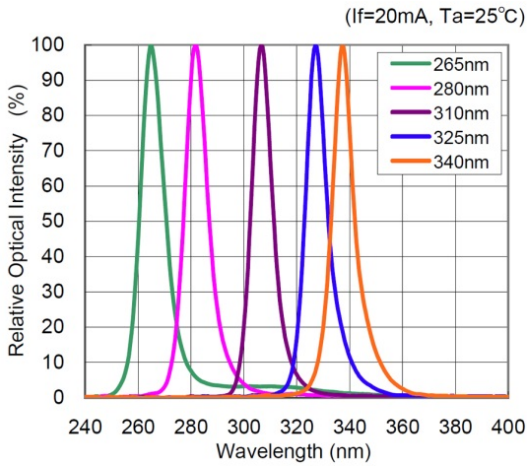
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Performance Characteristics

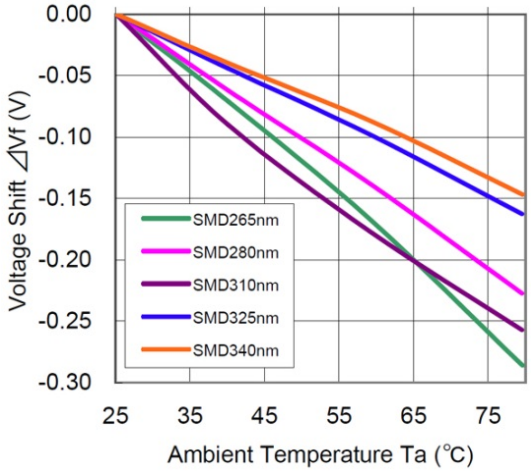
Forward Current vs. Forward Voltage



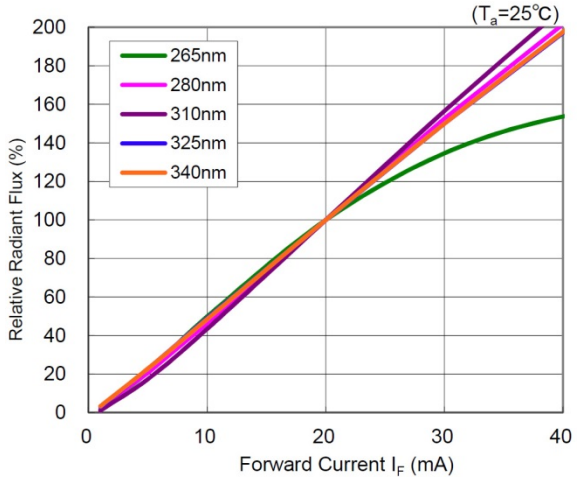
Spectrum



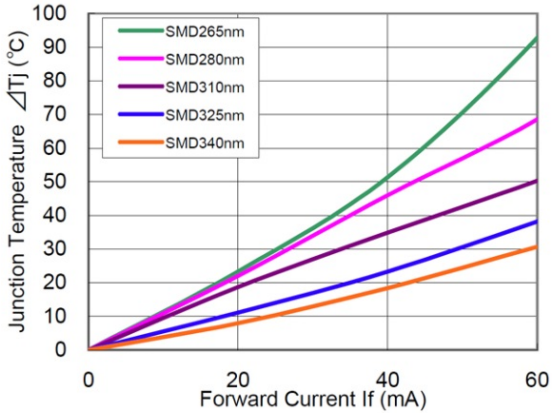
Voltage Shift vs. Ambient Temp.



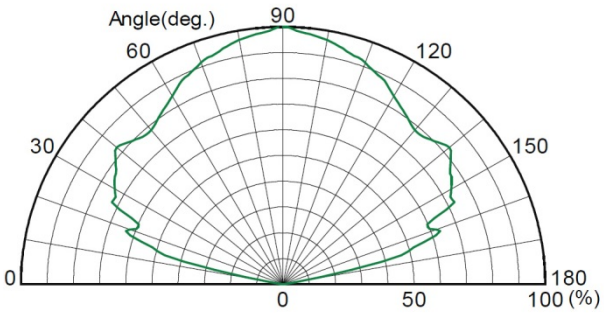
Forward Current vs. Relative Radiant Flux [%]



Junction Temp. vs. Forward Current



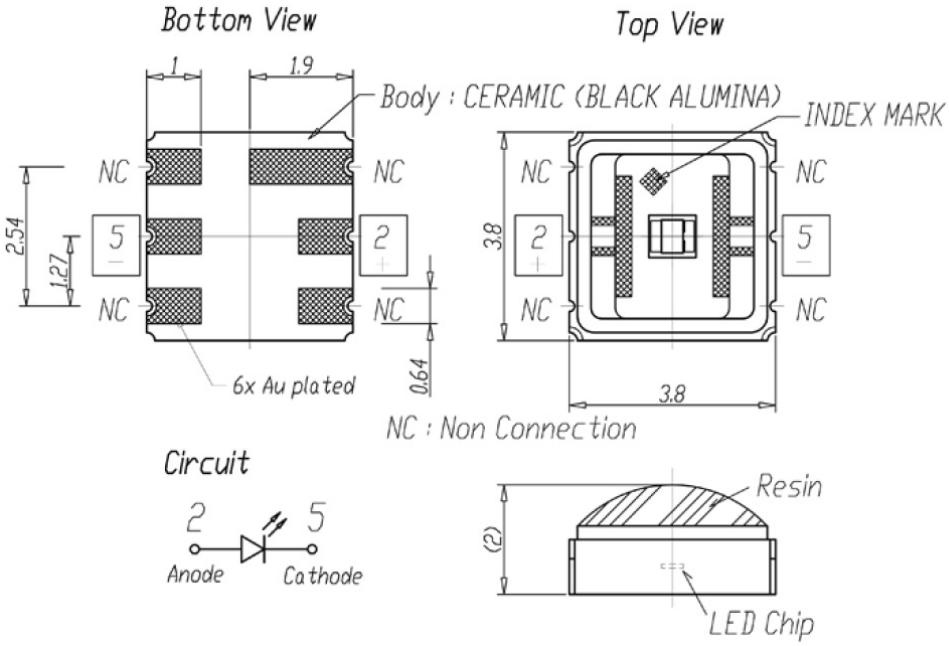
Radiation Pattern



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Outline Dimensions

SMD 3838



all dimensions in mm

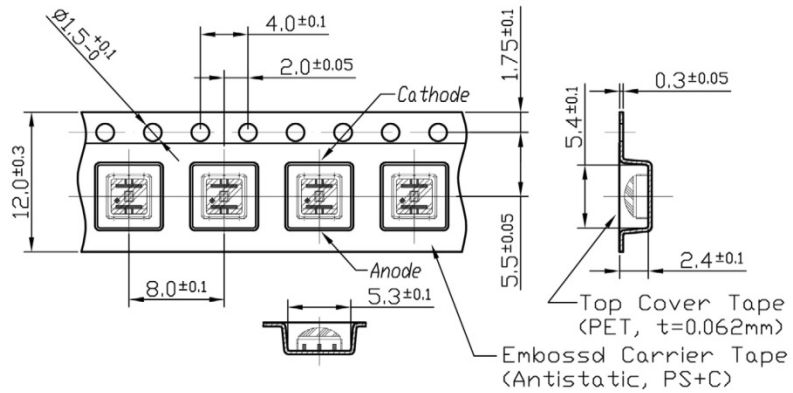
Device Materials

Pin #	Material
Package	Ceramic
Pads	Fe-Ni alloy, Au plating
Lens	Resin

Pb-Free RoHS COMPLIANT

Packaging

Taping Outline Dimensions



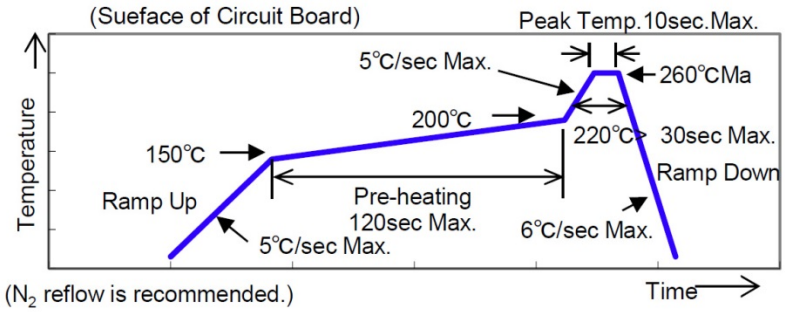
all dimensions in mm

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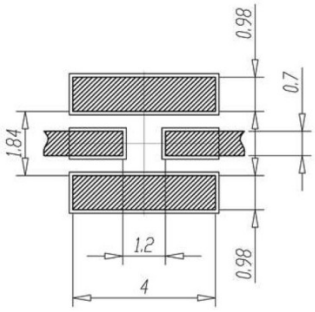
Precautions

Soldering:

Recommended soldering profile



Recommended solder pad layout



all dimensions in mm

Static Electricity:

LEDs are sensitive to electrostatic discharge (ESD). Precautions against ESD must be taken when handling or operating these LEDs. Surge voltage or electrostatic discharge can result in complete failure of the device.

UV-Radiation:

During operation these LEDs do emit **high intensity ultraviolet light**, which is hazardous to skin and eyes, and may cause cancer. Do avoid exposure to the emitted UV light. **Protective glasses are recommended**. It is further advised to attach a warning label on products/systems that do utilize UV-LEDs:

Class 1



Operation:

Do *only* operate LEDs with a current source.

Running these LEDs from a voltage source *will* result in complete failure of the device.

Current of a LED is an exponential function of the voltage across it. Usage of current regulated drive circuits is mandatory

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