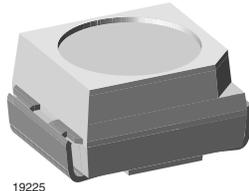


Low Current SMD LED PLCC-2



19225

DESCRIPTION

These new devices have been designed to meet the increasing demand for low current SMD LEDs.

The package of the VLMC310. is the PLCC-2 (equivalent to a size B tantalum capacitor).

It consists of a lead frame which is embedded in a white thermoplast. The reflector inside this package is filled up with clear epoxy.

PRODUCT GROUP AND PACKAGE DATA

- Product group: LED
- Package: SMD PLCC-2
- Product series: low current
- Angle of half intensity: $\pm 60^\circ$

FEATURES

- SMD LED with exceptional brightness
- Compatible with automatic placement equipment
- EIA and ICE standard package
- Compatible with infrared, vapor phase and wave solder processes according to CECC 00802 and J-STD-020C
- Available in 8 mm tape
- Low profile package
- Non-diffused lens: excellent for coupling to light pipes and backlighting
- Very low power consumption
- Luminous intensity ratio in one packaging unit $I_{Vmax}/I_{Vmin} \leq 2.0$
- Lead (Pb)-free device
- Preconditioning: according to Jedec level 2a
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



APPLICATIONS

- Automotive: backlighting in dashboards and switches
- Telecommunication: indicator and backlighting in telephone and fax
- Indicator and backlight for audio and video equipment
- Indicator and backlight for battery driven equipment
- Small indicator for outdoor applications
- Indicator and backlight in office equipment
- Flat backlight for LCDs, switches and symbols
- General use

PARTS TABLE

PART	COLOR, LUMINOUS INTENSITY	TECHNOLOGY
VLMC3100	Green, $I_V > 0.71$ mcd	GaP on GaP
VLMC3101	Green, $I_V > 1.12$ mcd	GaP on GaP



ABSOLUTE MAXIMUM RATINGS ¹⁾ VL310.				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage ²⁾		V_R	6	V
DC Forward current		I_F	7	mA
Surge forward current	$t_p \leq 10 \mu s$	I_{FSM}	0.5	A
Power dissipation		P_V	20	mW
Junction temperature		T_j	100	°C
Operating temperature range		T_{amb}	- 40 to + 100	°C
Storage temperature range		T_{stg}	- 40 to + 100	°C
Soldering temperature	$t \leq 5 s$	T_{sd}	260	°C
Thermal resistance junction/ambient	mounted on PC board (pad size > 16 mm ²)	R_{thJA}	500	K/W

Note:

¹⁾ $T_{amb} = 25 \text{ °C}$ unless otherwise specified

²⁾ Driving the LED in reverse direction is suitable for a short term application

OPTICAL AND ELECTRICAL CHARACTERISTICS ¹⁾ VL310., GREEN							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN	TYP.	MAX	UNIT
Luminous intensity ²⁾	$I_F = 2 \text{ mA}$	VL310	I_V	0.71	1.6		mcd
		VL3101	I_V	1.12	1.6		mcd
Dominant wavelength	$I_F = 2 \text{ mA}$		λ_d	562		575	nm
Peak wavelength	$I_F = 2 \text{ mA}$		λ_p		565		nm
Angle of half intensity	$I_F = 2 \text{ mA}$		ϕ		± 60		deg
Forward voltage	$I_F = 2 \text{ mA}$		V_F		1.9	2.4	V
Reverse voltage	$I_R = 10 \mu A$		V_R	6	15		V
Junction capacitance	$V_R = 0, f = 1 \text{ MHz}$		C_j		50		pF

Note:

¹⁾ $T_{amb} = 25 \text{ °C}$ unless otherwise specified

²⁾ in one Packing Unit $I_{Vmax}/I_{Vmin} \leq 2.0$

COLOR CLASSIFICATION		
GROUP	GREEN	
	DOM. WAVELENGTH (NM)	
	MIN.	MAX.
3	562	565
4	564	567
5	566	569
6	568	571
7	570	573
8	572	575

Note:

Wavelengths are tested at a current pulse duration of 25 ms and an accuracy of $\pm 1 \text{ nm}$.

LUMINOUS INTENSITY CLASSIFICATION				
GROUP	LIGHT INTENSITY (MCD)			
	STANDARD	OPTIONAL	MIN	MAX
E1	1		0.71	0.90
E2	2		0.90	1.12
F1	1		1.12	1.40

Note:

Luminous intensity is tested at a current pulse duration of 25 ms and an accuracy of $\pm 11 \%$.

The above Type Numbers represent the order groups which include only a few brightness groups. Only one group will be shipped on each reel (there will be no mixing of two groups on each reel). In order to ensure availability, single brightness groups will not be orderable.

In a similar manner for colors where wavelength groups are measured and binned, single wavelength groups will be shipped on any one reel.

In order to ensure availability, single wavelength groups will not be orderable.

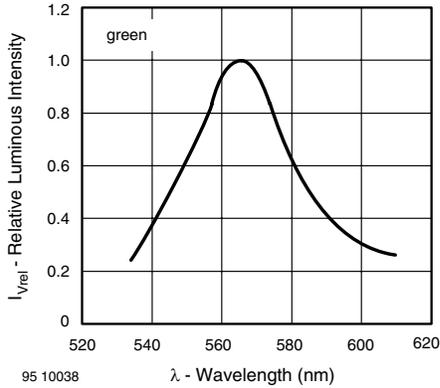
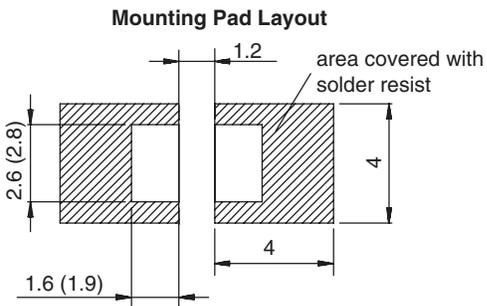
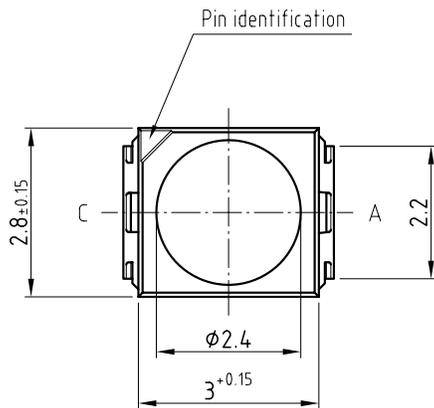
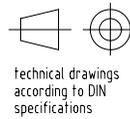
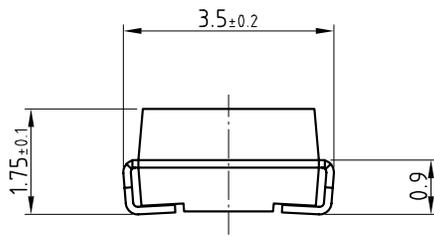


Figure 7. Relative Intensity vs. Wavelength

PACKAGE DIMENSIONS in millimeters



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