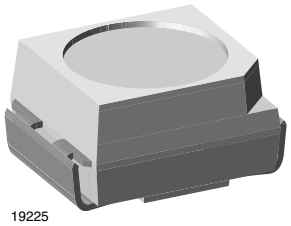
Low Current SMD LED PLCC-2


19225

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
- 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
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC
- Automotive qualified AEC-Q101

DESCRIPTION

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

The package of the VLMA3100 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: ± 60

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
VLMA3100-GS08	Yellow, $I_V \geq 0.28$ mcd	GaAsP on GaP
VLMA3100-GS18	Yellow, $I_V \geq 0.28$ mcd	GaAsP on GaP

ABSOLUTE MAXIMUM RATINGS[1] VLMA3100				
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 °C, unless otherwise specified
[2] Driving the LED in reverse direction is suitable for short term application

OPTICAL AND ELECTRICAL CHARACTERISTICS[1] VLMA3100, YELLOW						
PARAMETER	**TEST CONDITION**	**SYMBOL**	**MIN**	**TYP.**	**MAX**	**UNIT**
Luminous intensity [2]	I_F = 2 mA	I_V	0.28	2.5		mcd
Dominant wavelength	I_F = 2 mA	λ_d	581		594	nm
Peak wavelength	I_F = 2 mA	λ_p		585		nm
Angle of half intensity	I_F = 2 mA	φ		± 60		deg
Forward voltage	I_F = 2 mA	V_F		2.2	2.9	V
Reverse voltage	I_R = 10 µA	V_R	6	20		V
Junction capacitance	V_R = 0, f = 1 MHz	C_j		50		pF

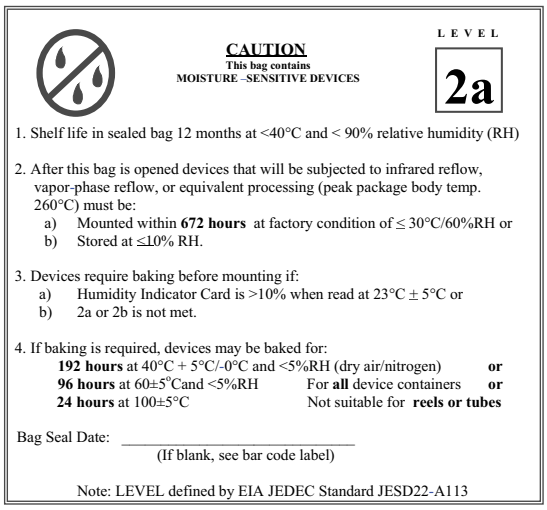
Note:
[1] T_{amb} = 25 °C, unless otherwise specified
[2] In one Packing Unit $I_{Vmax}/I_{Vmin} \leq 2.0$

LUMINOUS INTENSITY CLASSIFICATION		
GROUP	**LUMINOUS INTENSITY (MCD)**	
	MIN.	**MAX.**
C1	0.28	0.36
C2	0.36	0.45
D1	0.45	0.56
D2	0.56	0.71
E1	0.71	0.90

Note:
Luminous intensity is tested at a current pulse duration of 25 ms and an accuracy of ± 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, singe wavelength groups will not be orderable.

COLOR CLASSIFICATION		
GROUP	**DOMINANT WAVELENGTH (NM)**	
	YELLOW	
	MIN.	**MAX.**
1	581	584
2	583	586
3	585	588
4	587	590
5	589	592
6	591	594

Note:
Wavelengths are tested at a current pulse duration of 25 ms and an accuracy of ± 1 nm.



Example of JESD22-A112 Level 2a label

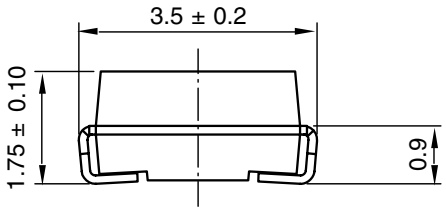
ESD PRECAUTION

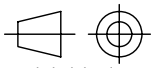
Proper storage and handling procedures should be followed to prevent ESD damage to the devices especially when they are removed from the Antistatic Shielding Bag. Electro-Static Sensitive Devices warning labels are on the packaging.

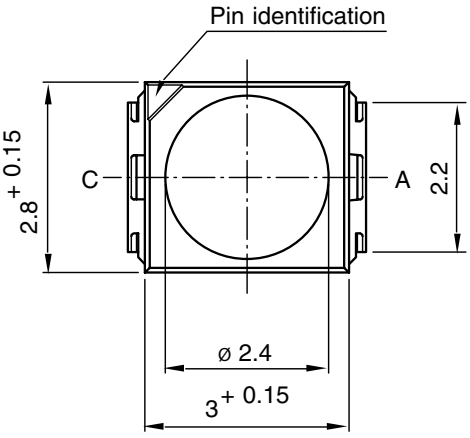
VISHAY SEMICONDUCTORS STANDARD BAR-CODE LABELS

The Vishay Semiconductors standard bar-code labels are printed at final packing areas. The labels are on each packing unit and contain Vishay Semiconductors specific data.

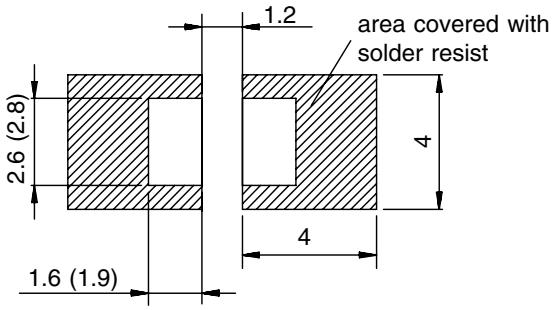
PACKAGE DIMENSIONS in millimeters







Mounting Pad Layout



Drawing-No.: 6.541-5025.01-4
Issue: 8; 22.11.05
95 11314-1