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WIEDNER HAUPTSTRASSE 76 1040 VIENNA AUSTRIA
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SMC1300

- Infrared LED
- 1300 nm, 3.5 mW
- SMD package, Ceramic
- Dimension: 3.0 x 2.0 x 1.1 mm
- Viewing Angle: 110°

RoHS COMPLIANT Pb-Free

Description

SMC1300 is a surface mount InGaAsP LED with a typical peak wavelength of **1300 nm** and radiation of **3.5 mW**. It comes in SMD package (ceramic) and is sealed with silicone or epoxy resin.

Maximum Ratings (T_{CASE}=25°C)

Parameter	Symbol	Values Min.	Values Max.	Unit
Power Dissipation	P_D		130	mW
Forward Current	I_F		100	mA
Pulse Forward Current *1	I_{FP}		500	mA
Reverse Voltage	V_F		5	V
Operating Temperature	T_{CASE}	- 30	+ 85	°C
Storage Temperature	T_{STG}	- 40	+ 100	°C
Lead Solder Temperature *2	T_{SLD}		+ 240	°C

*1 *duty=1%, pulse width = 1 µs*
*2 *must be completed within 3 seconds*

Electro-Optical Characteristics (T_{CASE}=25°C)

Parameter	Symbol	Conditions	Values Min.	Values Typ.	Values Max.	Unit
Peak Wavelength	λ_P	I_F=50mA	1250	1300	1350	nm
Half Width	$\Delta\lambda$	I_F=50mA		75		nm
Forward Voltage	V_F	I_F=50mA		1.1	1.4	V
Reverse Current	I_R	V_R=5V			10	µA
Radiated Power *1	P_O	I_F=50mA		3.5		mW
Radiant Intensity	I_E	I_F=50mA				mW/sr
Viewing Angle	φ	I_F=50mA		110		deg.
Rise Time	t_R	I_F=50mA		10		ns
Fall Time	t_F	I_F=50mA		10		ns

*1 *measured by PD G8370-85*

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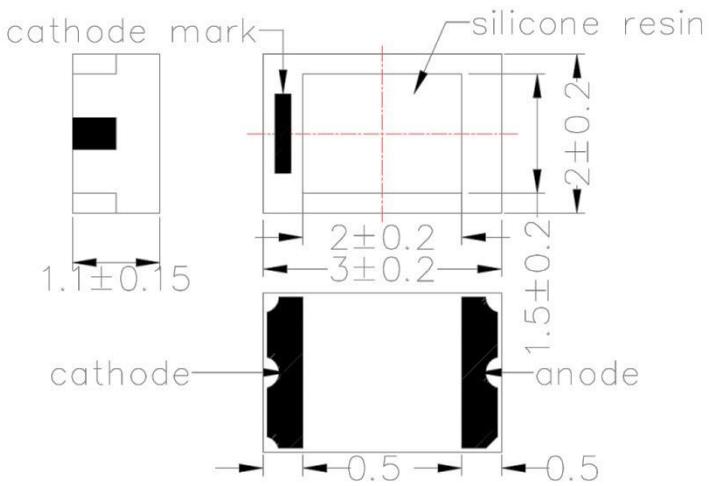
Outline Dimensions

SMC1300 **flat**



All Dimensions in mm

Precautions

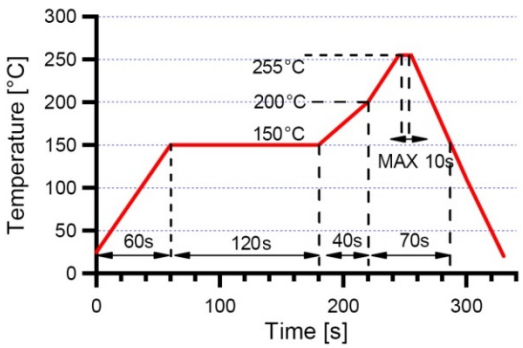
Soldering:

- Do avoid overheating of the LED
- Do avoid electrostatic discharge (ESD)
- Do avoid mechanical stress, shock, and vibration
- Do only use non-corrosive flux
- Do not apply current to the LED until it has cooled down to room temperature after soldering

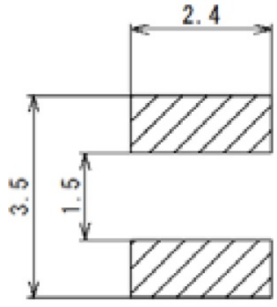
Recommended soldering conditions:

This LED is designed to be reflow soldered on to a PCB. If dip soldered or hand soldered, its reliability cannot be guarantee.
Nitrogen reflow soldering is recommended. Air flow soldering conditions can cause optical degradation, caused by heat and/or atmosphere.

IR Reflow Soldering Profile (Lead-free Solder)



Recommended Soldering Patterns



Unit: mm

Above table specifies the maximum allowed duration and temperature during soldering. It is strongly advised to perform soldering at the shortest time and lowest temperature possible.

Cleaning:

Cleaning with isopropyl alcohol, propanol, or ethyl alcohol is recommended
DO NOT USE acetone, chloroseen, trichloroethylene, or MKS
DO NOT USE ultrasonic cleaners

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.

Radiation:

Those LEDs do emit **invisible light**, which is invisible and may cause cancer. Do avoid exposure to the emitted light. It is further advised to attach a warning label on products/systems.

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.