Agilent HSMx-A10x-xxxxx PLCC-2 SMT LED

Product Brief

Background

An industry leader in high brightness LED technology, Agilent Technologies offers a wide range of surface-mount (SMT) LEDs, including Subminiature lamps, ChipLEDs and High flux LEDs. As more applications demand SMT LEDs, we have introduced the Agilent PLCC-2 SMT LEDs. These new products deliver top emission in the industry-standard PLCC-2 package.

About the products

This surface-mount LED comes in PLCC-2 standard package dimension. It has a substrate made up of a molded plastic reflector sitting on top of a bent lead frame. The die is attached within the reflector cavity and the cavity is encapsulated by an Agilent proprietary epoxy blend.

The PLCC-2 SMT LED products with a viewing angle of 120° is ideal for instruments/switch/icon backlighting. Its external reflector makes easy coupling with light pipe/light guide for an even-larger area backlighting. The package design coupled with careful selection of component materials allow these products to perform with high reliability in a larger temperature range -40°C to 100°C. The high reliability feature is crucial to Automotive Interior and Indoor ESS.

This package is also designed to be compatible with both IR-solder reflow and through-the-wave soldering.

The new Agilent TLED will carry the part number HSMx-A10x-xxxxx.

Features and Benefits

- **Industry Standard PLCC-2 SMT package**
  - No change in existing board layout, drop-in replacement for the existing PLCC-2 SMT LEDs
- **High brightness using AlInGaP and InGaN dice technologies**
  - Only supplier using TS AlInGaP material
- **Available in multiple colors**
  - Broad range of colors: Red, Red-Orange, Orange, Amber, Yellow-Green, Emerald Green, Green, Cyan and Blue
- **Super wide viewing angle at 120°**
  - Well-suited for backlighting applications
- **High volume, high reliability**
  - Cost effective solution
- **Compatible with both IR and TTW soldering process**
- **Black reflector surface**
  - for reduce contrast in ESS
- **High brightness performance – only PLCC-2 SMT LED supplier offering TS AlInGaP material**

Agilent Technologies

Special Product Features and Benefits

- **Mold Clamp**
  - provides highest reliability performance by eliminating leadframe-epoxy delamination after solder reflow
- **Reflector Step Down**
  - perfect SMT pick-up due to epoxy overfill being eliminated
- **Package Bottom Chamfer**
  - perfect lead forming giving high reliability performance (no lead over-formed), and no "tomb-stoning" defect after solder reflow

Target Markets and Applications

- **Interior automotive**
  - Instrument panel backlighting
  - Central console backlighting
  - Cabin backlighting
- **Electronic Signs and Signals**
  - Interior full color sign
  - Variable message sign
- **Office Automation, Electrical Appliances, Industrial Equipment**
  - Front panel backlighting
  - Push button backlighting
  - Display backlighting

Part Numbers and Typical Product Performance

Part Number	Color	Dominant Wavelength λ_D (nm)	Viewing Angle $2\theta_{1/2}$ (°)	Intensity, Iv @ 20mA Min (mcd)	Intensity, Iv @ 20mA Typ (mcd)	Vf @ 20mA Typical (V)
HSMS-A100-J00J1	GaP Red	626	120	4	15	2.2
HSMH-A100-L00J1	AS AlGaAs Red	637	120	10	50	1.9
HSMC-A100-Q00J1	AS AlInGaP Red	626	120	63	100	1.9
HSMZ-A100-R00J1	TS AlInGaP Red	630	120	100	400	2.2
HSMJ-A100-Q00J1	AS AlInGaP Red Orange	615	120	63	200	1.9
HSMV-A100-R00J1	TS AlInGaP Red Orange	617	120	100	350	2.2
HSMD-A100-J00J1	GaP Orange	602	120	4	15	2.2
HSML-A100-Q00J1	AS AlInGaP Orange	605	120	63	160	1.9
HSMY-A100-J00J1	GaP Amber	585	120	4	15	2.2
HSMA-A100-Q00J1	AS AlInGaP Amber	590	120	63	100	1.9
HSMU-A100-R00J1	TS AlInGaP Amber	592	120	100	270	2.2
HSMG-A100-J02J1	GaP Yellow	569	120	4	18	2.2
HSMG-A100-H01J1	GaP Emerald Green	560	120	2.5	8	2.2
HSMM-A100-S00J1	InGaN Green	525	120	160	280	3.7
HSMK-A100-S00J1	InGaN Cyan	505	120	160	280	3.5
HSMB-A100-J00J1	GaN Blue	462	120	4	15	4.0
HSMN-A100-P00J1	InGaN Blue	470	120	40	70	3.5

Notes:

1. The luminous intensity I_V, is measured at the mechanical axis of the lamp package. The actual peak of the spatial radiation pattern may not be aligned with this axis.
2. The dominant wavelength, λ_D, is derived from the CIE Chromaticity Diagram and represents the color of the device.
3. $\theta_{1/2}$ is the off-axis angle where the luminous intensity is 1/2 the peak intensity.

For product information and a complete list of Agilent contacts and distributors, please go to our web site.

www.agilent.com/semiconductors

E-mail: SemiconductorSupport@agilent.com

February 13, 2002
5988-5616EN

Agilent Technologies