

Light Avenue Premium Edition LED series is designed for high performance consumer applications. As this die can be driven at very high currents compared to the chip size, an outstanding cost vs. performance ratio is achievable.



Features

- High power AlGaAs chip
- High brightness AlInGaP chip
- Absorbing substrate
- Polarity p-side up
- ESD withstand voltage up to 1kV
- Optimized for SMT applications
- Grouping: luminous intensity, wavelength

Applications

- Solid state lighting
- Lamps
- Displays
- Light indicators

Delineation

Mechanical characteristics

DESCRIPTION	MINIMUM	TYPICAL ¹	MAXIMUM
Chip size (μm)	450	500	550
Chip height (μm)	190	220	250
Bond pad diameter (μm)	100	120	140
Top contact	Anode (p), aluminum		
Bottom contact	Cathode (n), gold alloy		
Die attach	Epoxy bonding		

Electro-optical characteristics ($T_A = 25^\circ\text{C}$)²

PARAMETER	SYMBOL	CONDITION	MIN.	TYP. ¹	MAX.	UNIT
Forward voltage	V_F	$I_F = 140\text{ mA}$			2.70	V
Reverse voltage	V_R	$I_R = 10\ \mu\text{A}$	5.0			V
Dominant wavelength	λ_{dom}	$I_F = 140\text{ mA}$	580		597.5	nm
Luminous intensity	I_v	$I_F = 140\text{ mA}$	800	1250		mcd

Maximum ratings ($T_A = 25^\circ\text{C}$)³

PARAMETER	SYMBOL	VALUE	UNIT
Operating temperature range	T_{op}	-40...+85	$^\circ\text{C}$
Forward current	I_F	200	mA
LED junction temperature	T_j	125	$^\circ\text{C}$

Binning ($I_F = 140\text{ mA}$)⁴

		WAVELENGTH (NM)				
		580-585	582.5-587.5	585-590	587.5-592.5	590-595
Luminous intensity (mcd)	> 800	AM36	A36	BM36	B36	CM36
	> 1000	AM37	A37	BM37	B37	CM37

Notes:

- The usage of LEDs in life-support devices or systems has to be expressly and written authorized by the supplier!
- Dice are sensitive to ESD.
- Dice are shipped on blue foil with or without frame and have therefore to be stored between 15 and 30 $^\circ\text{C}$ and below 60% relative humidity.
- Lead free product - RoHS compliant.
- The information in this document is subject to change without notice and describes the die generally. It shall not be considered as assured characteristics or detailed specification.
- The quality level of the final visual inspection shall comply to an AQL of 1.0 (according to MIL-STD-105E, level II), if the customer performs an incoming visual inspection of a shipment.

- All chips are checked according to the "Failure Catalog of Light Avenue dice" dated 2009-11-14. If this document is not familiar to you, please request it at your next sales office.

¹Typical (Typ) data are defined as long-term production mean values. These values are not specified and only given for information.

²Measurements are done with an accuracy of $\pm 15\%$. Correlation to customer's equipment and products is required.

³Maximum ratings are package dependent and may differ between packages. The forward current is not limited by the die but by the effect of the LED junction temperature on the package. If you need more information on pulsed operation, please contact your next sales office about possible driving conditions. If not otherwise specified the maximum pulse current may not exceed the maximum current in continuous mode.

⁴There may be more than one bin on one single foil. Single bins cannot be ordered.