

Features

- 2.15x2.40mm with 1.80mm lens
- High Brightness
- Water Clear/ Diffused lens
- InGaN/ AlGaInP Technology
- Special packaging available upon request
- High reliability

Applications

- Consumer Electronics
- Variable Message Signs (VMS)
- Automobile After Market
- Industrial Equipment
- Advertising Signs

Description

The INA-912AXXX series is high brightness SMD Axial LED. It is a 1.8mm Lens type LED which can be used in various applications.

Recommended Solder Pattern

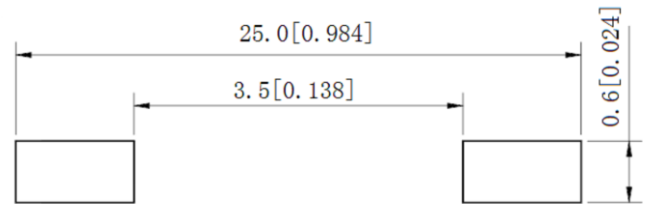


Figure 1. INA-912AXXX series Solder Pattern

Package Dimensions in mm

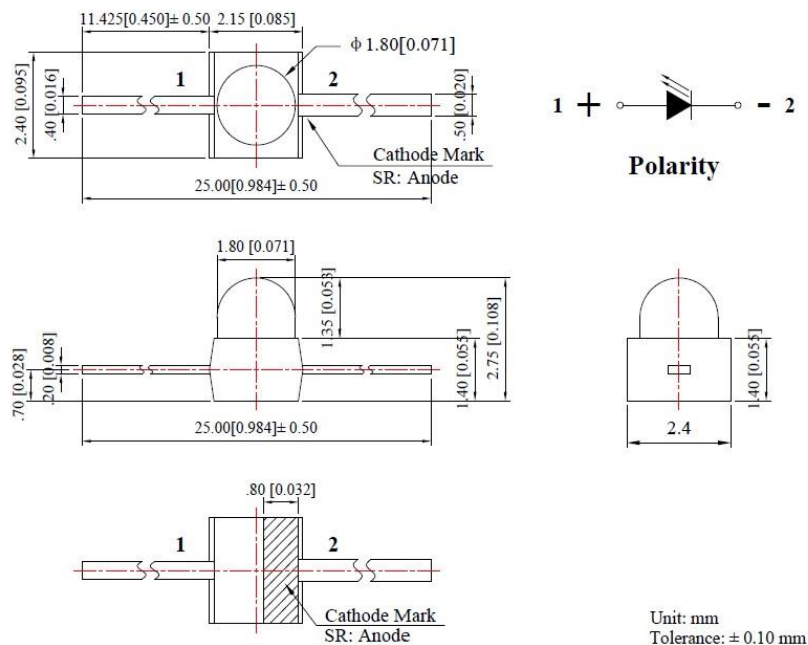


Figure 2. INA-912AXXX series Package Dimensions

Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is ± 0.25 mm (.010") unless otherwise noted.

Absolute Maximum Rating at 25°C (Note)

Product	Emission Color	P _d (mW)	I _F (mA)	I _{FP} * (mA)	V _R (V)	T _{OP} (°C)	T _{ST} (°C)
INA-912AY25	Yellow	60	25	100	5	-40°C~+80°C	-40°C~+85°C
INA-912AYG25	Yellow Green	60	25	100	5	-40°C~+80°C	-40°C~+85°C
INA-912ADR25	Deep Red	60	25	100	5	-40°C~+80°C	-40°C~+85°C
INA-912AG25	Green	90	25	100	5	-40°C~+80°C	-40°C~+85°C
INA-912AB25	Blue	90	25	100	5	-40°C~+80°C	-40°C~+85°C
INA-912AYUW160	White	90	25	100	5	-40°C~+80°C	-40°C~+85°C

Notes

1. Derate linearly as shown in derating curve.
2. Duty Factor = 10%, Frequency = 1 kHz

Electrical Characteristics $T_A = 25^\circ\text{C}$ (Note)

Product	Emission Color	$I_F(\text{mA})$	$V_F(\text{V})$		$\lambda(\text{nm})$			Viewing Angle	$I_v(\text{mcd})$	
			min	max	λ_D	λ_P	$\Delta\lambda$	2 θ 1/2	min	typ.
INA-912AY25	Yellow	20	1.6	2.4	590	592	15	25	1000	2000
INA-912AYG25	Yellow Green	20	1.6	2.4	573	575	20	25	800	1800
INA-912ADR25	Deep Red	20	1.6	2.4	640	660	45	25	250	550
INA-912AG25	Green	20	2.8	3.6	525	520	35	25	1500	3000
INA-912AB25	Blue	20	2.8	3.6	470	468	25	25	500	1000
INA-912AYUW160	White	20	2.8	3.6	X: 0.31 Y: 0.32	-	-	160	150	500

Notes

1. Performance guaranteed only under conditions listed in above tables.
2. Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve.
3. 2 θ 1/2 is the θ -axis angle where the luminous intensity is 1/2 the peak intensity.
4. The dominant wavelength (λ_D) is derived from the CIE chromaticity diagram and represents the single wavelength which defines the color of the device.

ESD Precaution

ATTENTION: Electrostatic Discharge (ESD) protection

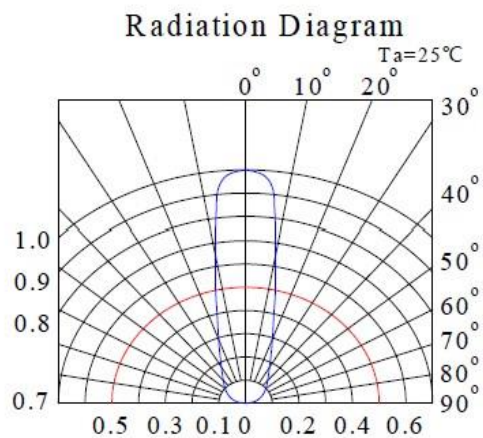
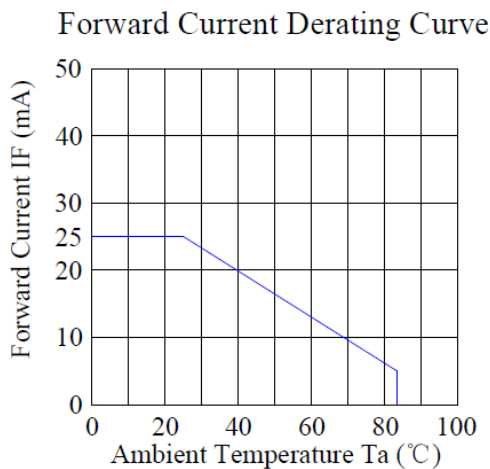
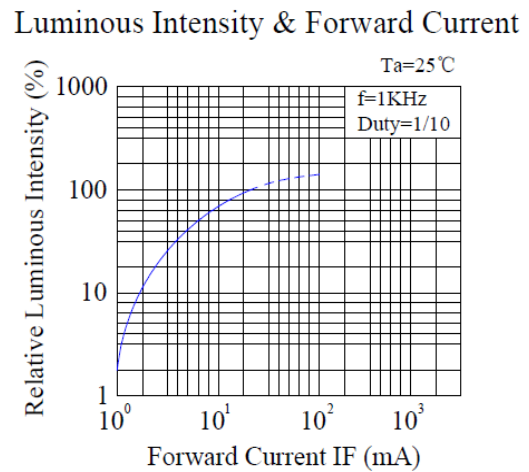
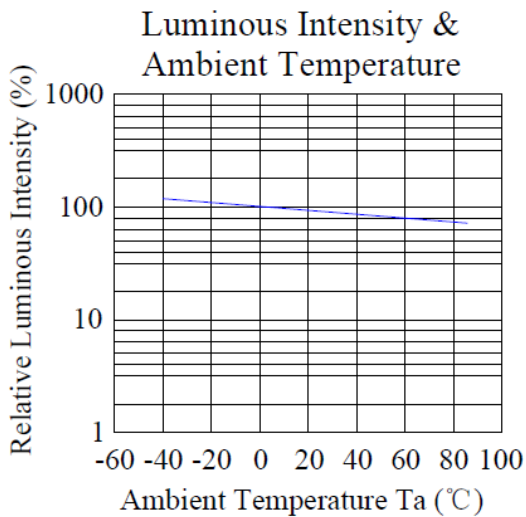
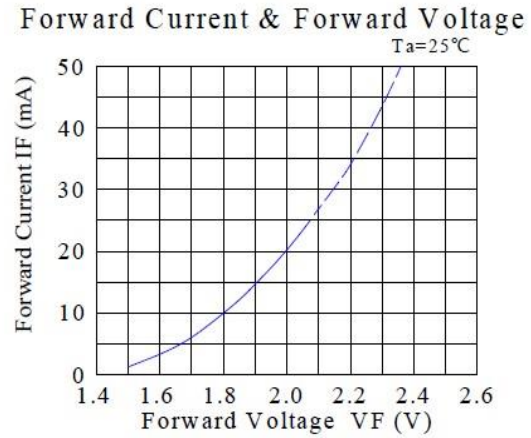
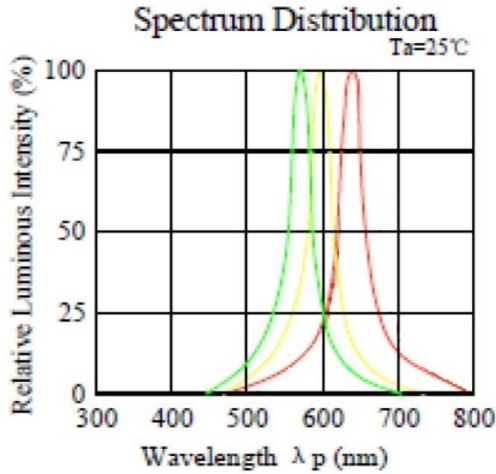


The symbol above denotes that ESD precaution is needed. ESD protection for GaP and AlGaAs based chips is necessary even though they are relatively safe in the presence of low static-electric discharge. Parts built with AlInGaP, GaN, or/and InGaN based chips are STATIC SENSITIVE devices. ESD precaution must be taken during design and assembly.

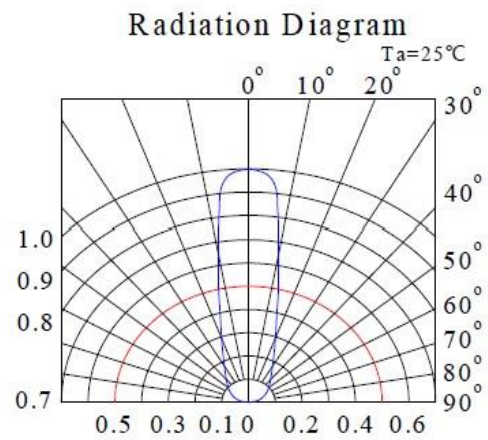
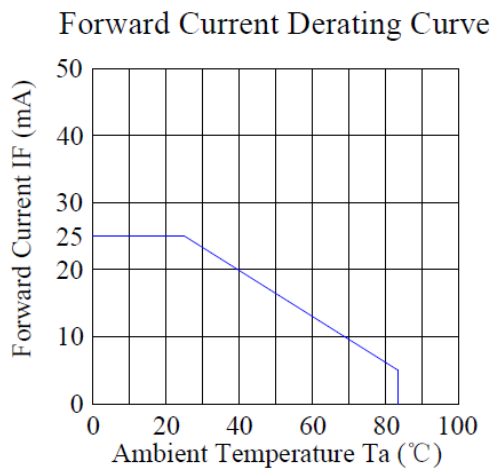
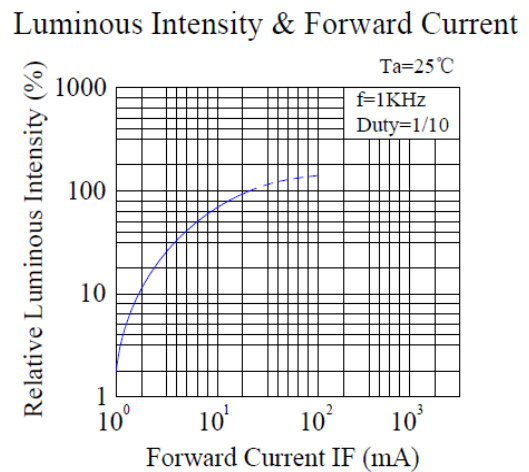
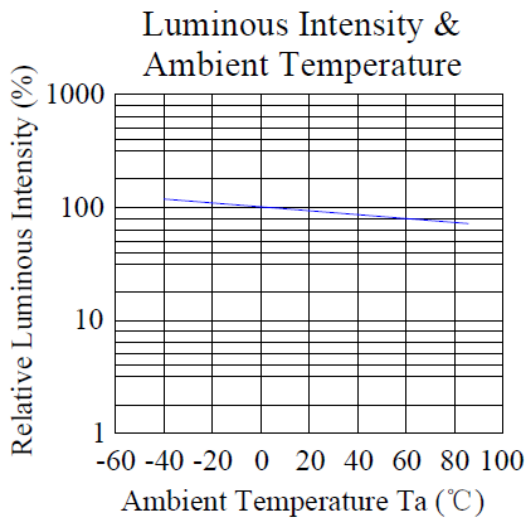
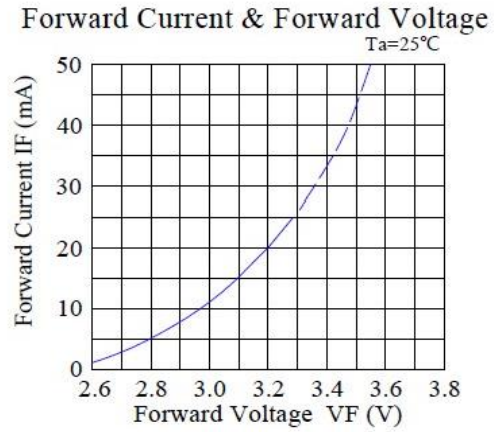
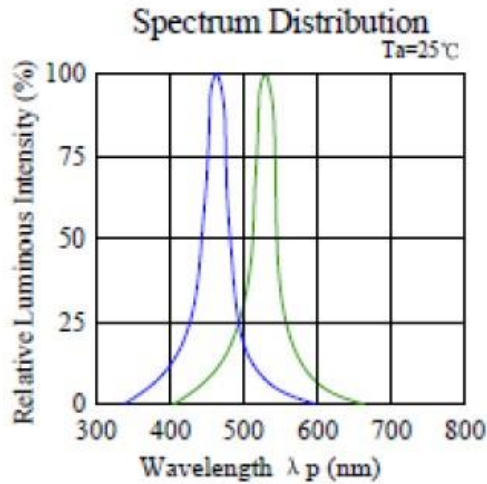
If manual work or processing is needed, please ensure the device is adequately protected from ESD during the process.

Please be advised that normal static precautions should be taken in the handling and assembly of this device to prevent damage or degradation which may be induced by electrostatic discharge (ESD).

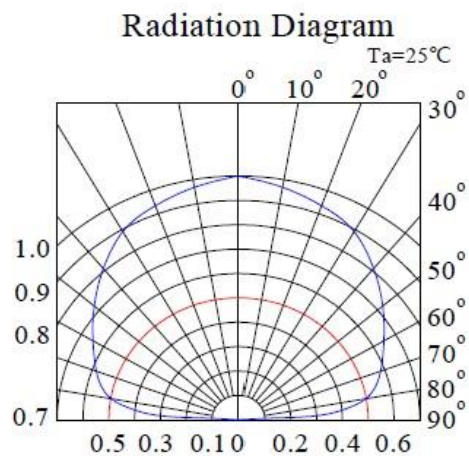
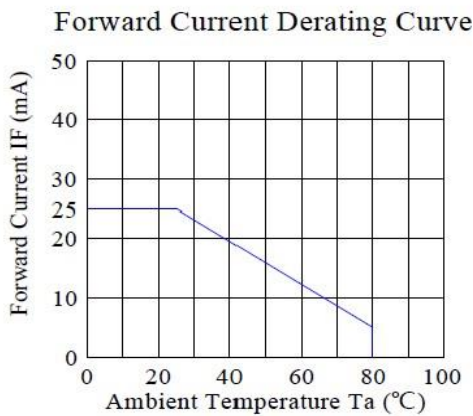
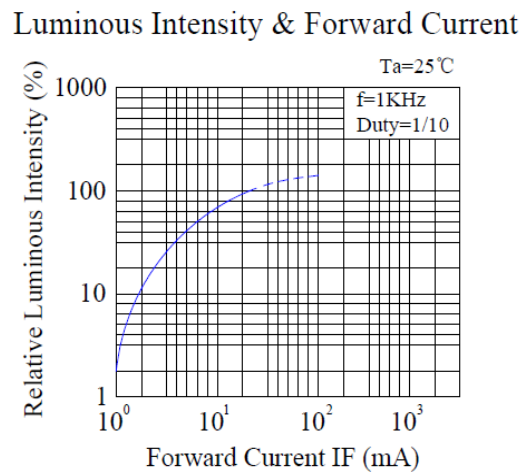
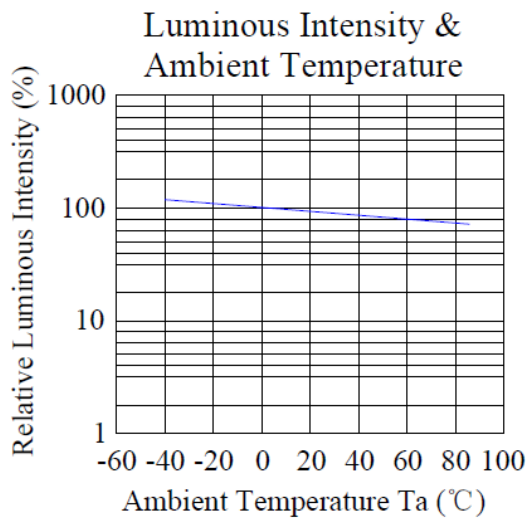
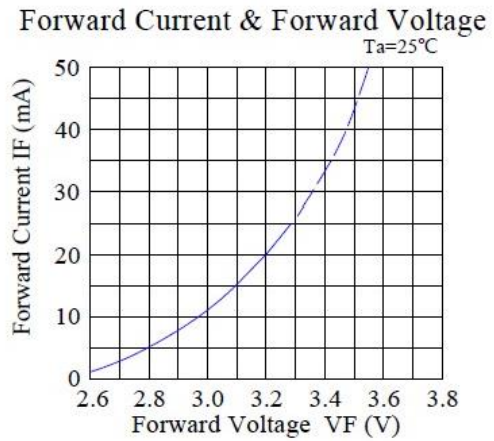
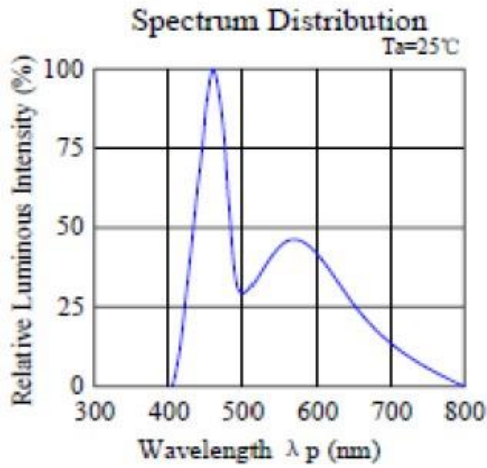
Typical Characteristic Curves Y, YG, DR



Typical Characteristic Curves G, B



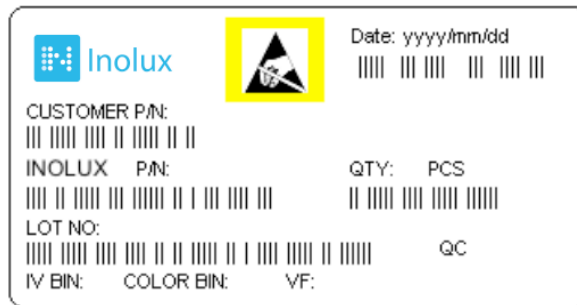
Typical Characteristic Curves W



Ordering Information

Product	Emission Color	Technology	Test Current I _F (mA)	Luminous Intensity I _v (mcd) (Typ.)	Forward Voltage V _F (V) (Typ.)	Orderable Part Number
INA-912AY25	Yellow	AlGaInP	20	2000	2.0	INA-912AY25
INA-912AYG25	Yellow Green	AlGaInP	20	1800	2.0	INA-912AYG25
INA-912ADR25	Deep Red	AlGaInP	20	550	1.8	INA-912ADR25
INA-912AG25	Green	InGaN	20	3000	3.2	INA-912AG25
INA-912AB25	Blue	InGaN	20	1000	3.2	INA-912AB25
INA-912AYUW160	White	InGaN	20	500	3.2	INA-912AYUW160

Label Specifications



Inolux P/N:

I	N	A	-	912	A	X	X	X	X	X	X	X
Inolux Leadframe Axial				Package	Lens	Color	View Angle	Customized Stamp-off				
				912A = Lead frame Axial	(Blank) = Clear Lens YU = Yellow Diffused	Y = 590nm YG = 570nm DR = 640nm G = 520nm B = 470nm W = x: 0.31 y: 0.32	25 = 25 deg. 160 = 160 deg.					

Lot No.:

Z	2	0	1	7	01	24	001
Internal Tracker	Year (2017, 2018,)				Month	Date	Serial

Reliability

Item	Frequency/ lots/ samples/ failures	Standards Reference	Conditions
Precondition	For all reliability monitoring tests according to JEDEC Level 2	J-STD-020	1.) Baking at 85°C for 24hrs 2.) Moisture storage at 85°C/ 60% R.H. for 168hrs
Solderability	1Q/ 1/ 22/ 0	JESD22-B102-B And CNS-5068	Accelerated aging 155°C/ 24hrs Tinning speed: 2.5+0.5cm/s Tinning: A: 215°C/ 3+1s or B: 260°C/ 10+1s
Resistance to soldering heat		CNS-5067	Dipping soldering terminal only Soldering bath temperature A: 260+/-5°C; 10+/-1s B: 350+/-10°C; 3+/-0.5s
Operating life test	1Q/ 1/ 40/ 0	CNS-11829	1.) Precondition: 85°C baking for 24hrs 85°C/ 60%R.H. for 168hrs 2.) Tamb25°C; IF=20mA; duration 1000hrs
High humidity, high temperature bias	1Q/ 1/ 45/ 0	JESD-A101-B	Tamb: 85°C Humidity: 85% R.H., IF=5mA Duration: 1000hrs
High temperature bias	1Q/ 1/ 20	IN specs.	Tamb: 55°C IF=20mA Duration: 1000hrs
Pulse life test	1Q/ 1/ 40/ 0		Tamb25°C, If=20mA,, Ip=100mA, Duty cycle=0.125 (tp=125 μs, T=1sec) Duration 500hrs)
Temperature cycle	1Q/ 1/ 76/ 0	JESD-A104-A IEC 68-2-14, Nb	A cycle: -40 degree C 15min; +85 degree C 15min Thermal steady within 5 min.. 300 cycles 2 chamber/ Air-to-air type
High humidity storage test	1Q/ 1/ 40/ 0	CNS-6117	60+3°C 90+5/-10% R.H. for 500hrs
High temperature storage test	1Q/ 1/ 40/ 0	CNS-554	100+10°C for 500hrs
Low temperature storage test	1Q/ 1/ 40/ 0	CNS-6118	-40+5°C for 500hrs

Revision History

Changes since last revision	Page	Version No.	Revision Date
Initial Release		1.0	06-15-2020

DISCLAIMER

INOLUX reserves the right to make changes without further notice to any products herein to improve reliability, function or design. INOLUX does not assume any liability arising out of the application or use of any product or circuit described herein; neither does it convey any license under its patent rights, nor the rights of others.

LIFE SUPPORT POLICY

INOLUX's products are not authorized for use as critical components in life support devices or systems without the express written approval of the President of INOLUX or INOLUX CORPORATION. As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury of the user.
2. A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.