

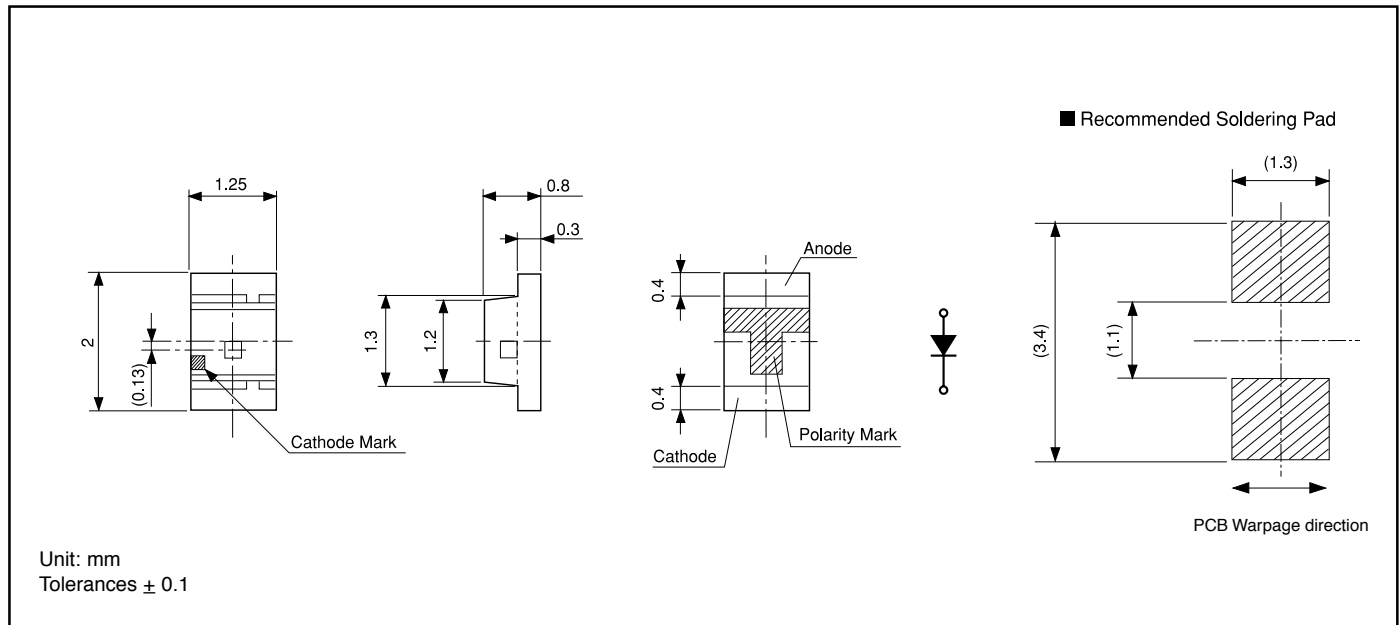
Features

- Meets industry standards for 2012 (0806) footprint 2.0mm (L) x 1.25mm (W) x 0.8mm (H)
- 1112H is 50% thinner than the W series.

Applications

- Membrane switch panels
- Backlighting
- Cellular telephones

Outline Dimensions



Electro-Optical Characteristics

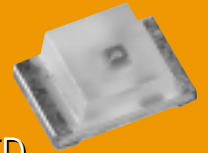
($T_a=25^\circ\text{C}$)

Type No.	Material	Emitted Color	Lens Color	Luminous Intensity I_v			Wavelength				Forward Voltage V_f			Reverse Current I_R		Viewing Angle (2θ 1/2)
				MIN.	TYP.	I_f	Peak λ_p TYP.	Dominant λ_d TYP.	Spectral Line Half Width $\Delta\lambda$ TYP.	I_f	TYP.	MAX.	I_f	MAX.	V_R	
BR1112H	GaAlAs	Red	Milky White	7.0	11.7	20	660	647	30	20	1.7	2.3	20	100	4	150°
AA1112H	GaAsP	Orange		2.2	3.7	20	605	606	30	20	2.2	2.8	20	100	4	
AY1112H	GaAsP	Yellow		2.2	3.7	20	580	590	30	20	2.2	2.8	20	100	4	
PY1112H	GaP	Yellow-Green		7.0	11.7	20	570	572	30	20	2.1	2.8	20	100	4	
PG1112H	GaP	Green		3.8	6.4	20	560	567	30	20	2.1	2.8	20	100	4	
BG1112H	GaP	Pure Green		1.6	2.7	20	555	558	30	20	2.1	2.8	20	100	4	
Units				mcd		mA	nm			mA	V	mA	μA	V	Deg.	



Product Guide

D_1112H Series, Thin Type InGaN/SiC SMT LED



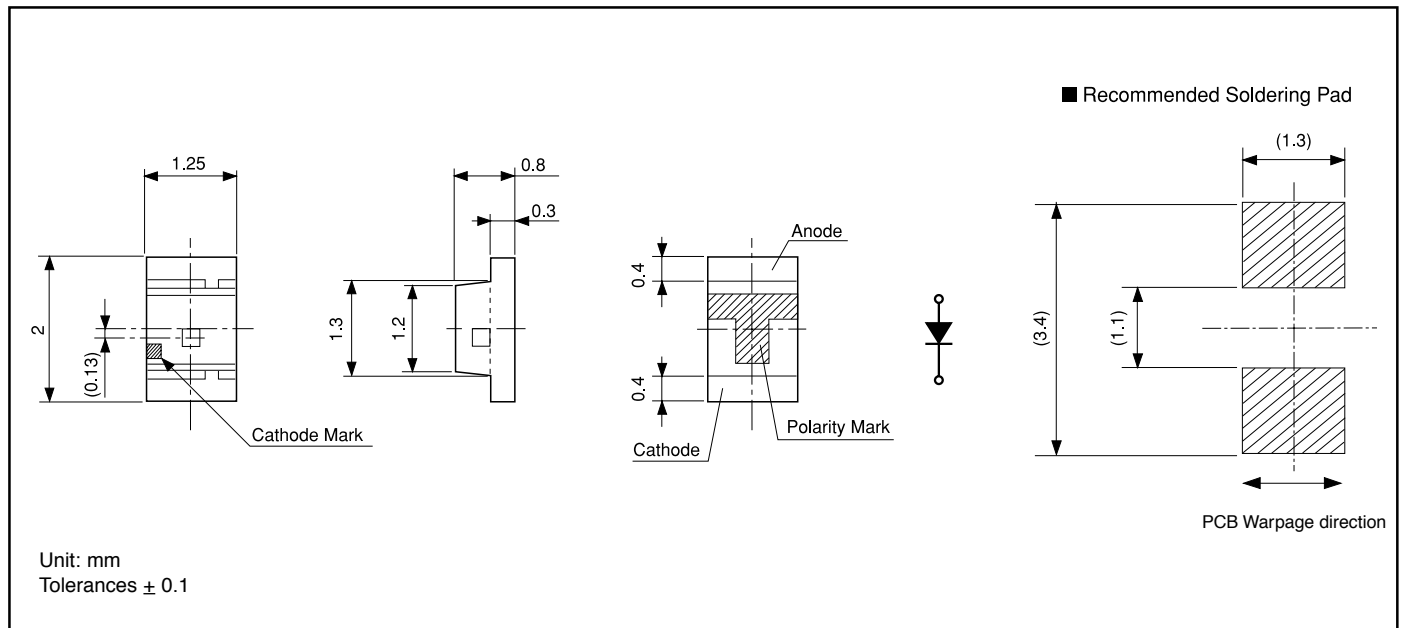
Features

- High brightness (InGaN/SiC) die material
- Available in green (525nm), bluish-green (505nm) and blue (470nm) colors
- Wide 150 degree viewing angle
- Reflow and dip soldering compatible
- 1000V minimum ESD protection

Applications

- Portable phone key pad backlight
- Various other backlight uses

Outline Dimensions



Electro-Optical Characteristics

(Ta=25°C)

Part No.	Material	Emitted Color	Lens Color	Luminous Intensity I_v			Wavelength				Forward Voltage V_F			Reverse Current I_R		Viewing Angle (2 θ 1/2)
				MIN.	TYP.	I_F	Peak λ_p TYP.	Dominant λ_d TYP.	Spectral Line Half Width $\Delta\lambda$ TYP.	I_F	TYP.	MAX.	I_F	MAX.	V_R	
DG1112H	InGaN/SiC	Green	Milky White	24	40	10	522	525	30	10	3.3	3.8	10	100	5	150°
DC1112H	InGaN/SiC	Bluish-Green		24	34	10	502	505	30	10	3.3	3.8	10	100	5	
DB1112H	InGaN/SiC	Blue		8.5	14	10	467	470	26	10	3.3	3.8	10	100	5	
Units				mcd	mA		nm			mA	V		mA	μA	V	Deg.

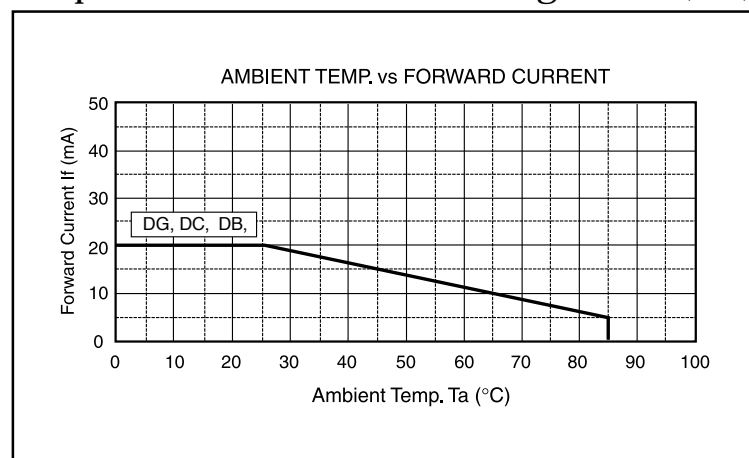
Absolute Maximum Ratings

(Ta=25°C)

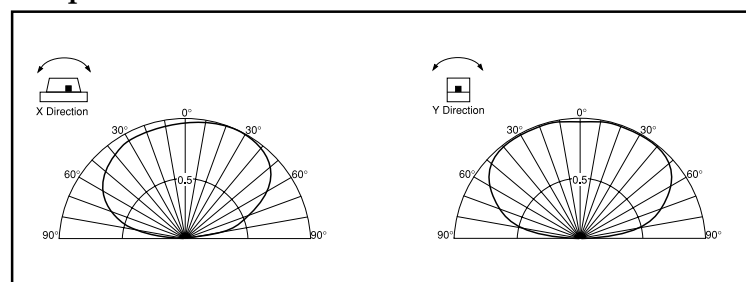
Item	Symbol	Green	Bluish-Green	Blue	Units
		DG	DC	DB	
Power Dissipation	Pd	76	76	76	mW
Forward Current	I _F	20	20	20	mA
Peak Forward Current	I _{FM}	48	48	48	mA
Reverse Voltage	V _R	5	5	5	V
Operating Temperature	Topr	-40 to +85			°C
Storage Temperature	Tstg	-40 to +100			°C
Derating*	ΔI _F	0.28 (DC) 0.69 (Pulse)			mA/°C

* Ta=25°C, I_{FM} applies for the pulse width ≤ 1msec. and duty cycle ≤ 1/20.

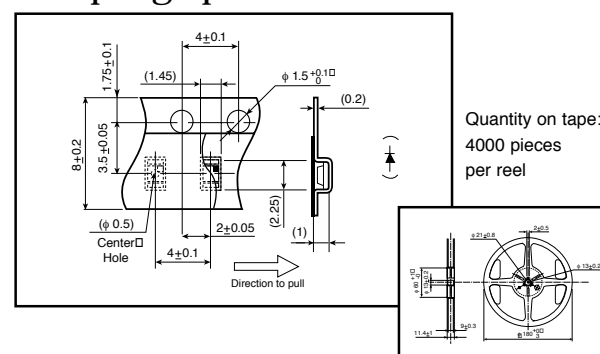
Operation Current Derating Chart (DC)



Spatial Distribution



Taping Specifications

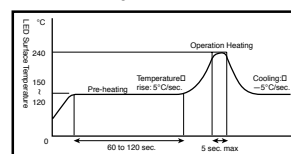


Precautions

Please follow these handling precautions to prevent damage to the chip and ensure its reliability.

1. Soldering conditions:

- **Soldering iron:** Temperature at tip of iron: 280°C max. (30W max.) Soldering time: 3 sec. max.
- **Dip soldering:** Preheating: 120 ~ 150°C max. (resin surface temp.) 60 ~ 120 sec. max. Bath temperature: 260°C max. Dipping Time: 5 sec. max.
- **Reflow Soldering:**



2. Cleaning:

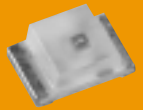
- If cleaning is required, use the following solutions for less than 1 minute, at less than 40°C.
- Appropriate chemicals: Ethyl alcohol and isopropyl alcohol.
- Effect of ultrasonic cleaning on the LED resin body differs depending on such factors as the oscillator output, size of PCB and LED mounting method. The use of ultrasonic cleaning should be enforced at proper output after confirming there is no problem.

Product specifications subject to change without notice. PGD1112H-0301



Product Guide

F_1112H Series Thin Type AlInGaP SMT LED



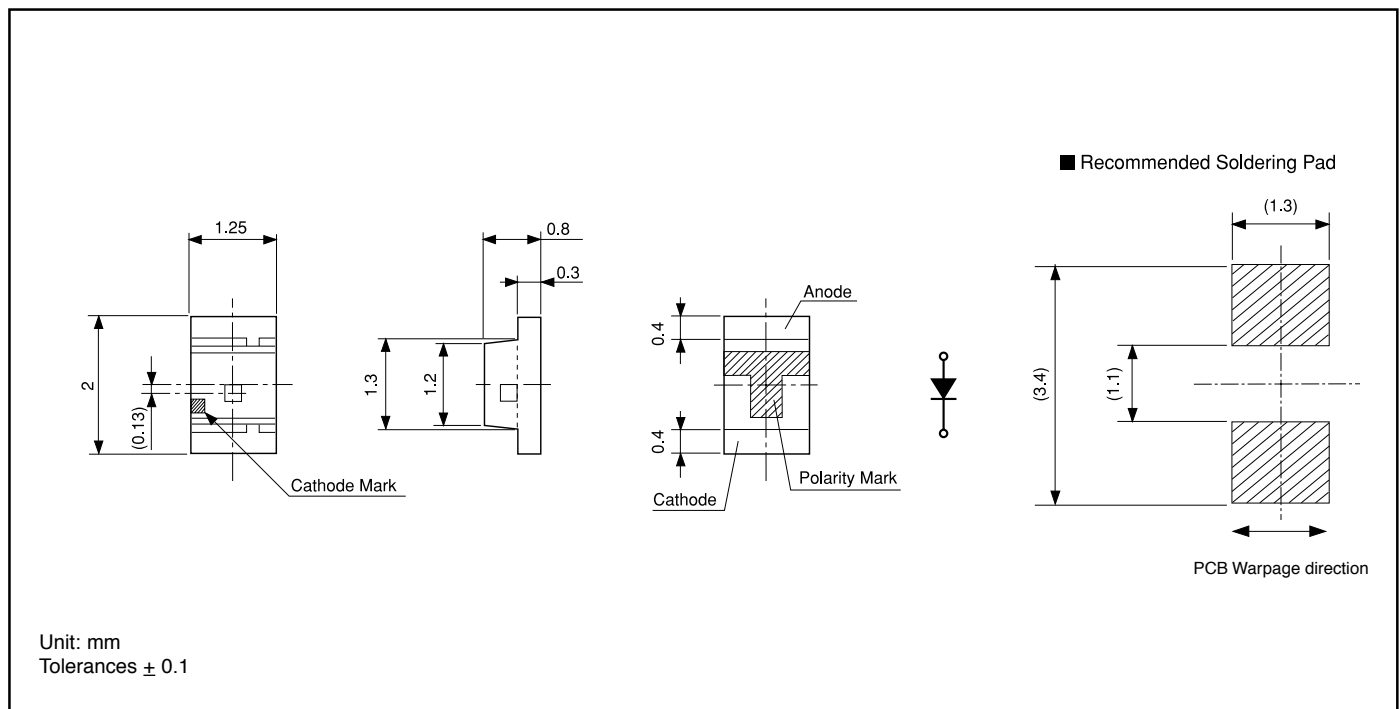
Features

- Compact 2012 (0805) package with super bright AlInGaP die
- Excellent for membrane switch panels and indicators

Applications

- Mobile devices (cellular telephones, PDAs, pagers)
- Audio visual equipment
- Telecommunications

Outline Dimensions



Electro-Optical Characteristics

(Ta=25°C)

Part No.	Material	Emitted Color	Lens Color	Luminous Intensity I _v			Wavelength				Forward Voltage V _f			Reverse Current I _r		Viewing Angle (2θ 1/2)
				MIN.	TYP.	I _f	Peak λ _p TYP.	Dominant λ _d TYP.	Spectral Line Half Width Δλ TYP.	I _f	TYP.	MAX.	I _f	MAX.	V _r	
FR1112H	AlInGaP	Red	Milky White	25	50	20	635	626	15	20	1.9	2.4	20	100	5	150°
FA1112H	AlInGaP	Orange		25	65	20	609	605	15	20	1.9	2.4	20	100	5	
FY1112H	AlInGaP	Yellow		25	65	20	592	590	15	20	1.9	2.4	20	100	5	
Units				mcd	mA		nm			mA	V	mA	μA	V	Deg.	

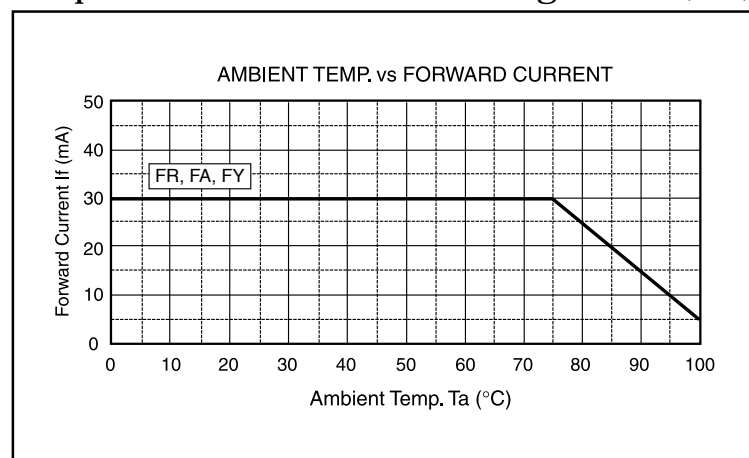
Absolute Maximum Ratings

(Ta=25°C)

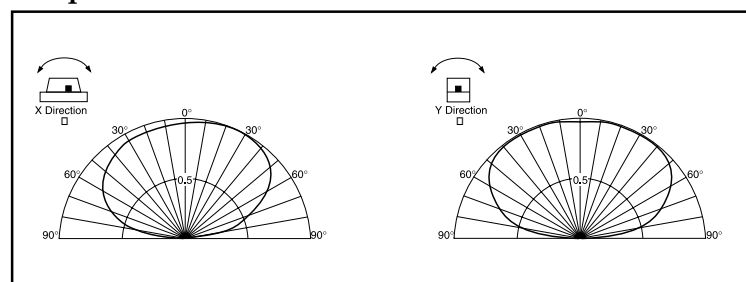
Item	Symbol	Red	Orange	Yellow	Units
		FR	FA	FY	
Power Dissipation	Pd	81	81	81	mW
Forward Current	I _F	30	30	30	mA
Peak Forward Current	I _{FM}	100	100	100	mA
Reverse Voltage	V _R	5	5	5	V
Operating Temperature	Topr	-40 to +85			°C
Storage Temperature	Tstg	-40 to +100			°C
Derating*	ΔI _F	0.43 (DC) 1.0 (Pulse)			mA/°C

* Ta=25°C, I_{FM} applies for the pulse width ≤ 1msec. and duty cycle ≤ 1/20.

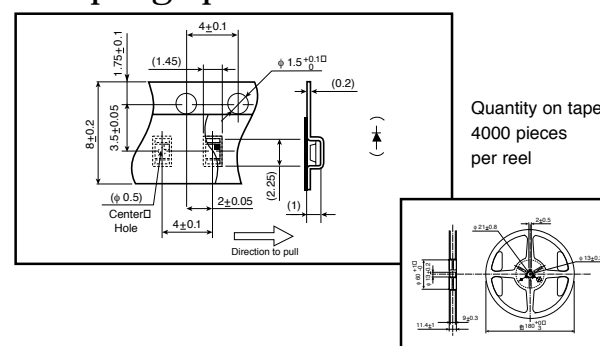
Operation Current Derating Chart (DC)



Spatial Distribution



Taping Specifications

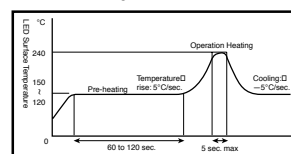


Precautions

Please follow these handling precautions to prevent damage to the chip and ensure its reliability.

1. Soldering conditions:

- **Soldering iron:** Temperature at tip of iron: 280°C max. (30W max.) Soldering time: 3 sec. max.
- **Dip soldering:** Preheating: 120° ~ 150°C max. (resin surface temp.) 60 ~ 120 sec. max. Bath temperature: 260°C max. Dipping Time: 5 sec. max.
- **Reflow Soldering:**



2. Cleaning:

- If cleaning is required, use the following solutions for less than 1 minute, at less than 40°C.
- Appropriate chemicals: Ethyl alcohol and isopropyl alcohol.
- Effect of ultrasonic cleaning on the LED resin body differs depending on such factors as the oscillator output, size of PCB and LED mounting method. The use of ultrasonic cleaning should be enforced at proper output after confirming there is no problem.

Product specifications subject to change without notice. PGF_1112H-0301