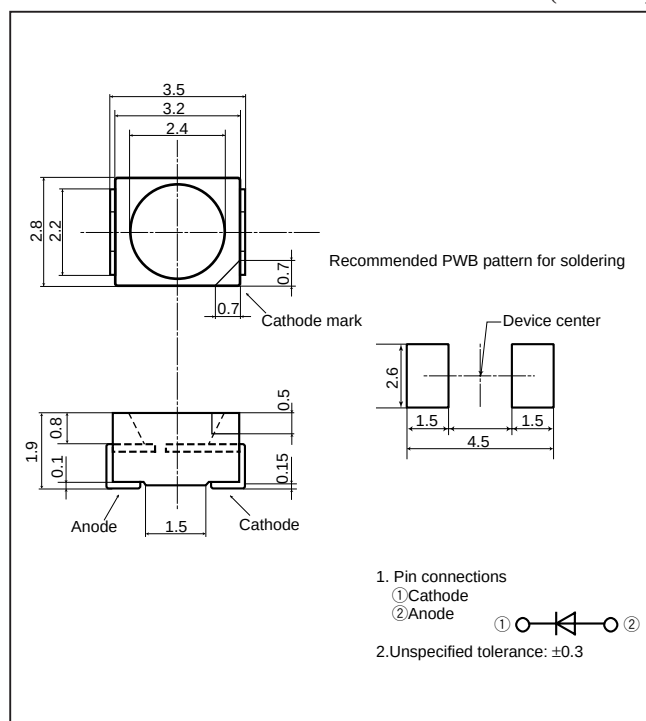


GM5□□95200A series

3528 Size, 1.9mm Thickness,
Leadless Chip LED

■ Outline Dimensions

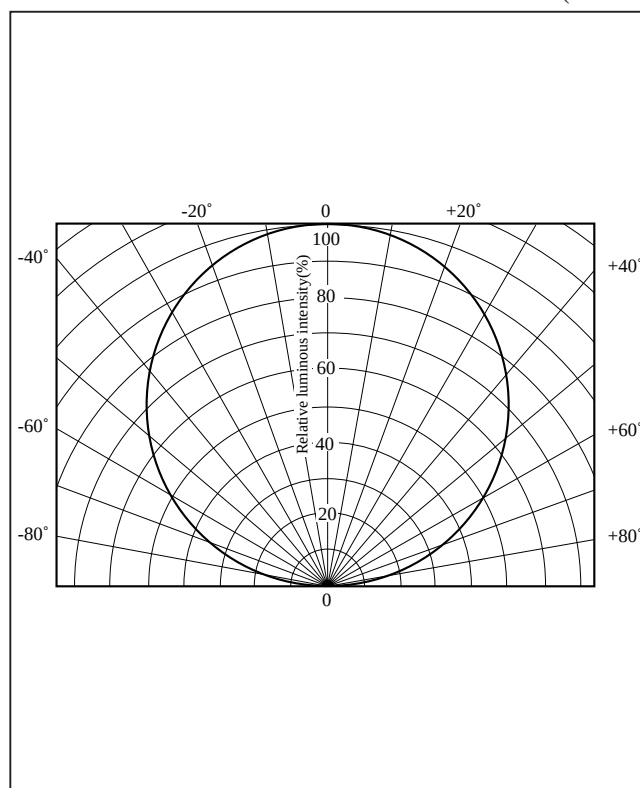
(Unit : mm)



GM5UR95200A: polarity inversion type

■ Radiation Diagram

(Ta=25°C)



■ Absolute Maximum Ratings

(Ta=25°C)

Model No.	Radiation color	Radiation material	Power dissipation P (mW)	Forward current I _F (mA)	Peak forward current I _{FM} *1 (mA)	Derating factor (mA/°C)		Reverse voltage V _R (V)	Operating temperature T _{opr} (°C)	Storage temperature T _{stg} (°C)	Soldering temperature T _{sol} *2 (°C)
						DC	Pulse				
GM5UR95200A	Red(Super-luminosity)	GaAlAs on GaAlAs	75	30	50	0.40	0.67	4	-55 to +110	-55 to +110	295
GM5HD95200A	Red	GaAsP on GaP	85	30	50	0.40	0.67	5	-55 to +110	-55 to +110	295
GM5HY95200A	Yellow	GaAsP on GaP	84	30	50	0.35	0.59	5	-55 to +110	-55 to +110	295
GM5EG95200A	Yellow-green	GaP	84	30	50	0.40	0.67	5	-55 to +110	-55 to +110	295

*1 Duty ratio=1/10, Pulse width=0.1ms

*2 For 3s or less at the temperature of hand soldering. Temperature of reflow soldering is shown on the page 7.

■ Electro-optical Characteristics

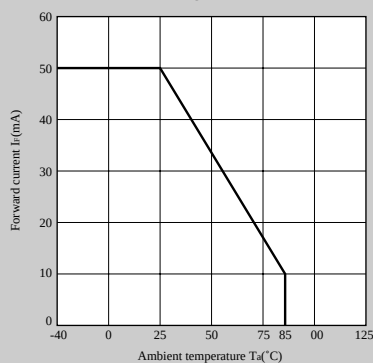
(I_F=20mA, T_a=25°C)

Lens type	Model No.	Forward voltage V _F (V)		Peak emission wavelength λ _p (nm) TYP	Luminous intensity I _v (mcd) TYP	Spectrum radiation bandwidth Δλ(nm) TYP	Reverse current		Terminal capacitance		Page for characteristics diagrams
		TYP	MAX				I _R (∞A) MAX	V _R (V)	C _t (pF) TYP	(MHz)	
Colorless transparency	GM5UR95200A	1.85	2.5	660	80	20	10	4	25	1	145
	GM5HD95200A	2.0	2.8	635	13.8	35	10	4	20	1	147
	GM5HY95200A	2.0	2.8	585	20	30	10	4	35	1	148
	GM5EG95200A	2.1	2.8	565	18.1	30	10	4	35	1	148

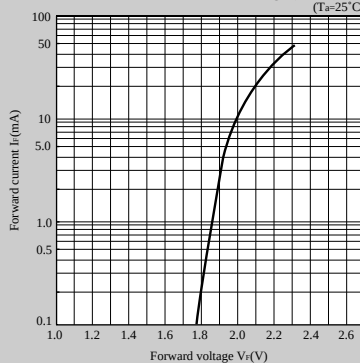
LED Lamp Characteristics Diagrams

ZG series

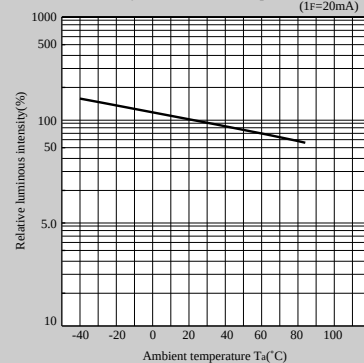
Forward Current Derating Curve



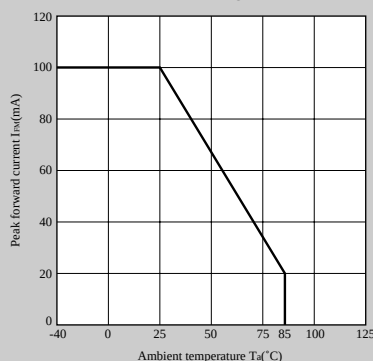
Forward Current vs. Forward Voltage(Note)



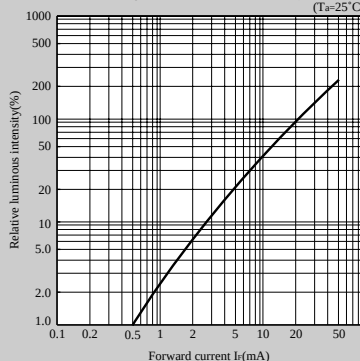
Luminous Intensity vs. Ambient Temperature(Note)



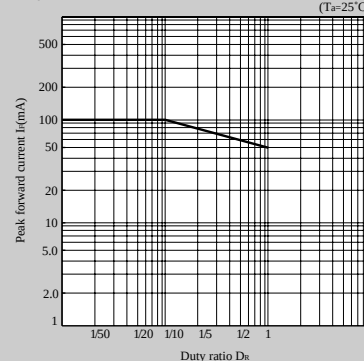
Peak Forward Current Derating Curve



Luminous Intensity vs. Forward Current(Note)

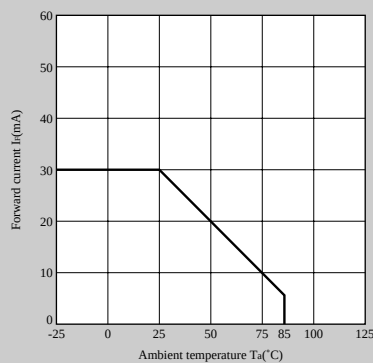


Duty Ratio vs. Peak Forward Current

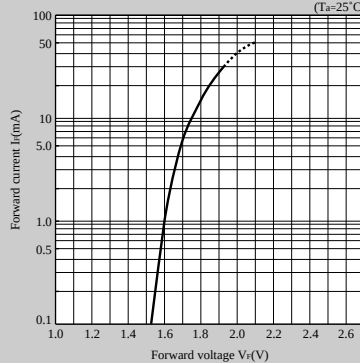


UR,U series

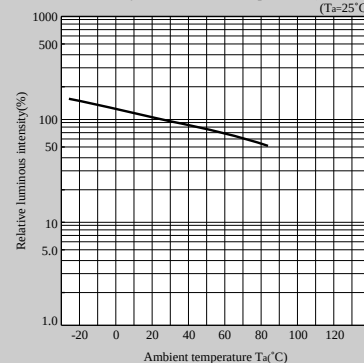
Forward Current Derating Curve



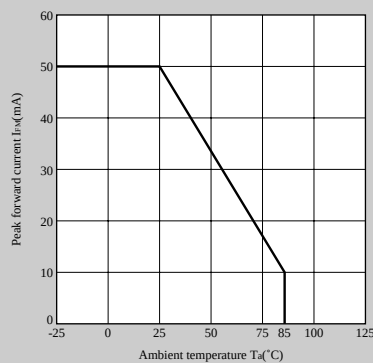
Forward Current vs. Forward Voltage(Note)



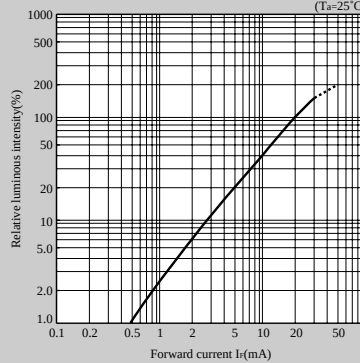
Luminous Intensity vs. Ambient Temperature(Note)



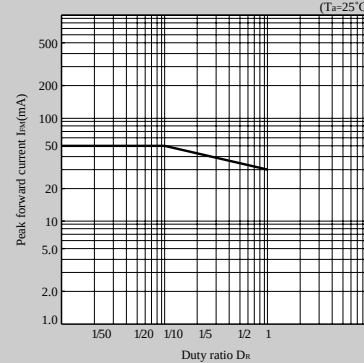
Peak Forward Current Derating Curve



Luminous Intensity vs. Forward Current(Note)



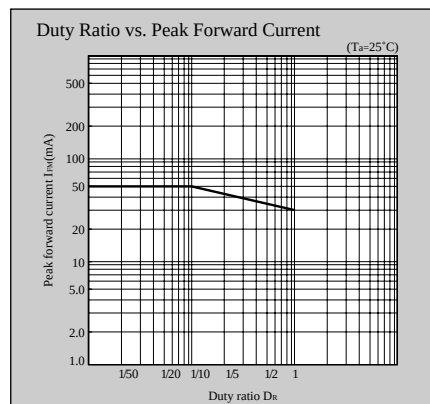
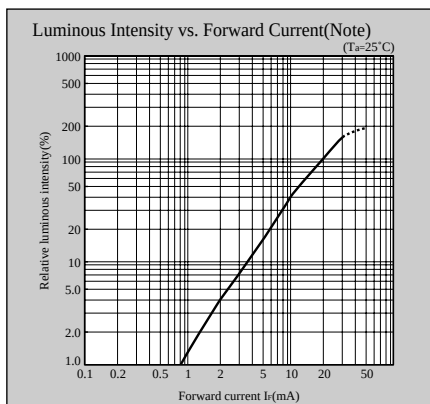
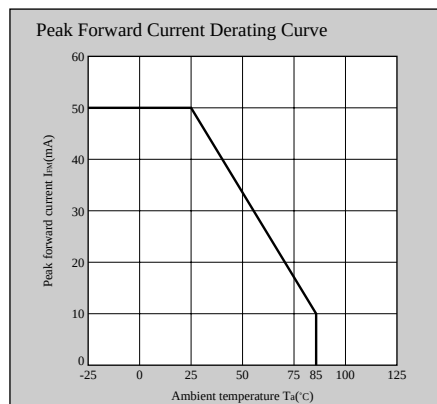
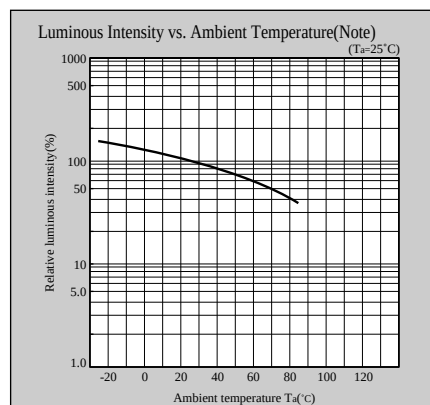
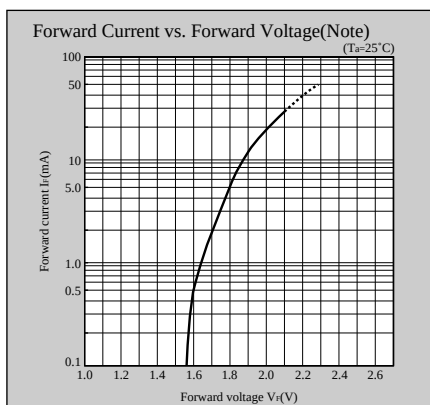
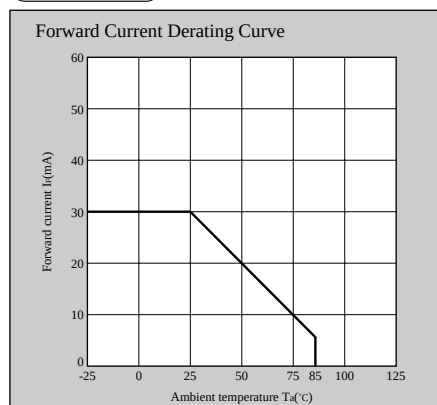
Duty Ratio vs. Peak Forward Current



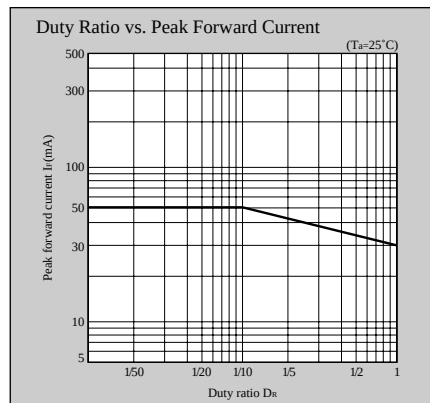
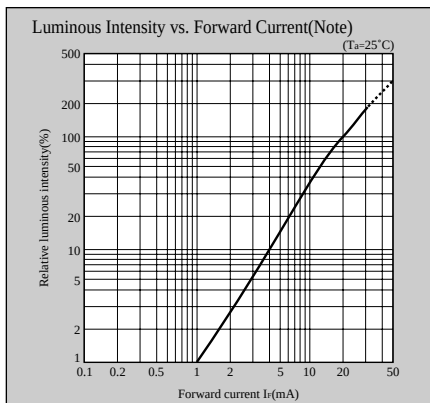
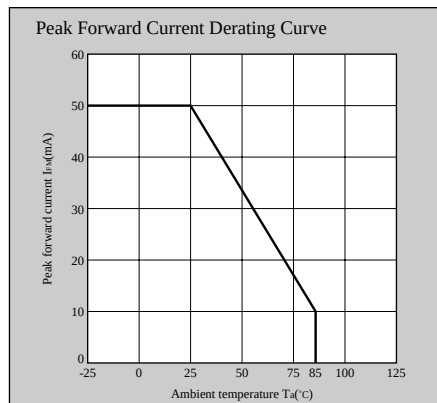
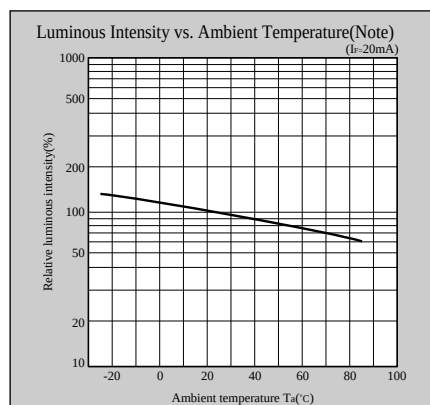
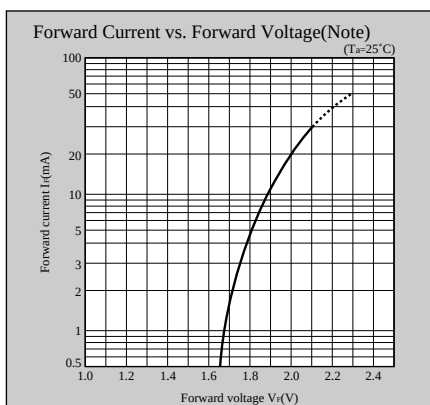
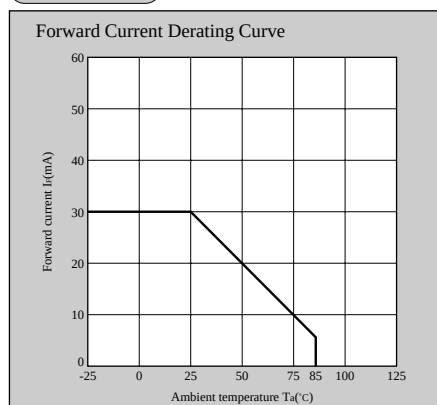
Note) Characteristics shown in diagrams are typical values. (not assurance value)

LED Lamp Characteristics Diagrams

HD,D series



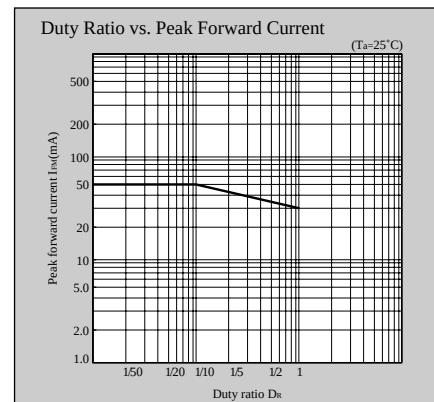
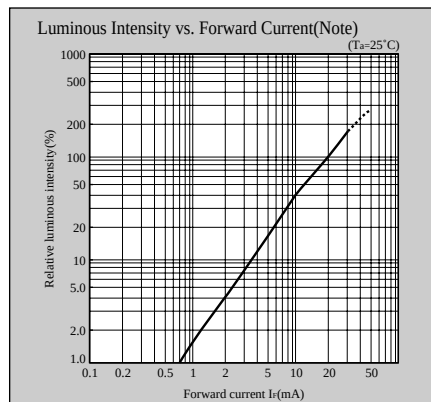
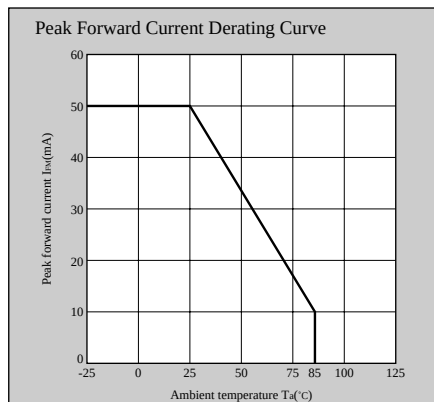
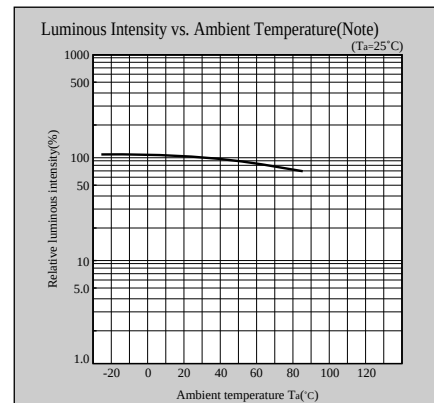
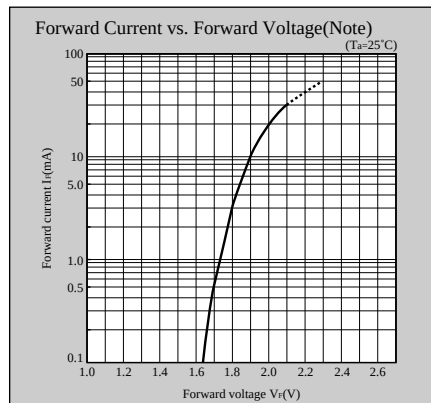
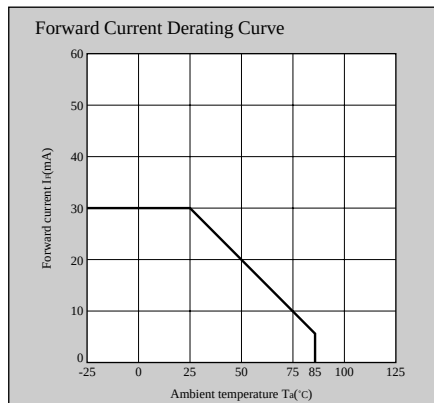
HS,S series



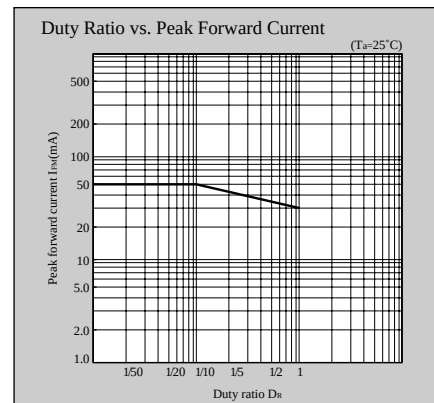
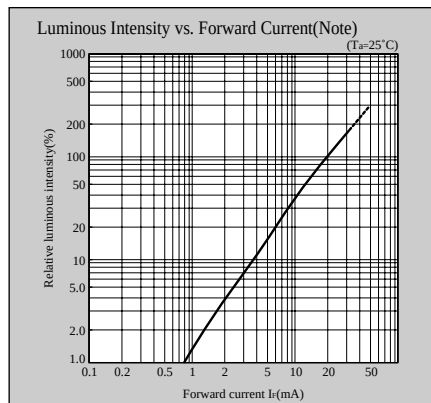
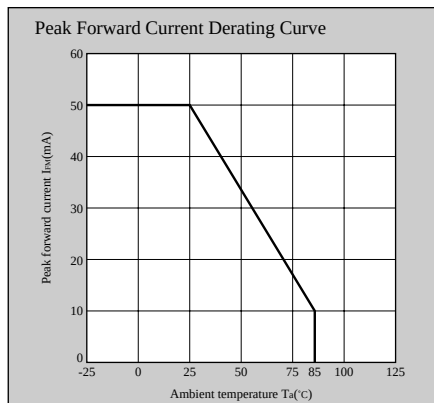
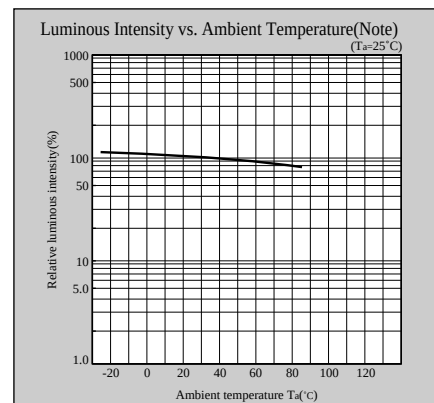
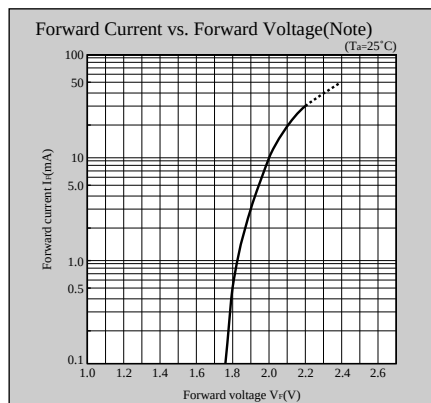
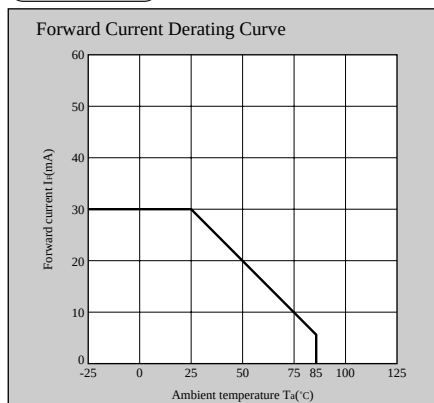
Note) Characteristics shown in diagrams are typical values. (not assurance value)

LED Lamp Characteristics Diagrams

HY,H series



EG,E series



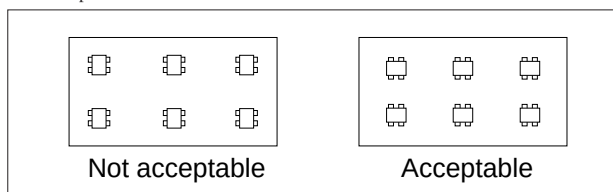
Note) Characteristics shown in diagrams are typical values. (not assurance value)

General Description of Light Emitting Diodes

E: Chip LED Device Type

■ Mounting to a PWB

Design the product so that the devices will not be mounted in the same direction as the warp of the PWB.

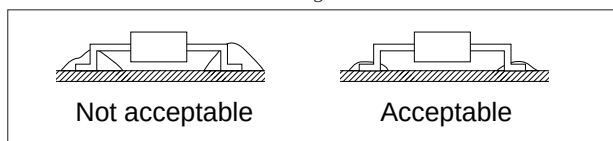


■ Soldering Conditions

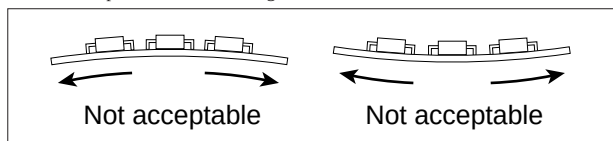
Solder the lead pins under the following conditions.

Type of Soldering	Conditions
1. Manual soldering	300°C ± 5°C within 5 seconds
2. Reflow soldering	Preheating 100°C to 150°C within 2 minutes Soldering 245°C ± 5°C within 5 seconds Gradual cooling (Avoid quenching)

- In manual soldering, do not move the lead pins with the soldering edge.
- Avoid applying excessive solder reinforcement.
- In using surface mount type numeric LEDs, please refer to the specification sheet because conditions shall be changed.



- Do not try to correct the position of the devices after soldering.
- Do not warp PWB after soldering.



■ Cleaning

(1) Solvents

The package resin may be penetrated by solvents used in cleaning. Refer to the table below for usable solvents.

Solvent	Usable
Ethyl alcohol	○
Isopropyl alcohol	○
Chlorosen	×
Acetone	×
Trichloroethylene	×

- : Acceptable
 × : Not acceptable

(Notes) ● There is a world-wide movement to restrict the use of chlorofluorocarbon (CFC) based solvents and we recommend that you avoid their use. However, before using a CFC substitute solvent, carefully check that it will not penetrate the package resin.

(2) Cleaning Methods

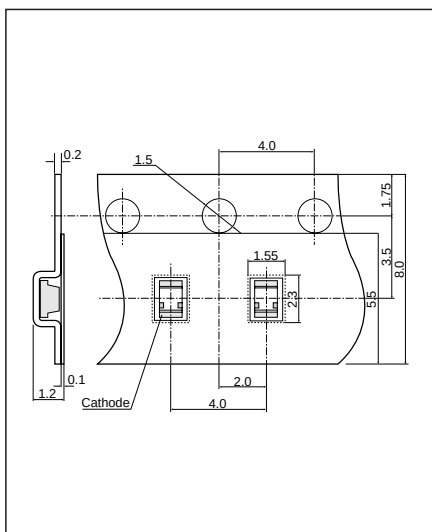
Cleaning Method	Usable	Remarks
Solvent cleaning	○	Immersion up to one minute at room temperature
Ultrasonic cleaning	△	Test the cleaning under actual conditions and check for abnormalities before actual use.

- : Acceptable
 △ : Acceptability depends on device type and conditions

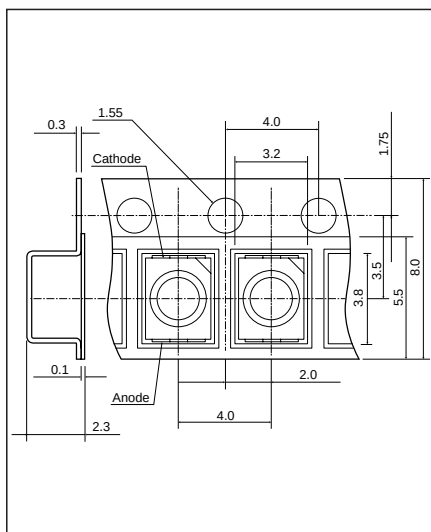
(Notes) ● The affect on the device from ultrasonic cleaning differs depending on the size of the cleaning bath, ultrasonic output, duration, board size and device mounting method. Test the cleaning method under actual conditions and check for abnormalities before actual use.

- Please contact our representative before using a cleaning solvent or method not given above.
- Since the device is very small, it may be damaged by excessive stress. So, pay special attention to the transport method and handling.

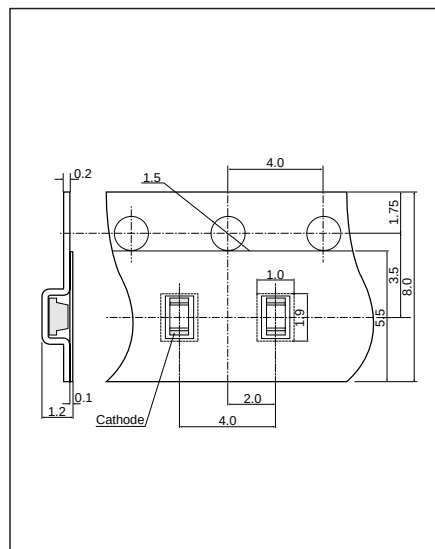
■ Leadless Chip LED(Unit : mm)



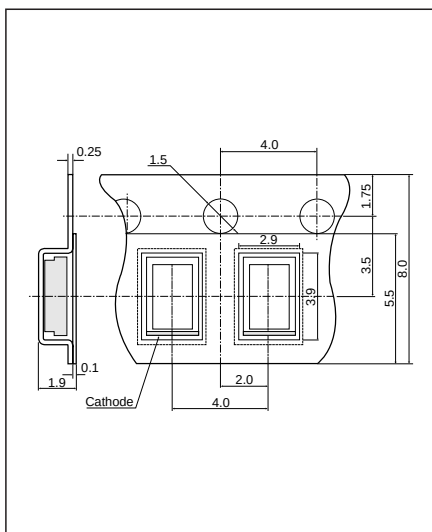
LT1□40A series 4 000 pcs. /reel



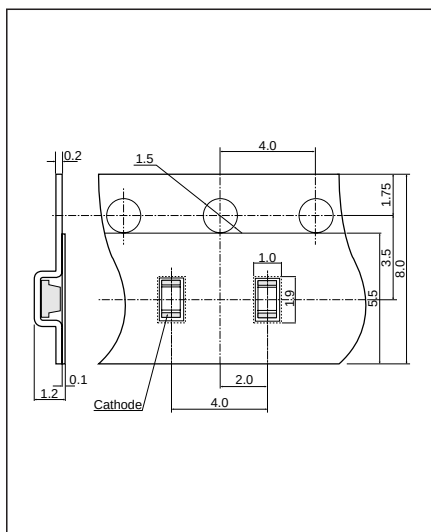
LT1Z□95 series



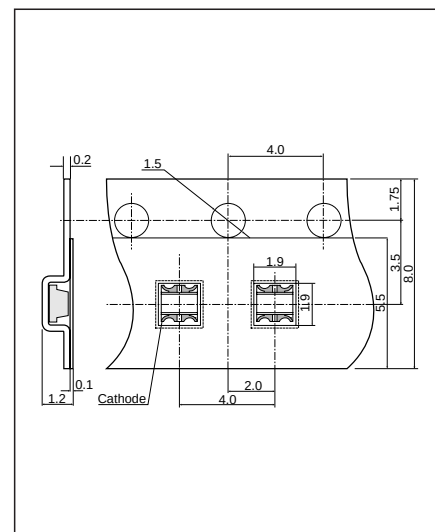
LT1□67A series 4 000 pcs. /reel



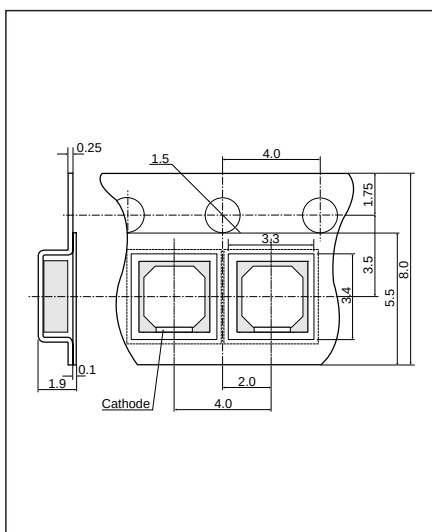
LT1□90A series 3 000 pcs. / reel



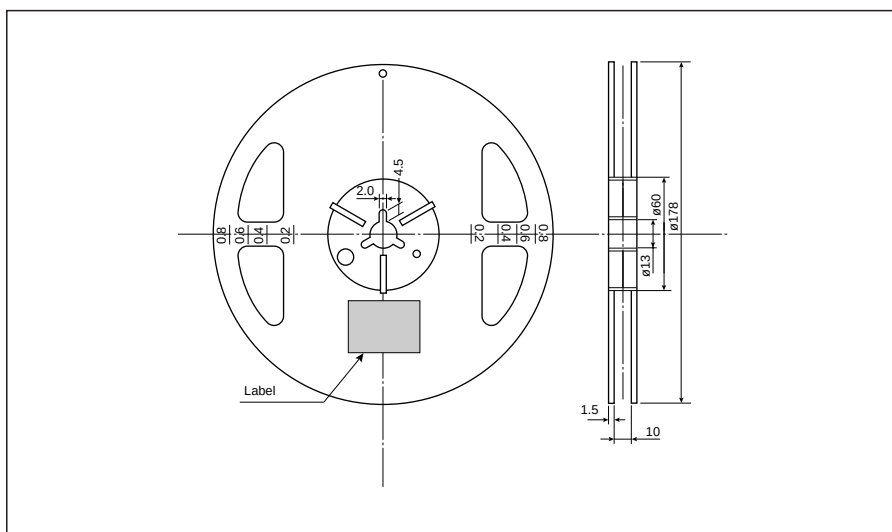
LT1□97A series 5 000 pcs. / reel



LT1□□67A series/LT1W67A 4 000 pcs. /reel



LT1□□90A series 3 000 pcs. / reel



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