Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

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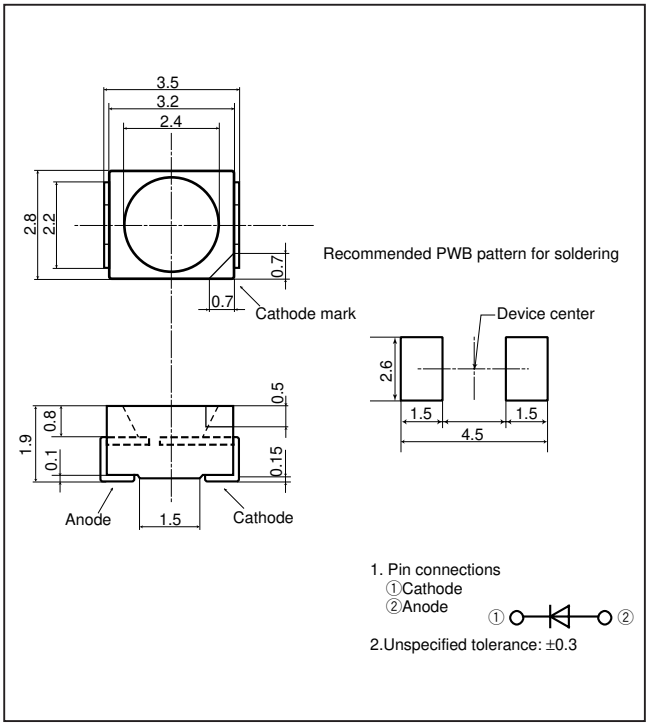
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

GM5❑❑95200A series

3528 Size, 1.9mm Thickness, Leadless Chip LED

■ Outline Dimensions

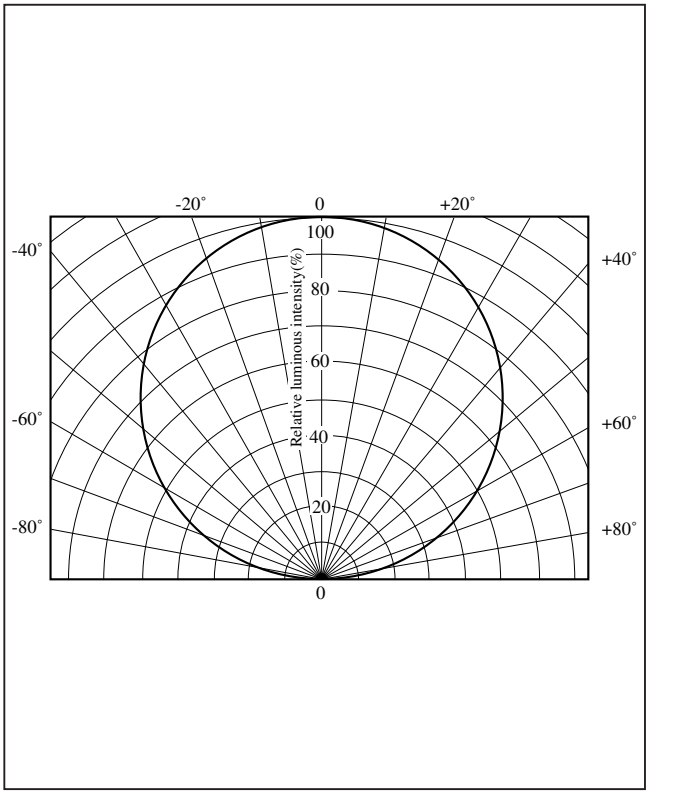
(Unit : mm)



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

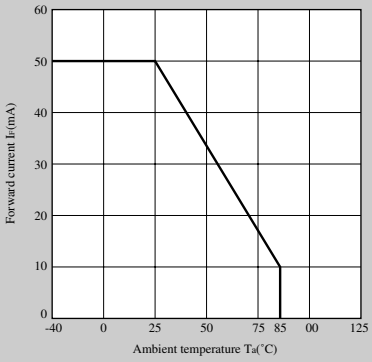
(I_F=20mA,T_a=25˚C)

Lens type	Model No.	Forward voltage V_F(V)		Peak emission wavelength λ_P(nm)	Luminous intensity I_V(mcd)	Spectrum radiation bandwidth $\Delta\lambda$(nm)	Reverse current		Terminal capacitance		Page for characteristics diagrams
		TYP	MAX	TYP	TYP	TYP	I_R(μA) 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

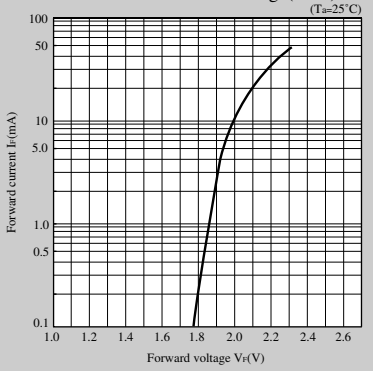
LED Lamp Characteristics Diagrams

ZG series

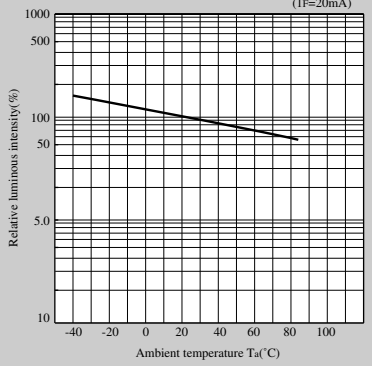
Forward Current Derating Curve



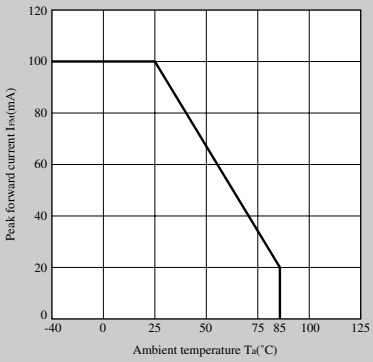
Forward Current vs. Forward Voltage(Note)



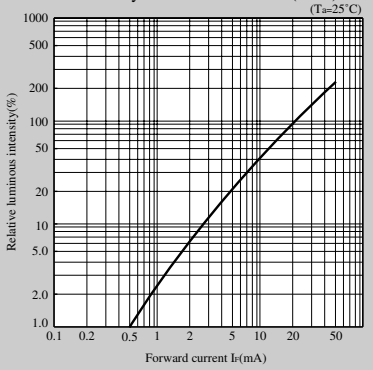
Luminous Intensity vs. Ambient Temperature(Note)



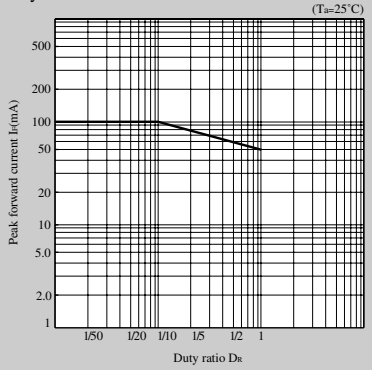
Peak Forward Current Derating Curve



Luminous Intensity vs. Forward Current(Note)

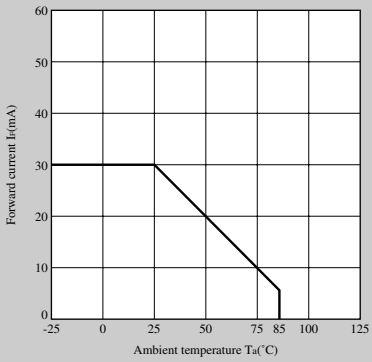


Duty Ratio vs. Peak Forward Current

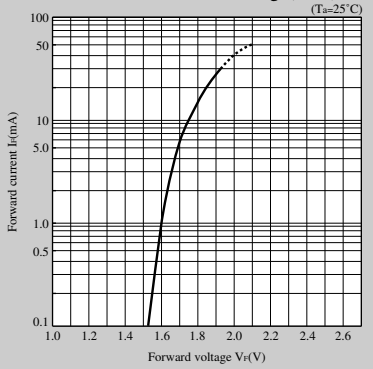


UR,U series

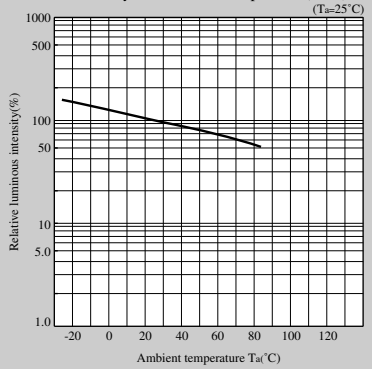
Forward Current Derating Curve



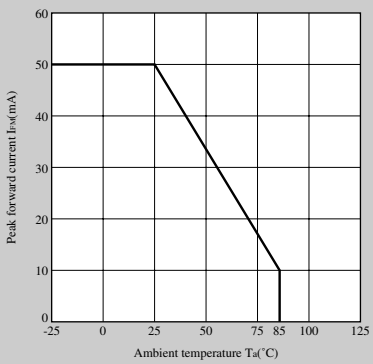
Forward Current vs. Forward Voltage(Note)



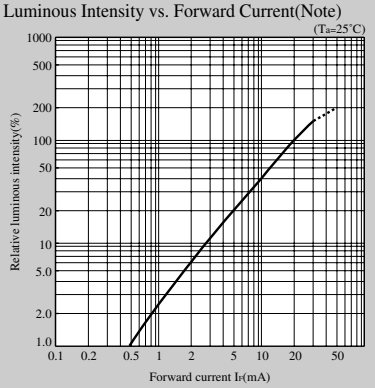
Luminous Intensity vs. Ambient Temperature(Note)



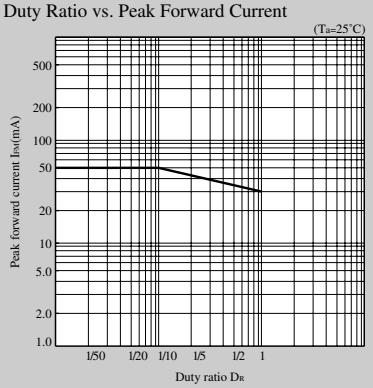
Peak Forward Current Derating Curve



Luminous Intensity vs. Forward Current(Note)



Duty Ratio vs. Peak Forward Current

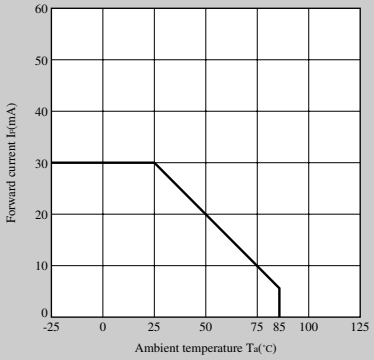


Note)Characteristics shown in diagrams are typical values. (not assurance value)

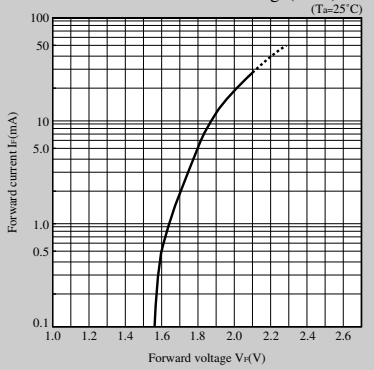
LED Lamp Characteristics Diagrams

HD,D series

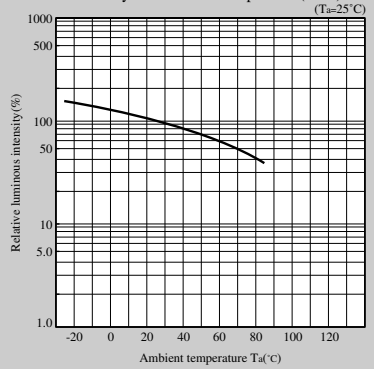
Forward Current Derating Curve



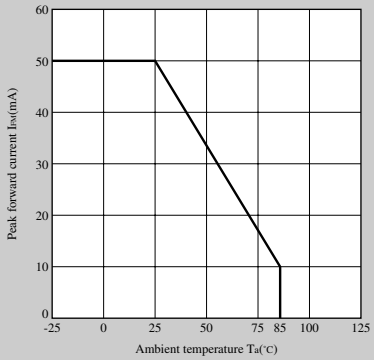
Forward Current vs. Forward Voltage(Note)



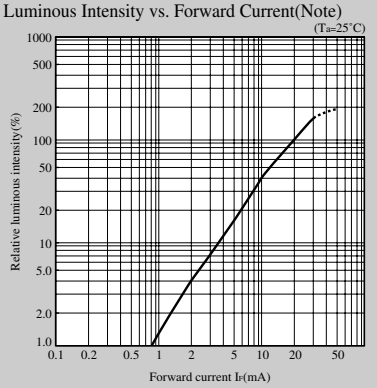
Luminous Intensity vs. Ambient Temperature(Note)



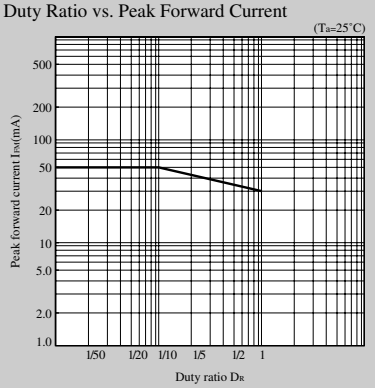
Peak Forward Current Derating Curve



Luminous Intensity vs. Forward Current(Note)

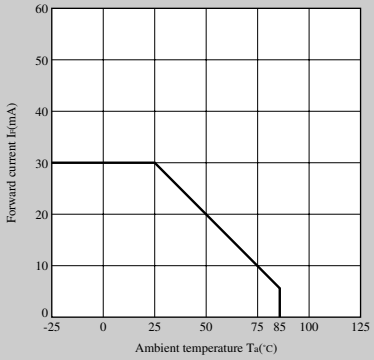


Duty Ratio vs. Peak Forward Current

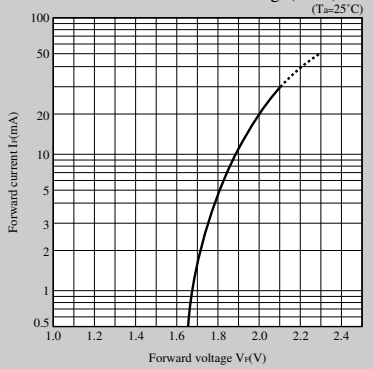


HS,S series

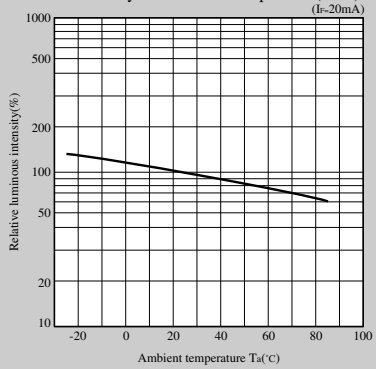
Forward Current Derating Curve



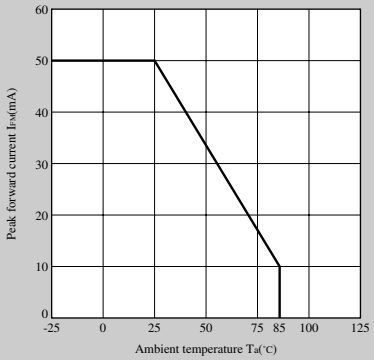
Forward Current vs. Forward Voltage(Note)



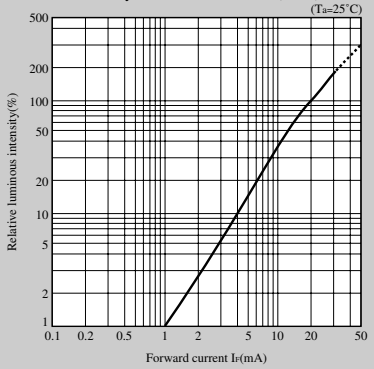
Luminous Intensity vs. Ambient Temperature(Note)



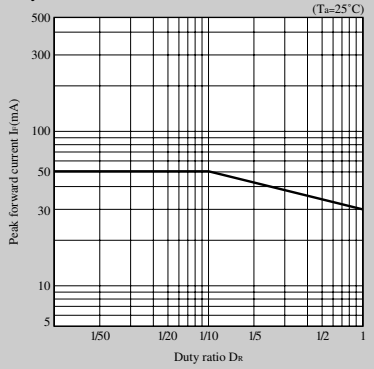
Peak Forward Current Derating Curve



Luminous Intensity vs. Forward Current(Note)



Duty Ratio vs. Peak Forward Current

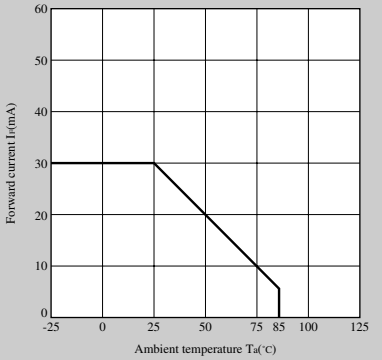


Note)Characteristics shown in diagrams are typical values. (not assurance value)

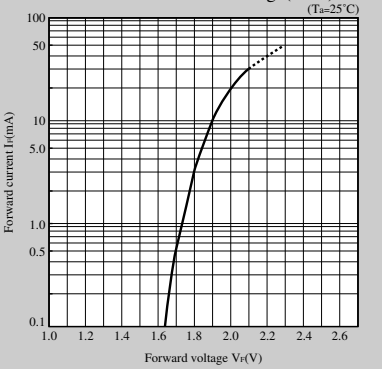
LED Lamp Characteristics Diagrams

HY,H series

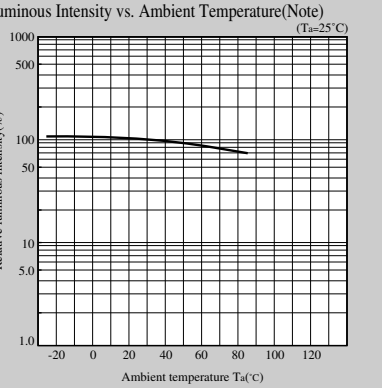
Forward Current Derating Curve



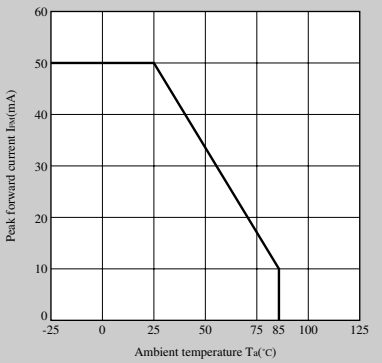
Forward Current vs. Forward Voltage(Note)



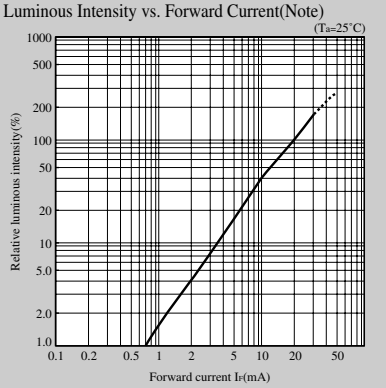
Luminous Intensity vs. Ambient Temperature(Note)



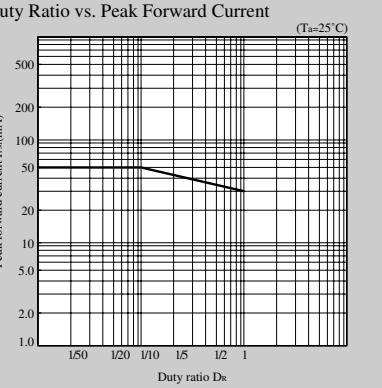
Peak Forward Current Derating Curve



Luminous Intensity vs. Forward Current(Note)

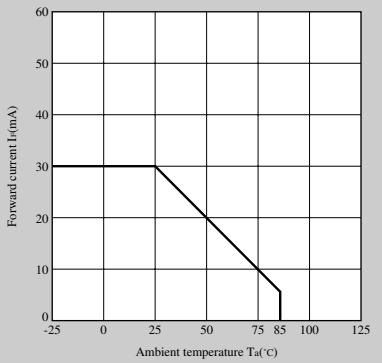


Duty Ratio vs. Peak Forward Current

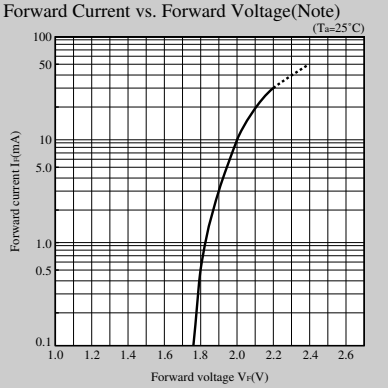


EG,E series

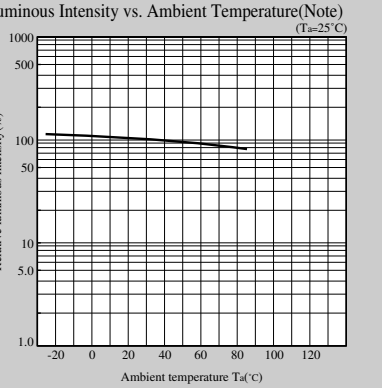
Forward Current Derating Curve



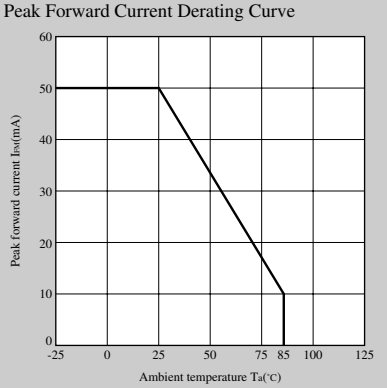
Forward Current vs. Forward Voltage(Note)



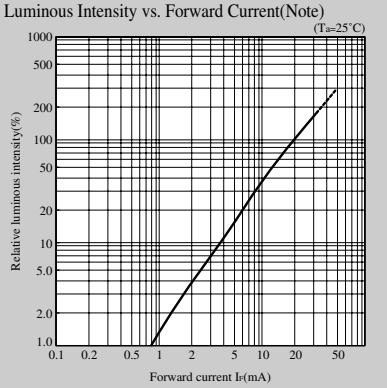
Luminous Intensity vs. Ambient Temperature(Note)



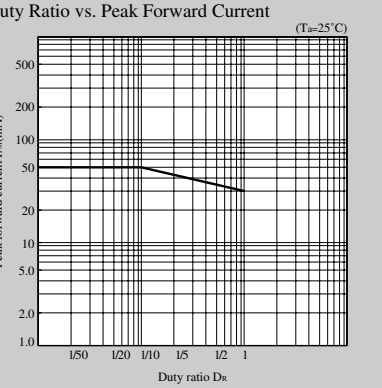
Peak Forward Current Derating Curve



Luminous Intensity vs. Forward Current(Note)



Duty Ratio vs. Peak Forward Current

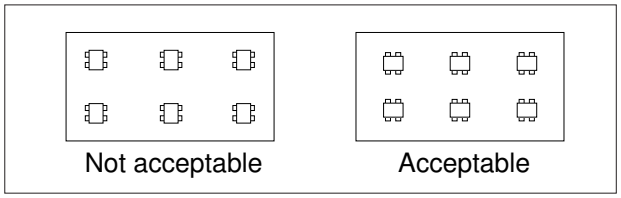


Note)Characteristics shown in diagrams are typical values. (not assurance value)

E: Chip LED Device Type

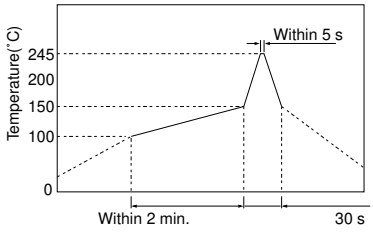
■ Mounting to a PWB

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

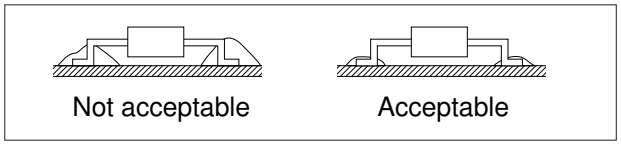


■ Soldering Conditions

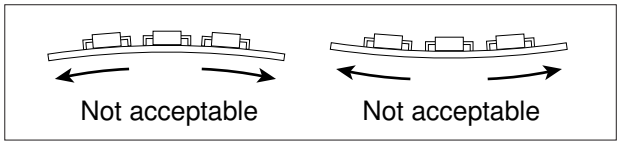
Solder the lead pins under the following conditions.

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 chrolofluorocarbon (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.

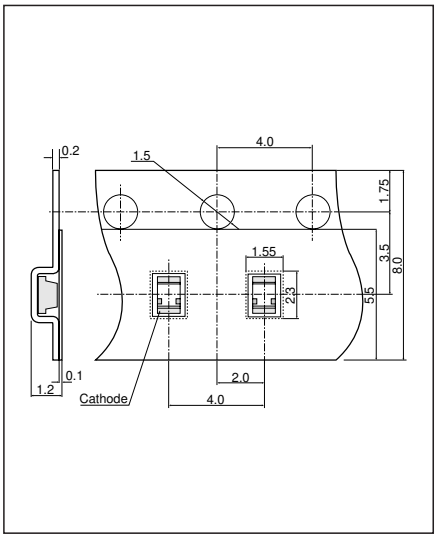
(2) Cleaning Methods

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.

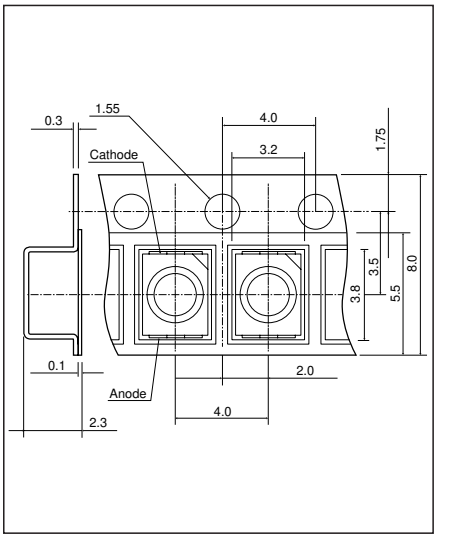
○ : Acceptable
△ : Acceptability depends on device type and conditions

(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.

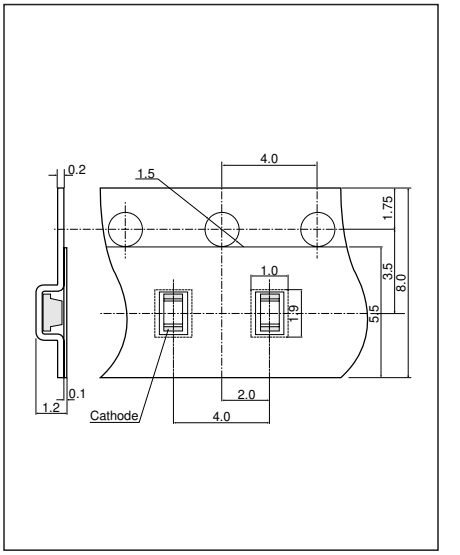
■ Leadless Chip LED(Unit : mm)



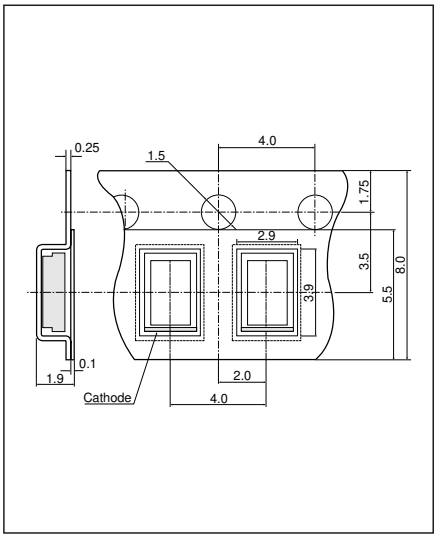
LT1❑40A series 4 000 pcs. /reel



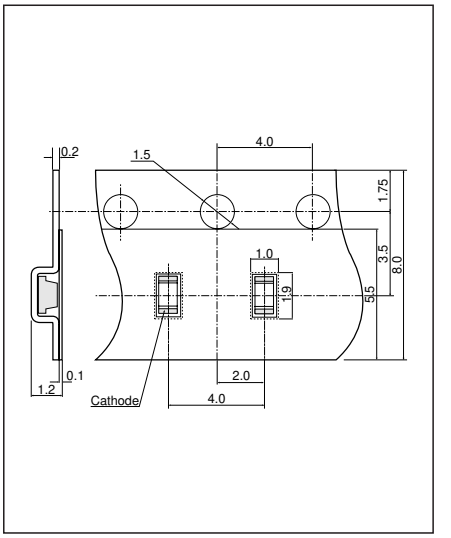
LT1Z❑95 series



LT1❑67A series 4 000 pcs. /reel



LT1❑90A series 3 000 pcs. / reel



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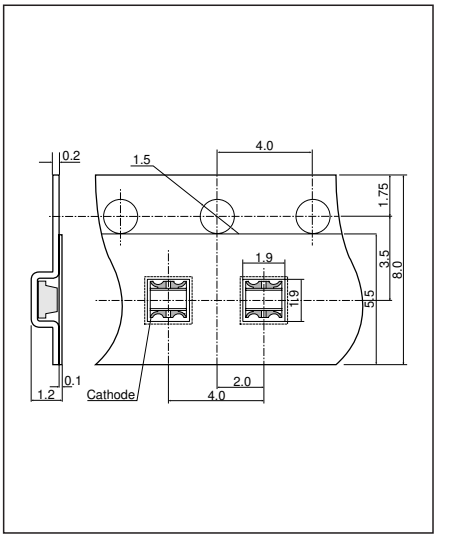

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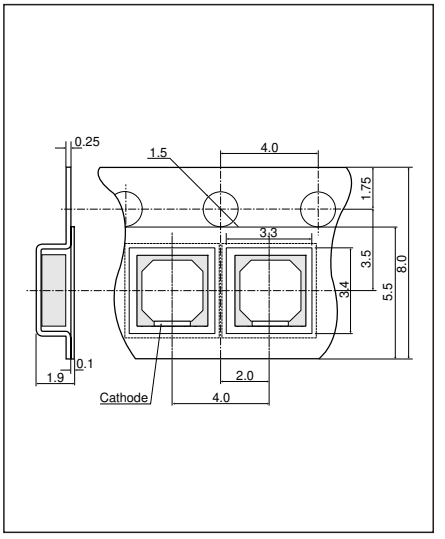

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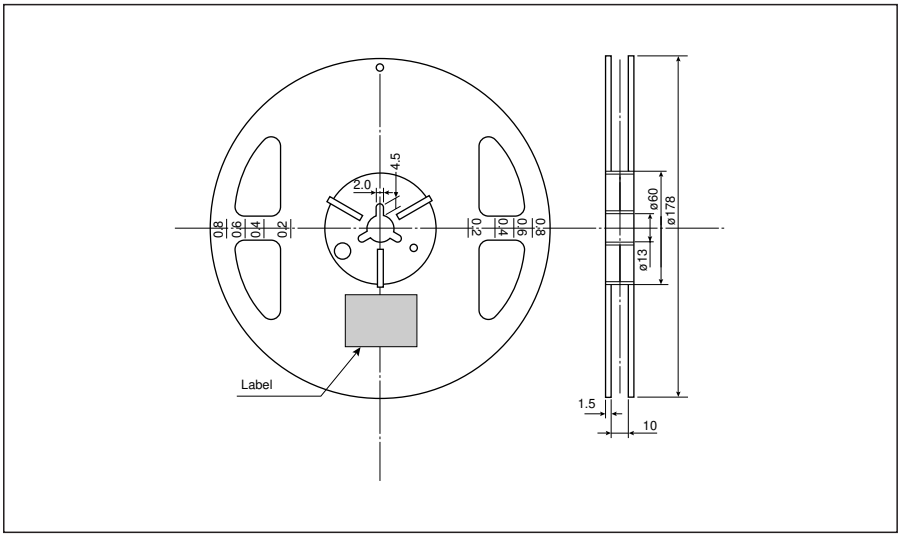

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- Telecommunication equipment [terminal]
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- Alarm equipment
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