

**Pb-free
HEAT**



GSPW11□1JTE Series

High Efficiency , Power LED

Features

Package	Ceramic LCC Type Outer Dimension 2.5 x 1.5 x 0.7mm (L x W x H)
Product features	<ul style="list-style-type: none"> • 78lm/W(5000K,Ra70) of environmentally friendly like CO₂ reduction, white color source. • Wide variety of color temperatures correspond to general lighting uses • According to ANSI standard. • 2 type color rendering index variation.(Ra:85, 70) • Storage temperature :-40°C~100°C • Operating temperature :-40°C~ 85°C • Lead-free soldering compatible • RoHS compliant
Color temperature	8 type color temperature variation. 6,500K, 5,700K, 5,000K, 4,500K, 4,000K, 3,500K, 3,000K, 2,700K
Half Intensity Angle	115 deg.
Die materials	InGaN
Rank grouping parameter	Sorted by luminous flux and chromaticity per rank taping
Assembly method	Auto pick & place machine (Auto Mounter)
Soldering methods	Recommendation of Reflow soldering / Manual Soldering
Taping and reel	3,000pcs per reel in a 8mm width tape. (Standard) Reel diameter: ϕ 180mm
ESD	1kV (HBM)

Recommended Applications

- Residential lighting, Office lighting, Plant lighting, Store lighting, and Special lighting etc.

Color , Luminous Flux and CRI

(Ta=25°C,IF=80mA)

Part No.	Emitted Color	Lens Color	CCT TYP.	Chromaticity Coordinates TYP.		CRI(Ra) TYP.	Luminous Flux ϕ_v (lm)	
				x	y		MIN.	TYP.
GSPW1141JTE-65X	Daylight	Pale Yellow	6,500K	0.312	0.328	70	12	20
GSPW1151JTE-65Y		Pale Orange						
GSPW1141JTE-57X		Pale Yellow	5,700K	0.329	0.342	70	12	20
GSPW1151JTE-57Y		Pale Orange						
GSPW1141JTE-50X	Natural White	Pale Yellow	5,000K	0.345	0.355	70	12	20
GSPW1151JTE-50Y		85						
GSPW1151JTE-45X	White		Pale Orange	4,500K	0.361	0.366	70	10
GSPW1151JTE-45Y		85						
GSPW1151JTE-40X				4,000K	0.382	0.380	70	10
GSPW1151JTE-40Y		85						
GSPW1151JTE-35X	Light Warm White		3,500K	0.407	0.392	70	10	17
GSPW1151JTE-35Y		85						
GSPW1151JTE-30X	Warm White		Pale Orange	3,000K	0.434	0.403	70	10
GSPW1151JTE-30Y		85						
GSPW1151JTE-27X				2,700K	0.458	0.410	70	10
GSPW1151JTE-27Y		85						

Absolute Maximum Ratings

(Ta=25°C)

Item	Symbol	Ratings	Unit
Power Dissipation	P_d	600	mW
Continuous Forward Current ^{※1}	I_F	150	mA
Repetitive Peak Forward Current ^{※2}	I_{FRM}	200	mA
Allowable Reverse Current	I_R	85	mA
ESD(HBM) ^{※3}	ESD	1,000	V
Junction Temperature	T_j	135	°C
Solder Temperature ^{※4} (Reflow soldering)	T_{sld}	260	°C
Operating Temperature ^{※5}	T_{opr}	-40~+85	°C
Storage Temperature ^{※5}	T_{stg}	-40~+100	°C

※1 Please check junction temperature $T_j=135^{\circ}\text{C}$ is not exceeded when you set the current.

※2 I_{FRM} Measurement condition / Pulse Width $\leq 1\text{ms.}$, Duty $\leq 1/10$

※3 ESD testing method : EIAJ 4701/300(304) (HBM) 1.5k Ω , 100pF

※4 Please refer to the attached sheets soldering conditions.

※5 The range of operating and storage temperature is not taping condition.

Thermal Characteristics

(Ta=25°C)

Item	Symbol	Ratings TYP.	Unit
Thermal Resistance ^{※6} (Junction/ ambient)	$R_{th(j-a)}$	320	°C/W
Thermal Resistance (Junction/ Solder Point)	$R_{th(j-s)}$	135	°C/W
Forward Current Derating ^{※6} (Ta=25°C or higher)	ΔI_F	1.22	mA/°C

※6 $R_{th(j-a)}$ Measurement Condition

- PCB : FR-4(t=1.6mm)
- Soldering Pattern : 3mm²(Recommended Soldering Pattern)

Electro-Optical Characteristics

(Ta=25°C)

Item	Condition	Symbol	Characteristics		Unit
Forward Voltage	I _F =80mA	V _F	MIN.	2.7	V
			TYP.	3.2	
			MAX.	3.8	
Reverse Voltage	I _R =85mA	V _R	MIN.	0.9	V
			MAX.	1.7	
Half Intensity Angle	I _F =80mA	Δθ _x	TYP.	115	deg.
		Δθ _y			

Luminous Flux Rank (Unit : lm)

(Ta=25°C)

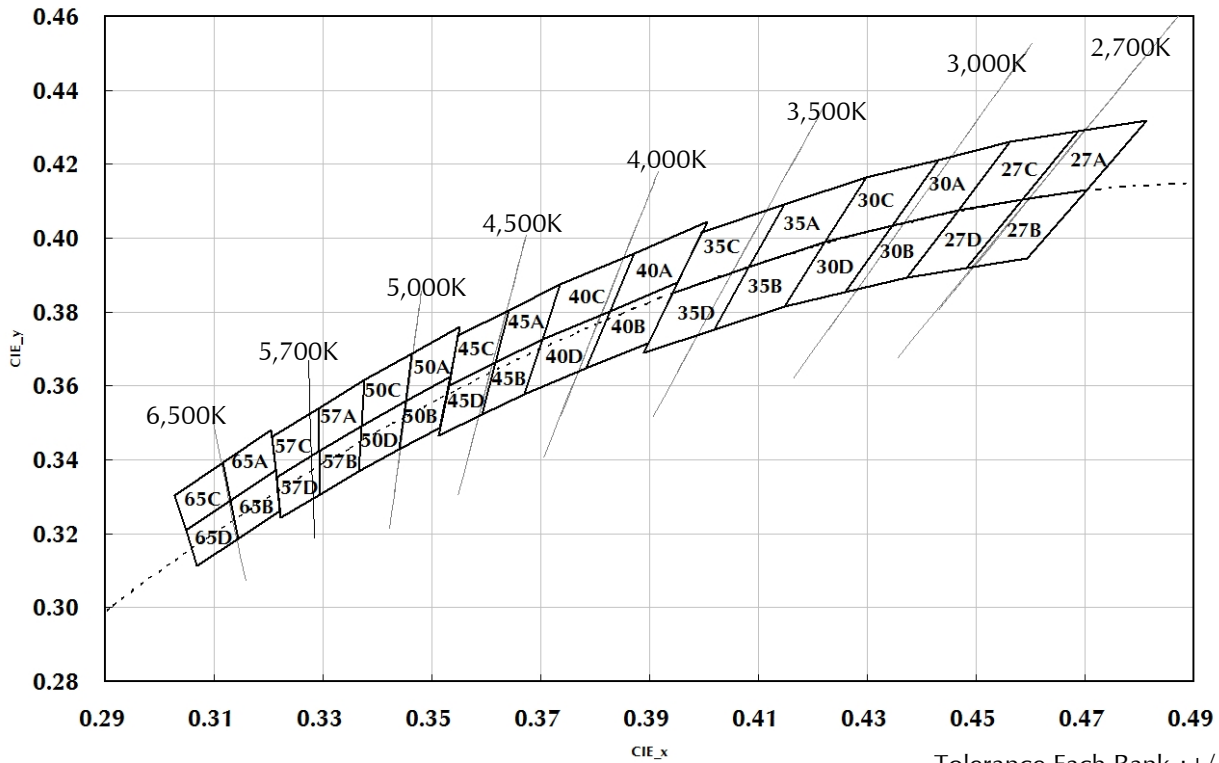
Part No.	AZ	B1	B2	B3	B4	B5	B6	Rank
	8.2	10	12	15	18	22	27	Flux (MIN.)
	10	12	15	18	22	27	33	Flux (MAX.)
GSPW1141JTE-65X								
GSPW1151JTE-65Y								
GSPW1141JTE-57X								
GSPW1151JTE-57Y								
GSPW1141JTE-50X								
GSPW1151JTE-50Y								
GSPW1151JTE-45X								
GSPW1151JTE-45Y								
GSPW1151JTE-40X								
GSPW1151JTE-40Y								
GSPW1151JTE-35X								
GSPW1151JTE-35Y								
GSPW1653JTE-30X								
GSPW1653JTE-30Y								
GSPW1653JTE-27X								
GSPW1653JTE-27Y								

※LEDs shall be "Luminous Flux" sorted put into the following chart and each rank parts shall be packed separately when shipping.

Tolerance Each Rank : +/-10%

Sorting Chart for Chromaticity Coordinates

(Ta=25°C)

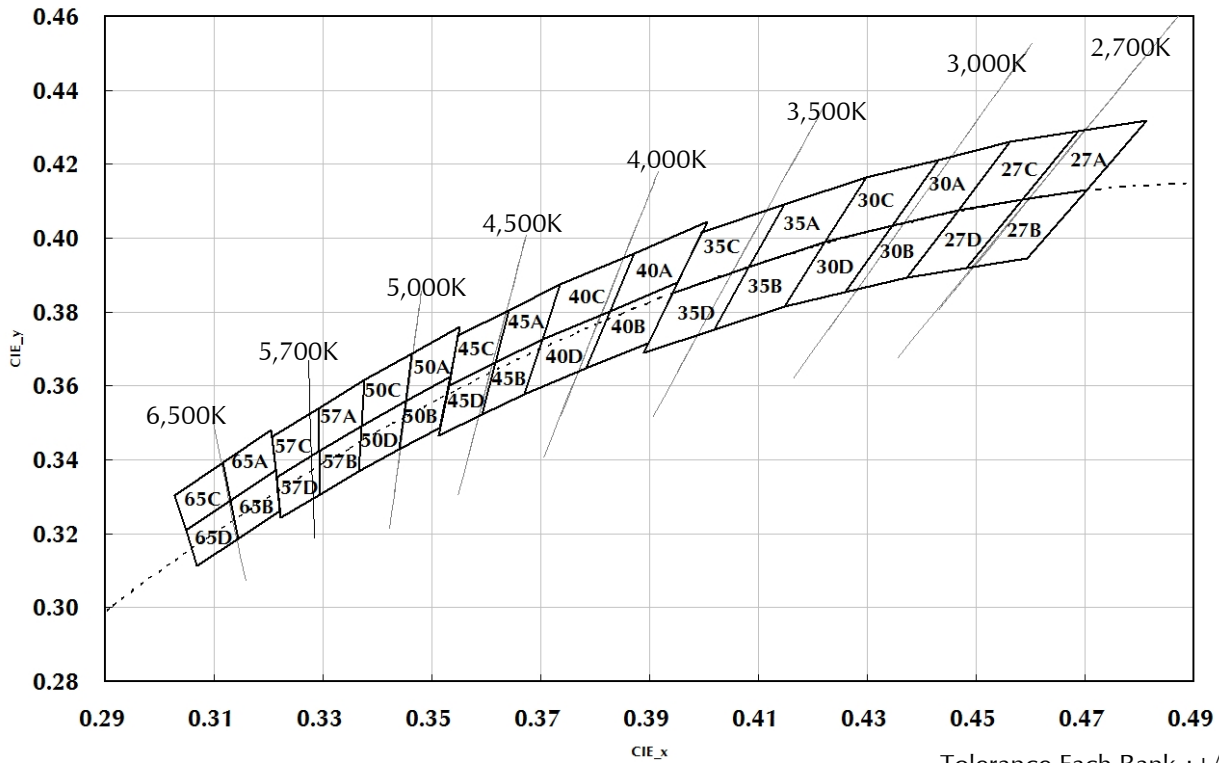


Rank	CCT	ccx	ccy	Rank	CCT	ccx	ccy	Rank	CCT	ccx	ccy	Rank	CCT	ccx	ccy
27A	2700K	0.4813	0.4319	30A	3000K	0.4562	0.4260	35A	3500K	0.4299	0.4165	40A	4000K	0.4006	0.4044
		0.4688	0.4299			0.4431	0.4213			0.4148	0.4090			0.3871	0.3959
		0.4585	0.4104			0.4345	0.4033			0.4083	0.3921			0.3828	0.3803
		0.4703	0.4132			0.4468	0.4077			0.4223	0.3990			0.3952	0.3880
27B	2700K	0.4703	0.4132	30B	3000K	0.4468	0.4077	35B	3500K	0.4223	0.3990	40B	4000K	0.3952	0.3880
		0.4585	0.4104			0.4345	0.4033			0.4083	0.3921			0.3828	0.3803
		0.4483	0.3919			0.4260	0.3854			0.4018	0.3752			0.3784	0.3647
		0.4593	0.3944			0.4373	0.3893			0.4147	0.3814			0.3898	0.3716
27C	2700K	0.4688	0.4290	30C	3000K	0.4431	0.4213	35C	3500K	0.4148	0.4090	40C	4000K	0.3871	0.3959
		0.4562	0.4260			0.4299	0.4165			0.3996	0.4015			0.3736	0.3874
		0.4468	0.4077			0.4223	0.3990			0.3943	0.3853			0.3703	0.3726
		0.4585	0.4104			0.4345	0.4033			0.4083	0.3921			0.3828	0.3803
27D	2700K	0.4585	0.4104	30D	3000K	0.4345	0.4033	35D	3500K	0.4083	0.3921	40D	4000K	0.3828	0.3803
		0.4468	0.4077			0.4223	0.3990			0.3943	0.3853			0.3703	0.3726
		0.4373	0.3893			0.4147	0.3814			0.3889	0.3690			0.3670	0.3578
		0.4483	0.3919			0.4260	0.3854			0.4018	0.3752			0.3784	0.3647

※Please contact our sales concerning rank designation.

Sorting Chart for Chromaticity Coordinates

(Ta=25°C)



Tolerance Each Rank : +/-0.02

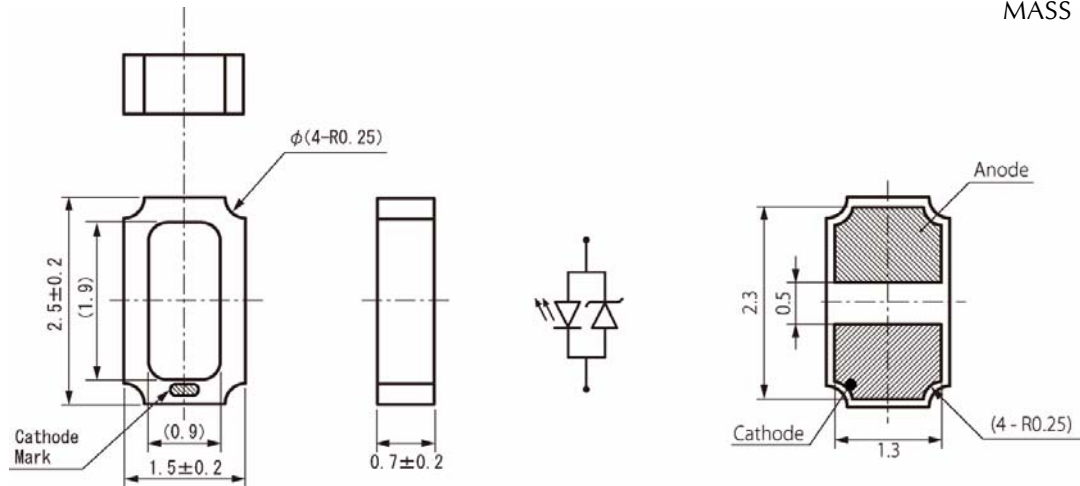
Rank	CCT	ccx	ccy	Rank	CCT	ccx	ccy	Rank	CCT	ccx	ccy	Rank	CCT	ccx	ccy
45A	4500K	0.3736	0.3874	50A	5000K	0.3551	0.3760	57A	5700K	0.3376	0.3616	65A	6500K	0.3205	0.3481
		0.3642	0.3805			0.3464	0.3688			0.3292	0.3539			0.3117	0.3393
		0.3617	0.3663			0.3452	0.3558			0.3293	0.3423			0.3131	0.3290
		0.3703	0.3726			0.3533	0.3624			0.3371	0.3493			0.3213	0.3371
45B	4500K	0.3703	0.3726	50B	5000K	0.3533	0.3624	57B	5700K	0.3371	0.3493	65B	6500K	0.3213	0.3371
		0.3617	0.3663			0.3452	0.3558			0.3293	0.3423			0.3131	0.3290
		0.3593	0.3522			0.3441	0.3428			0.3294	0.3306			0.3145	0.3187
		0.3670	0.3578			0.3515	0.3487			0.3366	0.3369			0.3221	0.3261
45C	4500K	0.3642	0.3805	50C	5000K	0.3464	0.3688	57C	5700K	0.3292	0.3539	65C	6500K	0.3117	0.3393
		0.3548	0.3736			0.3376	0.3616			0.3207	0.3462			0.3028	0.3304
		0.3532	0.3601			0.3371	0.3493			0.3215	0.3353			0.3048	0.3209
		0.3617	0.3663			0.3452	0.3558			0.3293	0.3423			0.3131	0.3290
45D	4500K	0.3617	0.3663	50D	5000K	0.3452	0.3558	57D	5700K	0.3293	0.3423	65D	6500K	0.3131	0.3290
		0.3532	0.3601			0.3371	0.3493			0.3215	0.3353			0.3048	0.3209
		0.3512	0.3465			0.3366	0.3369			0.3222	0.3243			0.3068	0.3113
		0.3593	0.3522			0.3441	0.3428			0.3294	0.3306			0.3145	0.3187

※Please contact our sales concerning rank designation.

Package Dimensions

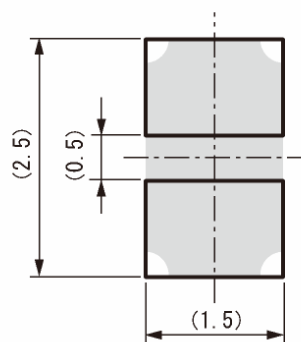
(Unit : mm)

MASS : (6.9)mg



Recommended Soldering Pattern (Reflow)

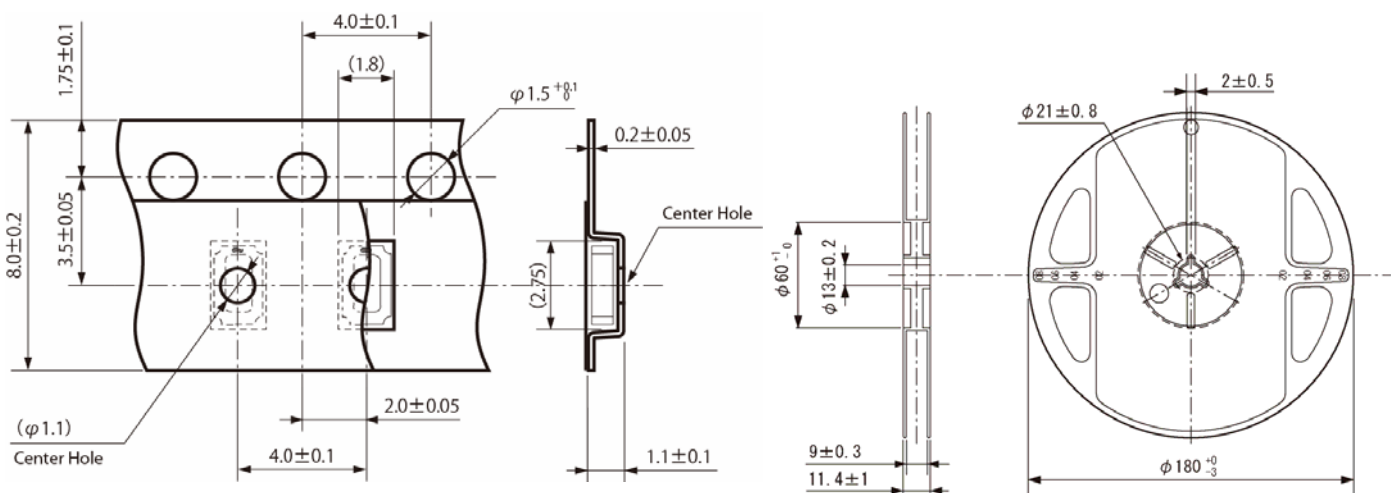
(Unit : mm)



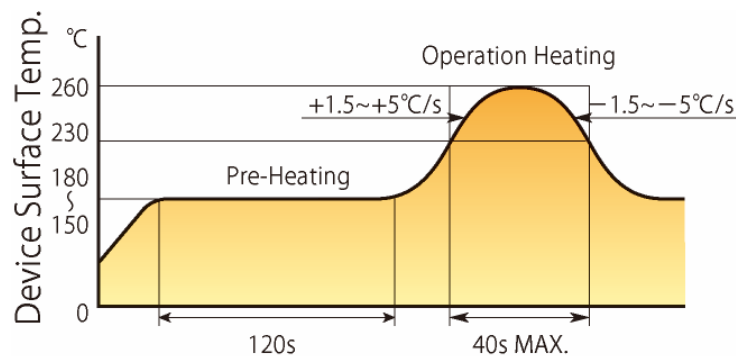
Taping Specification

(Unit : mm)

※Quantity : 3,000pcs/reel(standard)



Reflow Soldering Conditions



- 1) The above profile temperature gives the maximum temperature of the LED resin surface. Please set the temperature so as to avoid exceeding this range.
- 2) Total times of reflow soldering process shall be no more than 2 times. When the second reflow soldering process is performed, intervals between the first and second reflow should be short as possible (while allowing some time for the component to return to room temperature after the first reflow) in order to prevent the LED resin from absorbing moisture.

Manual Soldering Condition

Iron tip temp	350°C (MAX)
Soldering time and frequency	3s (MAX) 1 time (MAX)

Reliability Testing Result

Reliability Testing Result	Applicable Standard	Testing Conditions	Duration	Failure
Room Temp. Operating Life	EIAJ ED-4701/100(101)	Ta = 25°C, If = Maximum Rated Current	1,000 h	0/20
High Temp. Operating Life	EIAJ ED-4701/100(101)	Ta = Maximum Rated Operating Temp., If = 80mA	1,000 h	0/20
Low Temp. Operating Life	EIAJ ED-4701/100(101)	Ta = -40°C, If = Maximum Rated Current	1,000 h	0/20
Wet High Temp. Operating Life	EIAJ ED-4701/100(102)	Ta = 60°C, 90%, If = 80mA	1,000 h	0/20
Temperature Cycling	EIAJ ED-4701/100(105)	Ta = -40°C ~ Maximum Rated Storage Temp. (each 15min.)	1,000 cycles	0/20
Resistance to Soldering Heat	EIAJ ED-4701/300(301)	Preheating : 150 ~ 180°C(120s Max.) Operation Heating : 260°C	2 times	0/20

Failure Criteria

Items	Symbols	Conditions	Failure criteria
Luminous Intensity	Iv	If=80mA	Testing Min. Value < Spec. Min. Value x 0.5
Forward Voltage	Vf	If=80mA	Testing Max. Value ≥ Spec. Max. Value x 1.2
Cosmetic Appearance	-	-	Occurrence of notable decoloration, deformation and cracking

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