

WR5005S

Single Color ϕ5 Round Shape Type

Features

Package	ϕ5 Round shape type, Water Clear epoxy
Product features	• Outer Dimension ϕ5 Round shape type • Operation temperature range. Storage Temperature :-40℃～100℃ Operating Temperature :-40℃～85℃ • Lead–free soldering compatible • RoHS compliant
Dominant wavelength	637 nm
Half Intensity Angle	45 deg.
Die materials	GaAlAs
Rank grouping parameter	Sorted by luminous intensity per rank taping
Soldering methods	TTW (Through The Wave) soldering and manual soldering
ESD	More than 1kV(HBM)
Packing	Bulk : 200pcs(MIN.)

Recommended Applications

Amusement Equipment, Electric Household Appliances, OA/FA, Other General Applications

WR5005S

Single Color ϕ5 Round Shape Type

Color and Luminous Intensity

(Ta=25℃)

Part No.	Material	Emitted Color	Lens Color		Dominant Wavelength λd (nm)		Luminous Intensity Iv (mcd)		
					TYP.	I_F(mA)	MIN.	TYP.	I_F(mA)
WR5005S	GaAlAs	Red	Water Clear	Clear	637	20	200	300	20

Absolute Maximum Ratings

(Ta=25℃)

Item	Symbol	Absolute Maximum Ratings	Unit
Power Dissipation	P_d	125	mW
Forward Current	I_F	50	mA
Pulse Forward Current ※1	I_{FRM}	200	mA
Derating (Ta=25℃ or higher)	ΔI_F	0.67	mA/℃
Reverse Voltage	V_R	5	V
Operating Temperature	T_{opr}	-40~+85	℃
Storage Temperature	T_{stg}	-40~+100	℃

※1 I_{FRM} Measurement condition : Pulse Width≦1ms., Duty≦1/20.

Electro-Optical Characteristics

(Ta=25℃)

Item	Conditions	Symbol	Characteristics		Unit
Forward Voltage	I_F=20mA	V_F	TYP.	1.9	V
			MAX.	2.4	
Reverse Current	V_R=4V	I_R	MAX.	100	μA
Peak Wavelength	I_F=20mA	λ_p	TYP.	655	nm
Dominant Wavelength	I_F=20mA	λ_d	TYP.	637	nm
Spectral Line Half Width	I_F=20mA	$\Delta\lambda$	TYP.	25	nm
Half Intensity Angle	I_F=20mA	$2\theta_{1/2}$	TYP.	45	deg.

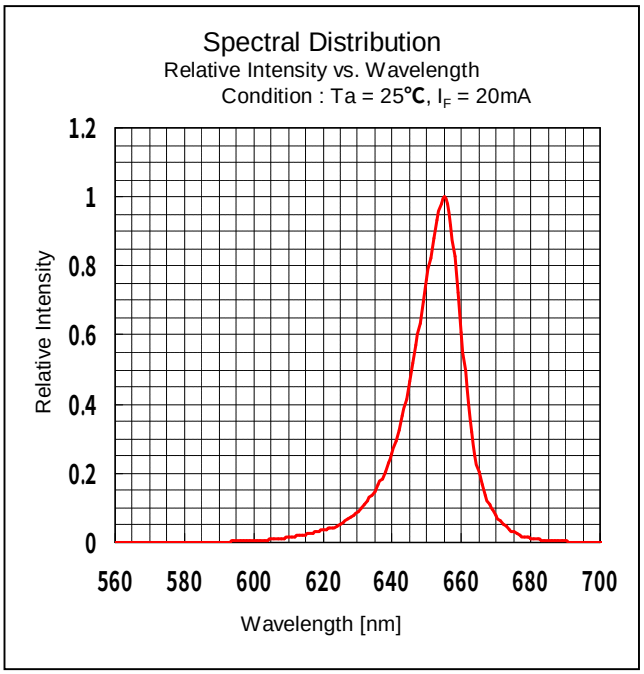
Luminous Intensity Rank

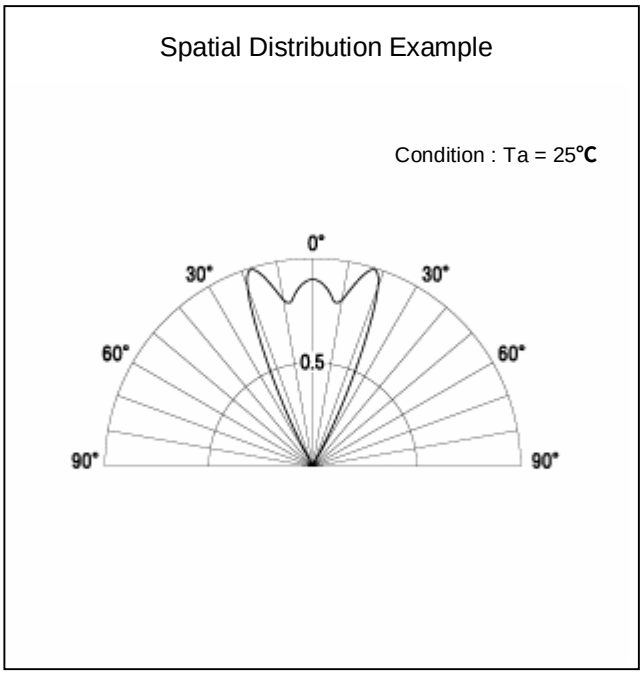
(Ta=25℃)

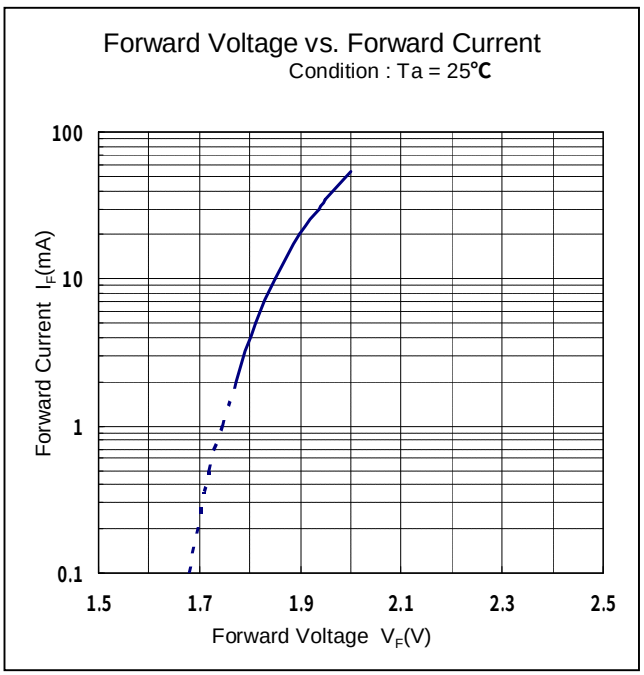
Rank	I_V (mcd)		Condition
	MIN.	MAX.	
A	200	400	I_F = 20mA
B	280	560	
C	400	800	
D	560	1,120	
E	800	-	

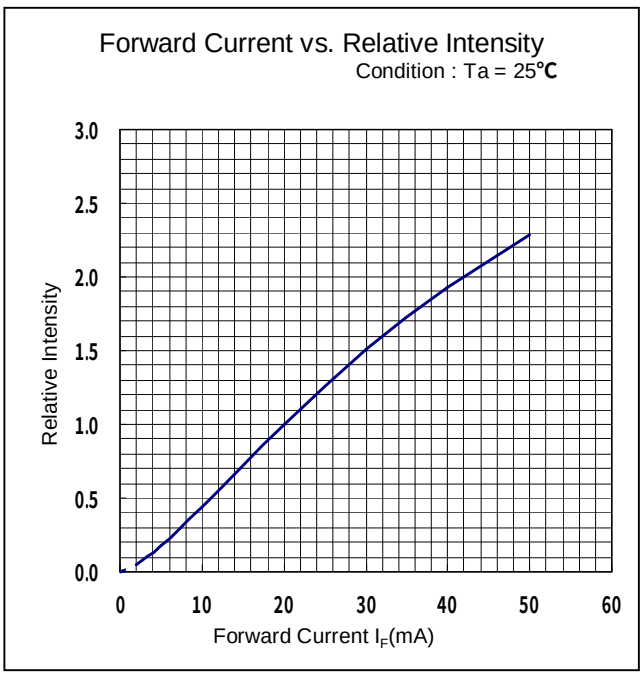
※Please contact our sales staff concerning rank designation.

Technical Data

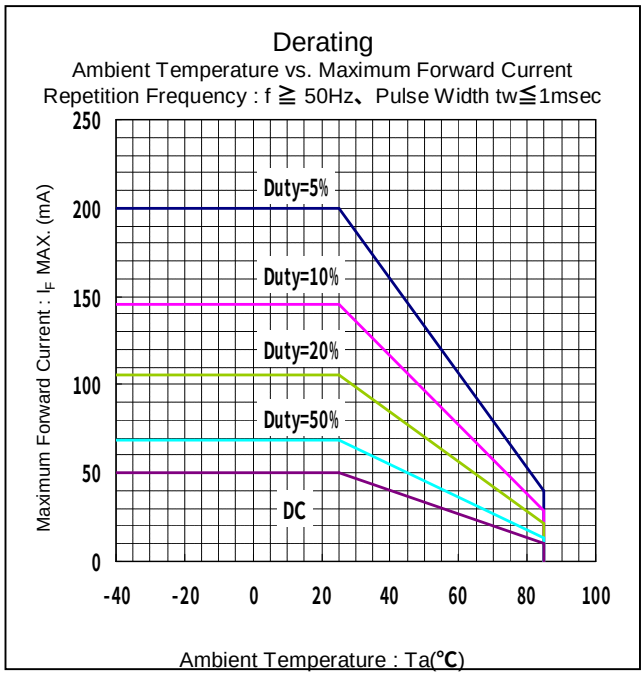


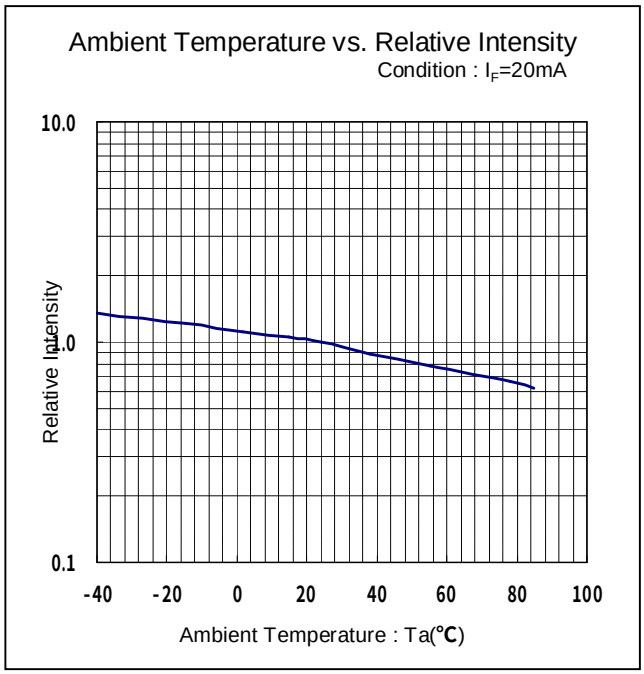


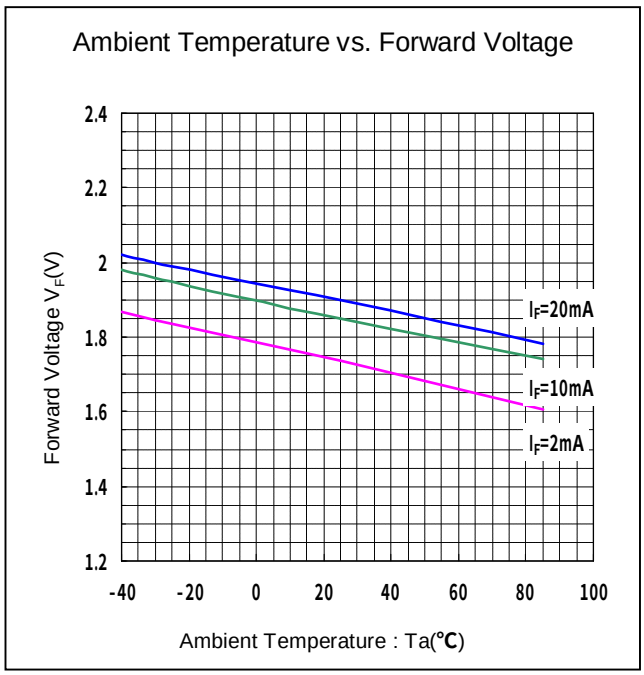


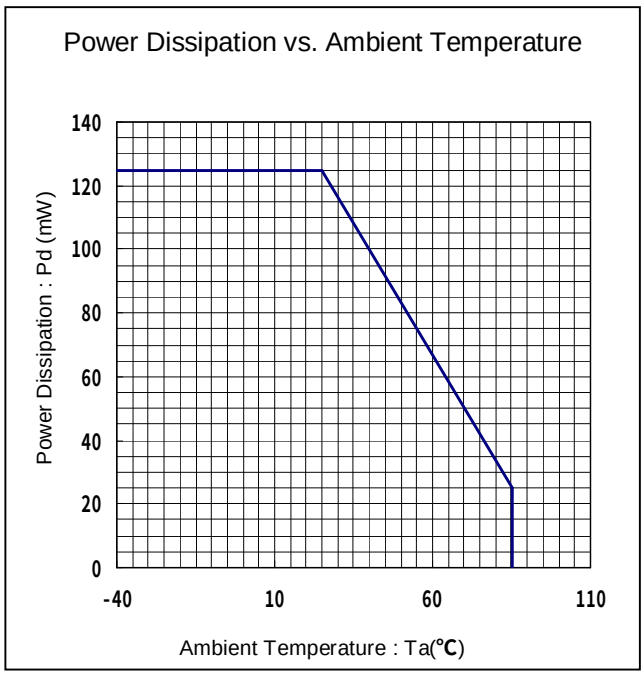


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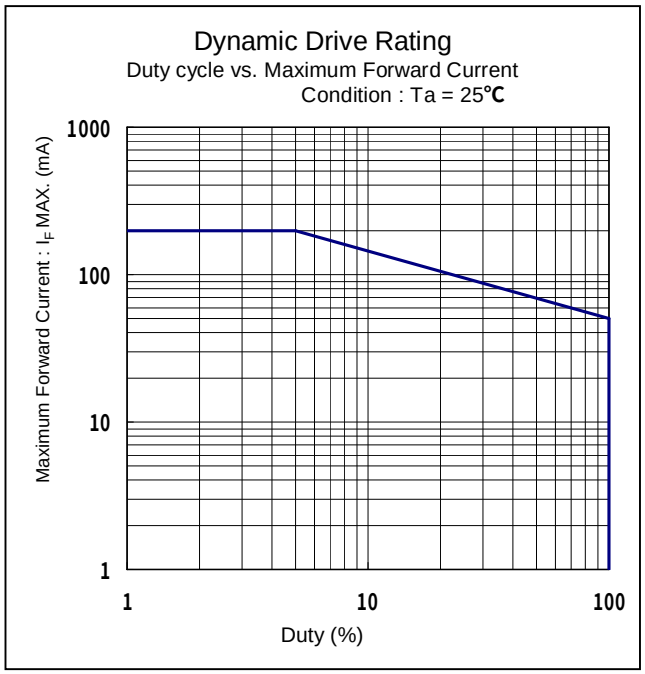


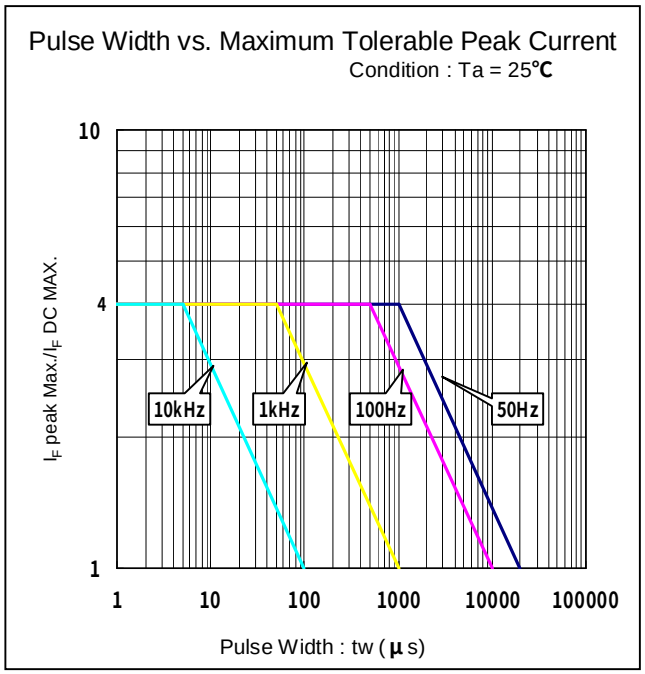






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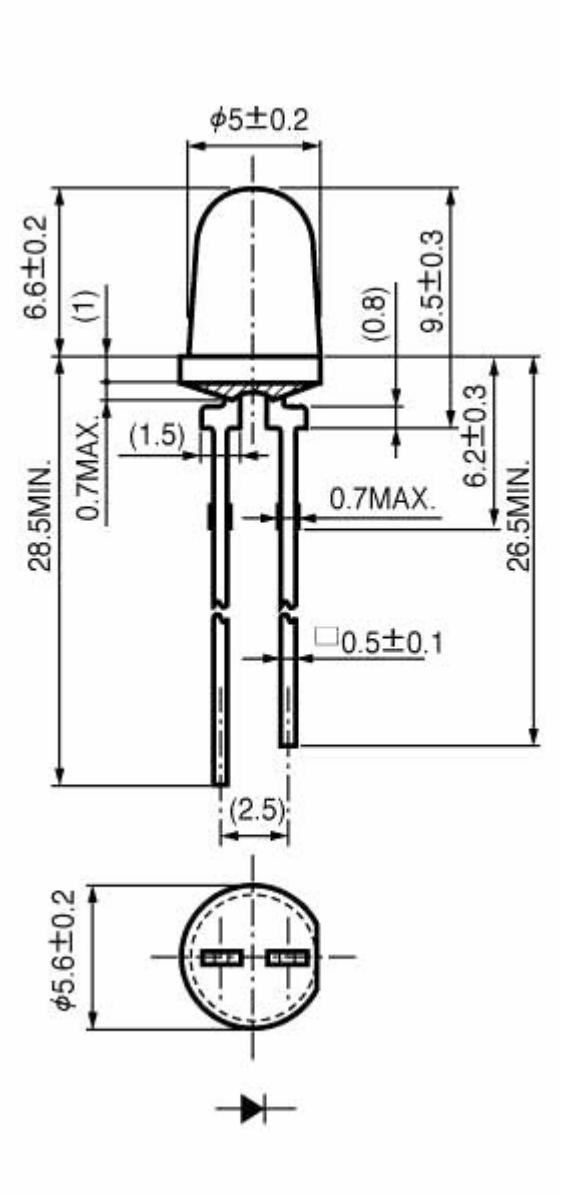




Package Dimensions

(Unit: mm)

Weight: (340)mg



TTW (Through The Wave) soldering Conditions

Pre-heating	100 ℃	(MAX.)
Solder Bath Temp.	265℃	(MAX.)
Dipping Time	5 s	(MAX.)

1) The dip soldering process shall be 2 times maximum.
2) The product shall be cooled to room temp. before the second dipping process.

※The detail is described to LED and Photodetector handling precautions of home page: "Mounting through-hole Type Devices“ and "Soldering", and use it after the confirmation, please.

Manual Soldering Conditions

Iron tip temp.	400℃	(MAX.)
Soldering time and frequency	3 s 2 times	(MAX.) (MAX.)

※The detail is described to LED and Photodetector handling precautions of home page: "Mounting through-hole Type Devices“ and "Soldering", and use it after the confirmation, please.

Reliability Testing Result

Reliability Testing Result	Applicable Standard	Testing Conditions	Duration	Failure
Room Temp. Operating Life	EIAJED-4701/100(101)	Ta = 25℃, I_F = Maxium Rated Current	1,000 h	0/25
Resistance to Soldering Heat	EIAJED-4701/300(302)	260±5℃, 3mm from package base	10s	0/25
Temperature Cycling	EIAJED-4701/100(105)	Minimum Rated Storage Temperature(30min) ～Normal Temperature(15min) ～Maximum Rated Storage Temperature(30min) ～Normal Temperature(15min)	5 cycles	0/25
Wet High Temp. Storage Life	EIAJED-4701/100(103)	Ta = 60±2℃, RH = 90±5%	1,000 h	0/25
High Temp. Storage Life	EIAJED-4701/200(201)	Ta = Maximum Rated Storage Temperature	1,000 h	0/25
Low Temp. Storage Life	EIAJED-4701/200(202)	Ta = Minimum Rated Storage Temperature	1,000 h	0/25
Lead Tension	EIAJED-4701/400(401)	10N,1time (□0.4 and Flat Package : 5N)	10s	0/10
Vibration, Variable Frequency	EIAJED-4701/400(403)	98.1m/s^2(10G), 100 ～ 2KHz sweep for 20min., XYZ each direction	2 h	0/10

Failure Criteria

Items	Symbols	Conditions	Failure criteria
Luminous Intensity	Iv	I_F Value of each product Luminous Intensity	Testing Min. Value < Spec. Min. Value x 0.5
Forward Voltage	V_F	I_F Value of each product Forward Voltage	Testing Max. Value ≧ Spec. Max. Value x 1.2
Reverse Current	I_R	V_R = Maximum Rated Reverse Voltage V	Testing Max. Value ≧ Spec. Max. Value x 2.5
Cosmetic Appearance	-	-	Occurrence of notable decoloration, deformation and cracking

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