



**Pb-free
HEAT**



2272S Series

Single Color ϕ 1.6 Round Shape Type

Features

Package	Φ 1.6 Round shape type, MBG/MPG : Pale Green Diffused epoxy MPY/MAY : Pale Yellow Diffused epoxy MAA : Pale Orange Diffused epoxy MVR/BR,MPR : Pale Red Diffused epoxy	
Product features	<ul style="list-style-type: none"> • Outer Dimension ϕ 1.6 Round shape type • Operation temperature range. Storage Temperature : $-30^{\circ}\text{C}\sim 100^{\circ}\text{C}$ Operating Temperature : $-30^{\circ}\text{C}\sim 85^{\circ}\text{C}$ • Lead-free soldering compatible • RoHS compliant 	
Dominant wavelength	Green : 558nm (MBG) : 567nm (MPG) Yellow Green : 572nm (MPY) Yellow : 590nm (MAY) Orange : 606nm (MAA) Red : 624nm (MVR) : 647nm (BR) : 630nm (MPR)	
Half Intensity Angle	MBG : 93 deg., MPY : 69 deg., MVR : 87 deg., MPR : 108 deg.	MPG : 94 deg. MAY,MAA : 86 deg. BR : 100 deg.
Die materials	MBG,MPG,MPY,MPR : GaP MAY,MAA,MVR : GaAsP BR : GaAlAs	
Soldering methods	TTW (Through The Wave) soldering and manual soldering	
ESD	More than 2kV(HBM)	
Packing	Bulk : 200pcs(MIN.)	

Recommended Applications

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

Color and Luminous Intensity

(Ta=25°C)

Part No.	Material	Emitted Color	Lens Color		Dominant Wavelength		Luminous Intensity		
					λd (nm)		Iv (mcd)		
					TYP.	I _F	MIN.	TYP.	I _F
MBG2272S	GaP	Green	Pale Green	Diffused	558	20	2	4	20
MPG2272S	GaP				567	20	6	12	20
MPY2272S	GaP	Yellow Green	Pale Yellow		572	20	8	16	20
MAY2272S	GaAsP	Yellow			590	20	5	10	20
MAA2272S	GaAsP	Orange	Pale Orange		606	20	6	12	20
MVR2272S	GaAsP	Red	Pale Red		624	20	6	12	20
BR2272S	GaAlAs				647	20	8	16	20
MPR2272S	GaP				630	10	0.6	1.2	10

Absolute Maximum Ratings

(Ta=25°C)

Item	Symbol	Absolute Maximum Ratings								Unit
		MBG	MPG	MPY	MAY	MAA	MVR	BR	MPR	
Power Dissipation	P_d	70	70	85	85	70	75	80	75	mW
Forward Current	I_F	25	25	30	30	25	30	40	30	mA
Pulse Forward Current ※1	I_{FRM}	60	60	75	75	60	75	300	75	mA
Derating (Ta=25°C or higher)	ΔI_F	0.33	0.33	0.40	0.40	0.33	0.40	0.67	0.40	mA/°C
Reverse Voltage	V_R	4	4	4	4	4	4	4	4	V
Operating Temperature	T_{opr}	-30~+85								°C
Storage Temperature	T_{stg}	-30~+100								°C

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

Electro-Optical Characteristics(MBG,MPG,MPY,MAY,MAA,MVR,BR)

(Ta=25°C)

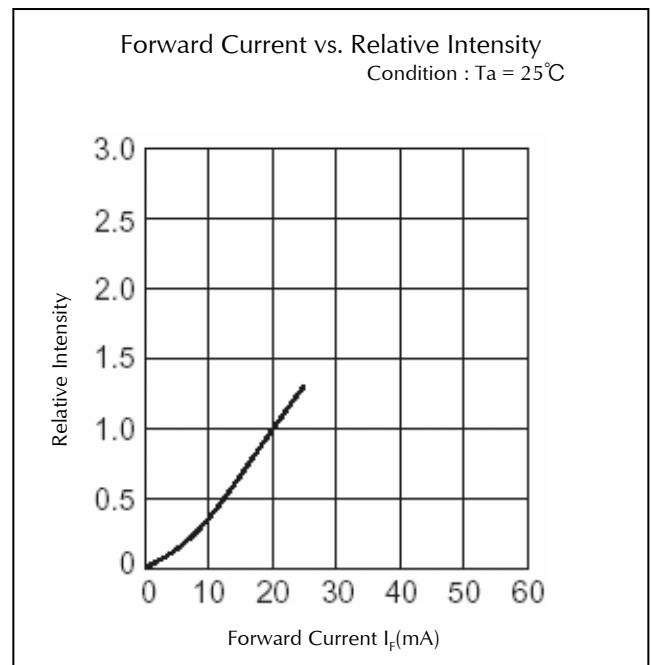
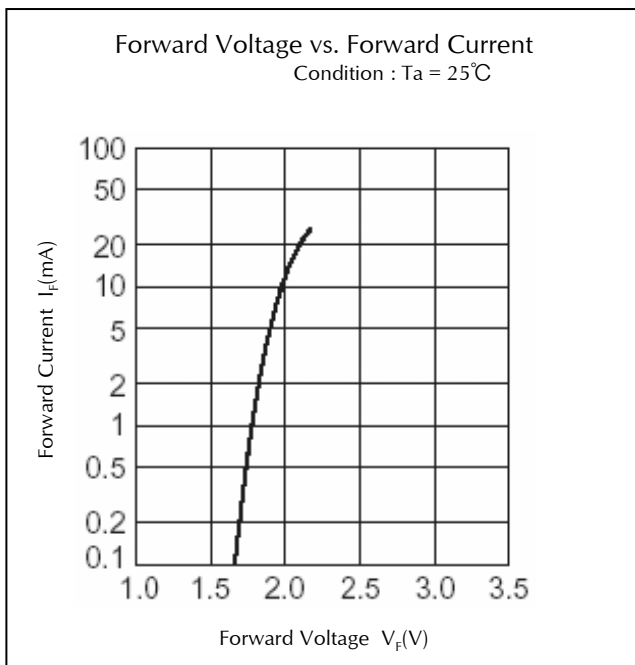
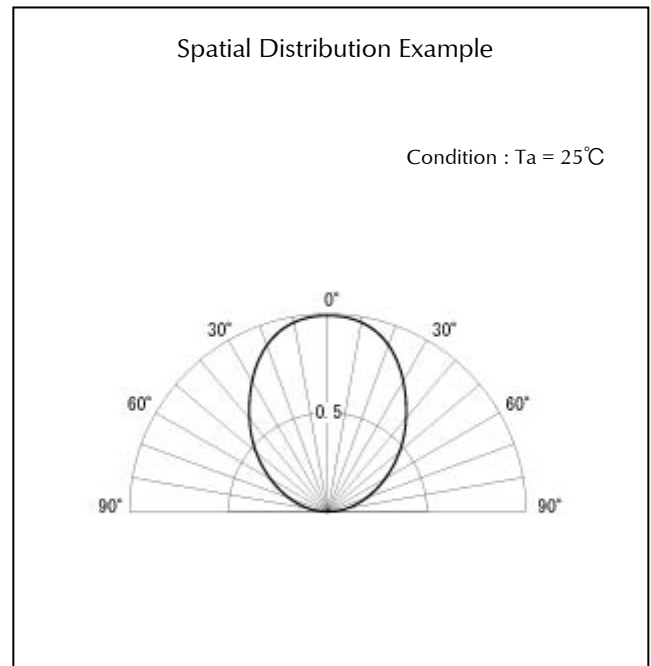
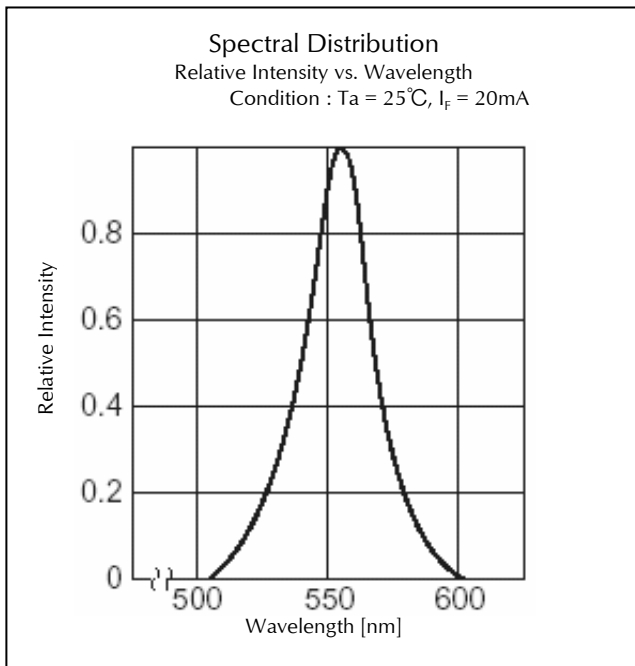
Item	Conditions	Symbol	Characteristics								Unit
			MBG	MPG	MPY	MAY	MAA	MVR	BR		
Forward Voltage	I _F =20mA	V _F	TYP.	2.1	2.1	2.1	2.2	2.2	2.0	1.7	V
			MAX.	2.8	2.8	2.8	2.8	2.8	2.8	2.0	
Reverse Current	V _R =4V	I _R	MAX.	20	20	20	20	20	20	20	μ A
Peak Wavelength	I _F =20mA	λ _p	TYP.	555	560	570	580	605	630	660	nm
Dominant Wavelength	I _F =20mA	λ _d	TYP.	558	567	572	590	606	624	647	nm
Spectral Line Half Width	I _F =20mA	Δλ	TYP.	30	30	30	30	30	30	30	nm
Half Intensity Angle	I _F =20mA	2θ 1/2	TYP.	93	94	69	86	86	87	100	deg.

Electro-Optical Characteristics(MPR)

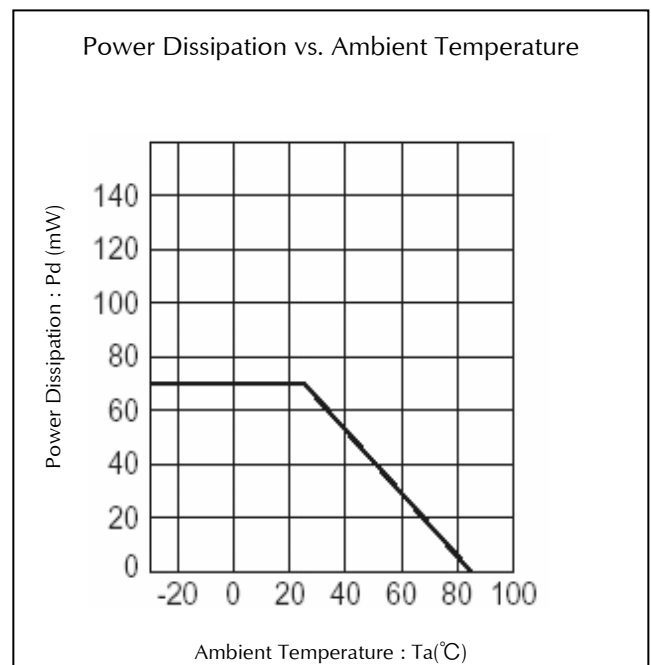
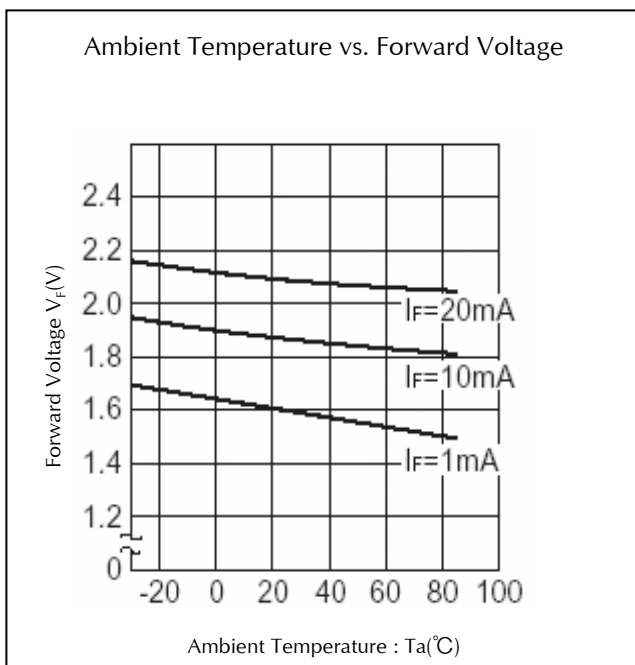
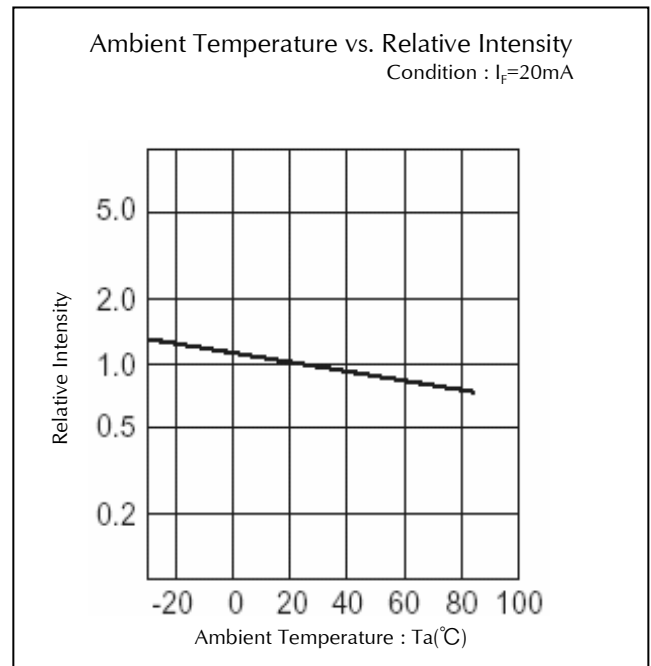
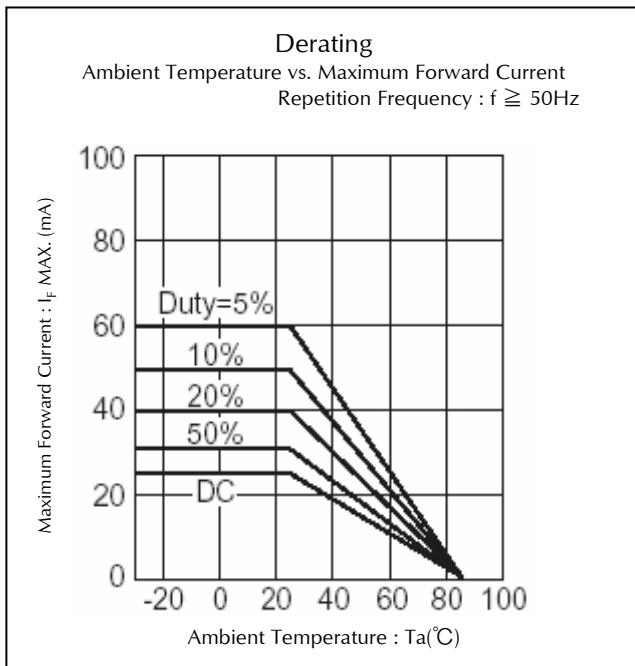
(Ta=25°C)

Item	Conditions	Symbol	Characteristics		Unit
				MPR	
Forward Voltage	I _F =10mA	V _F	TYP.	2.1	V
			MAX.	2.8	
Reverse Current	V _R =4V	I _R	MAX.	20	μ A
Peak Wavelength	I _F =10mA	λ _p	TYP.	700	nm
Dominant Wavelength	I _F =10mA	λ _d	TYP.	630	nm
Spectral Line Half Width	I _F =10mA	Δλ	TYP.	100	nm
Half Intensity Angle	I _F =10mA	2θ 1/2	TYP.	108	deg.

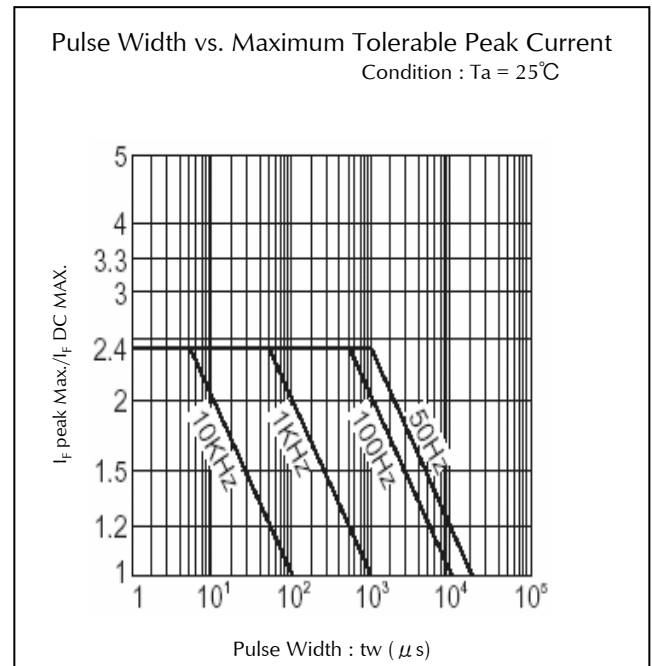
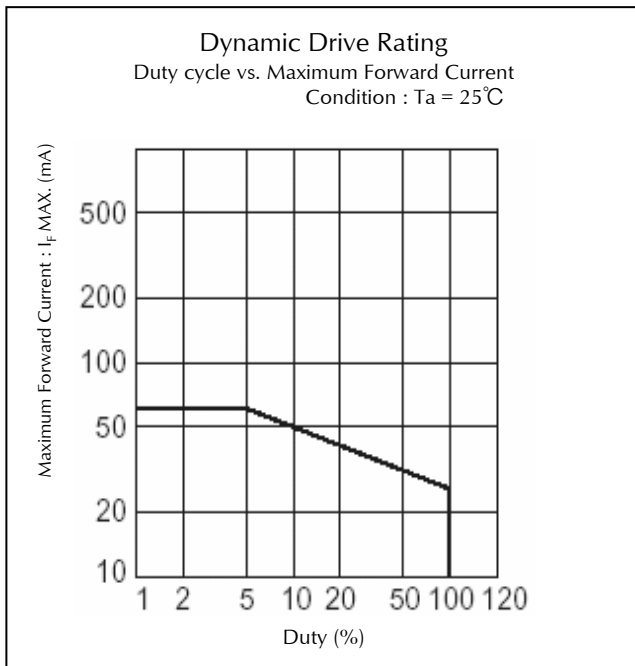
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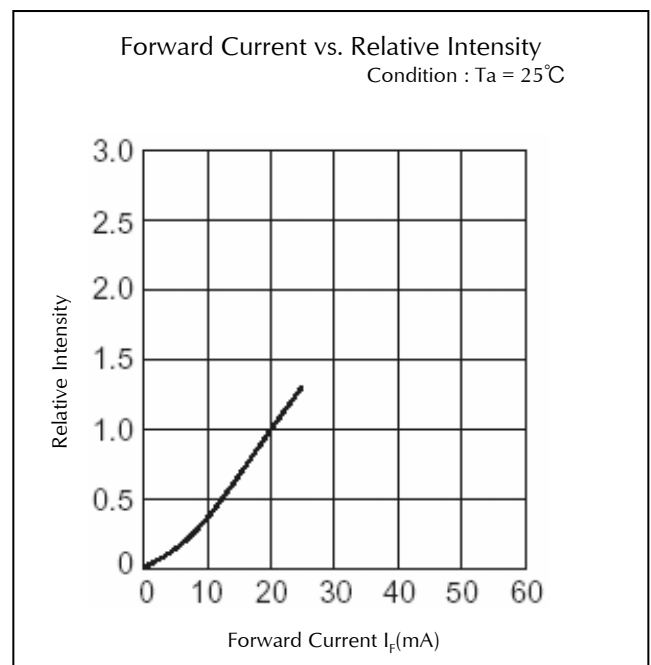
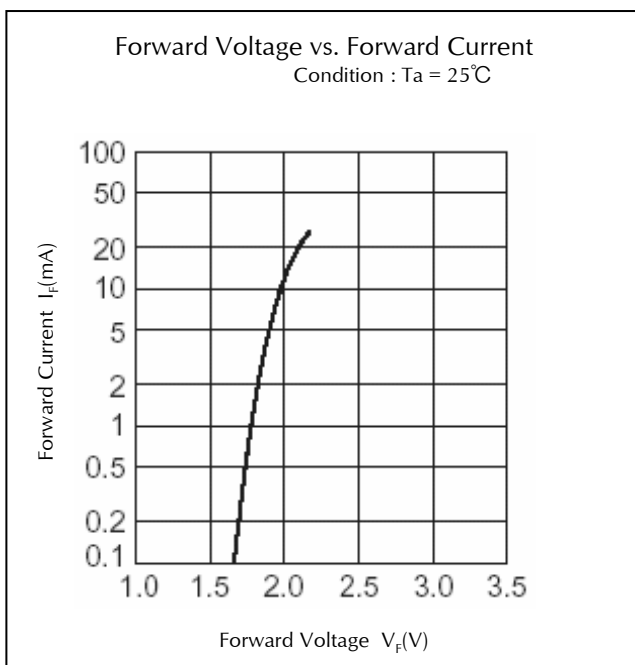
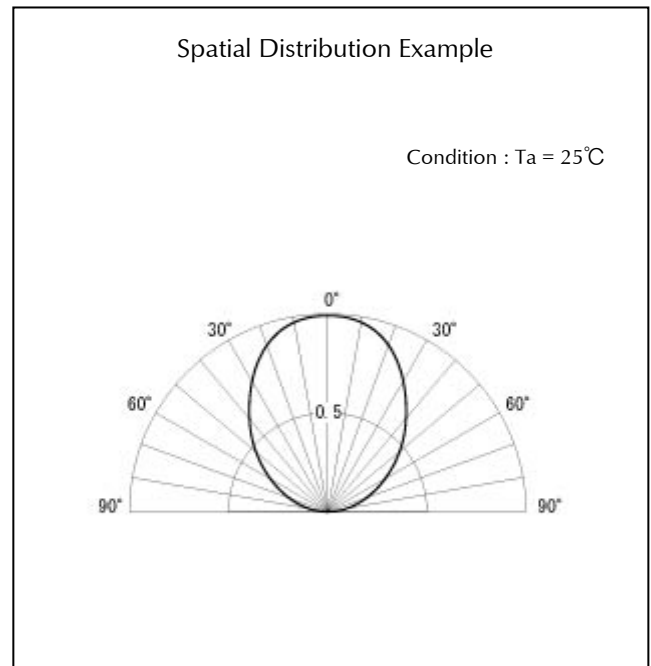
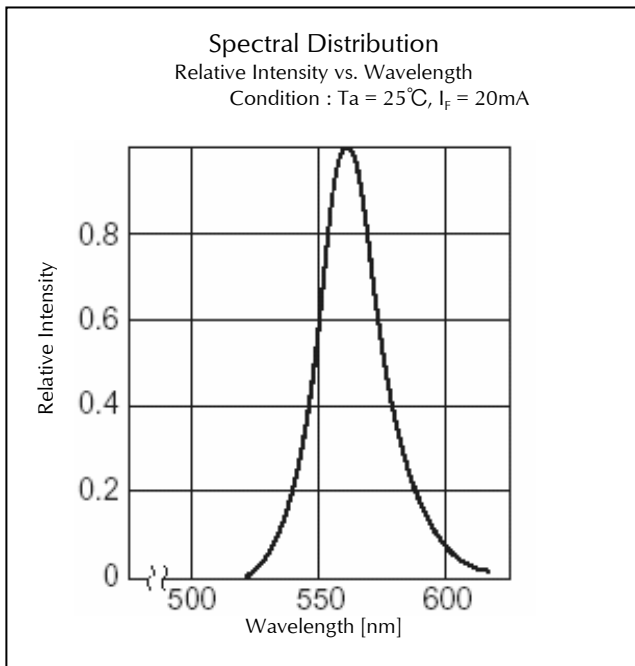
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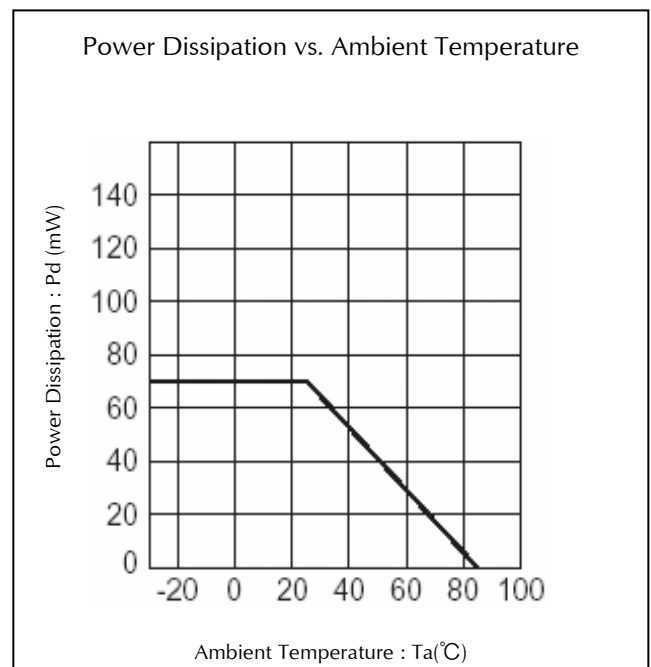
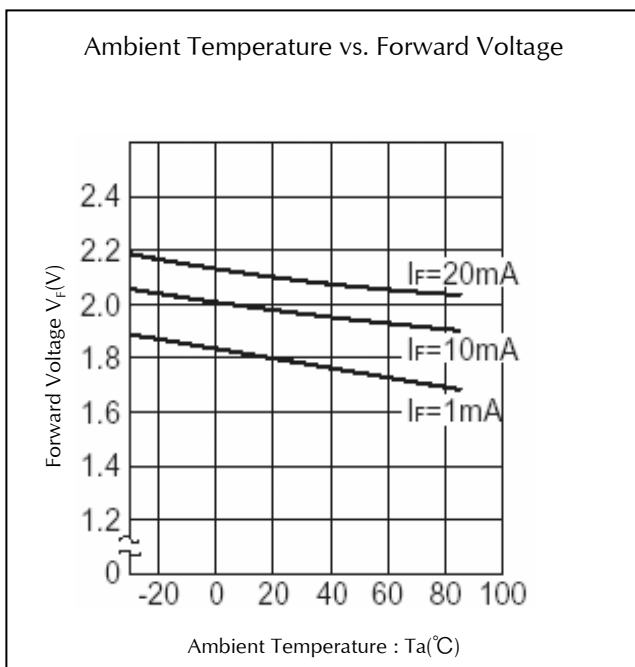
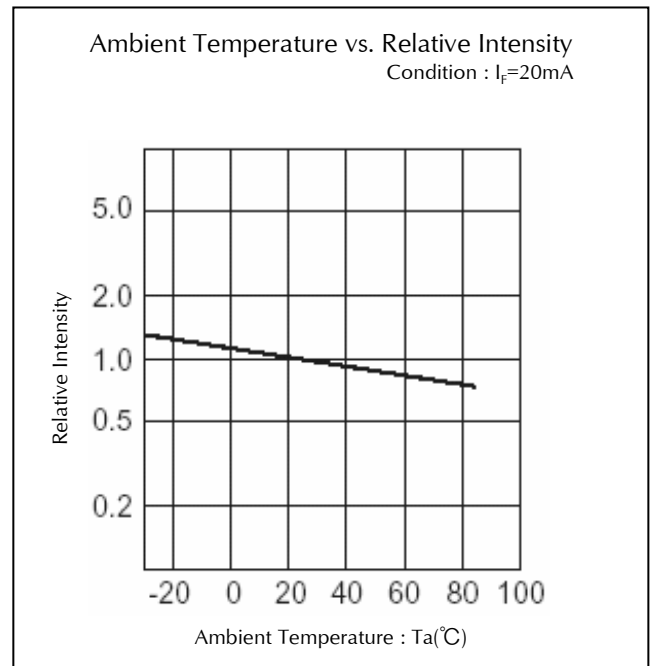
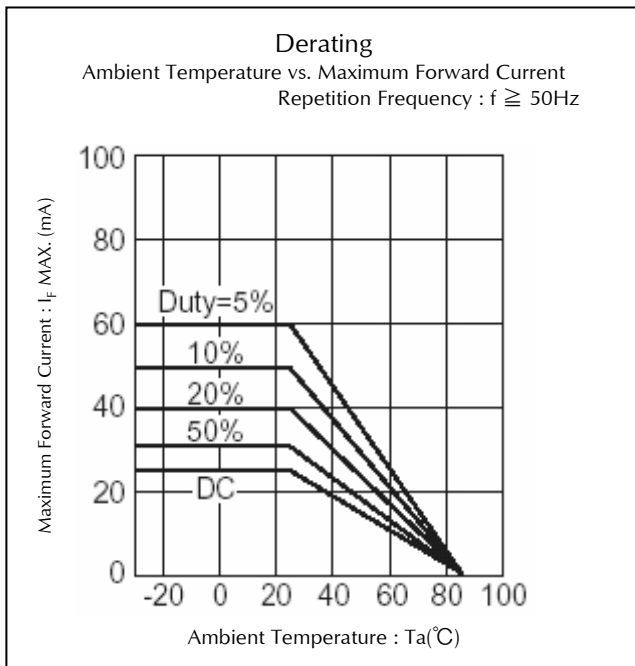
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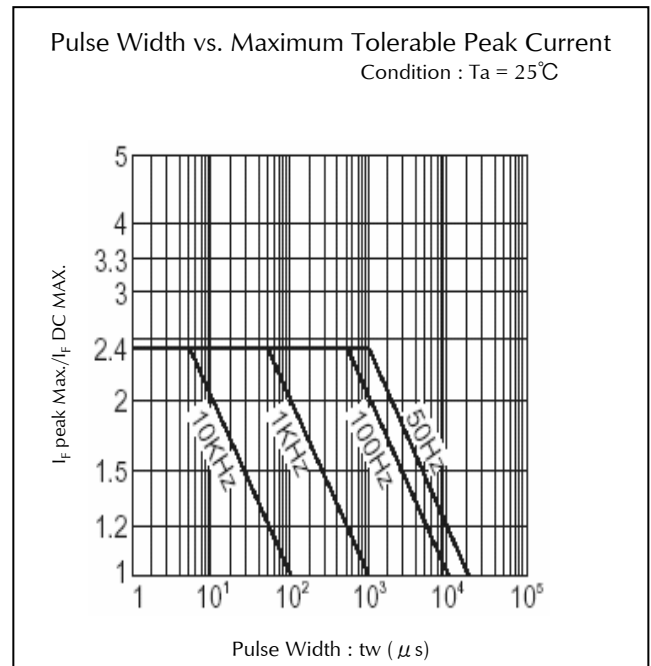
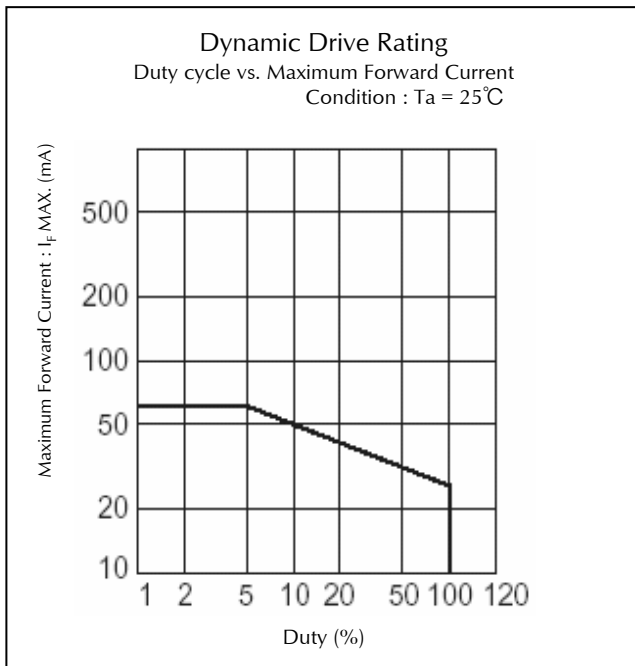
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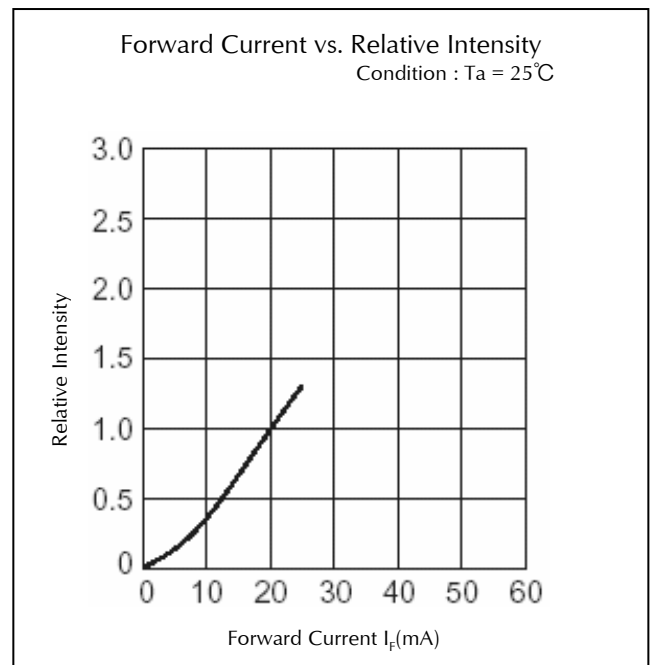
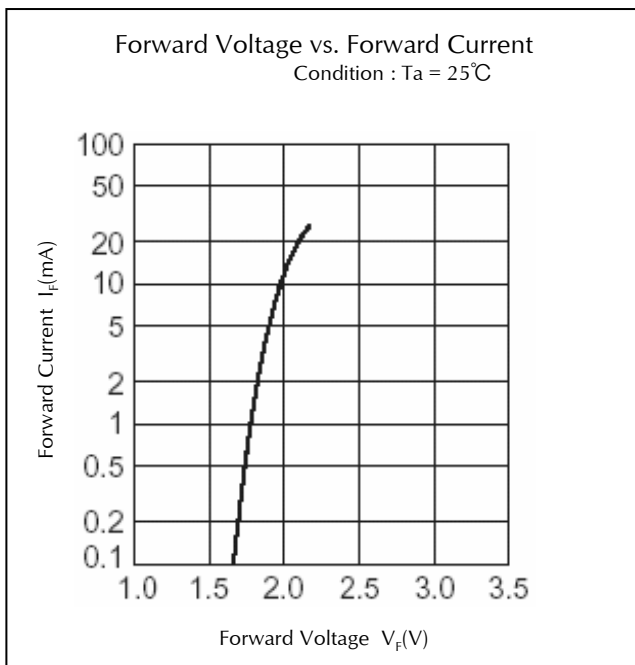
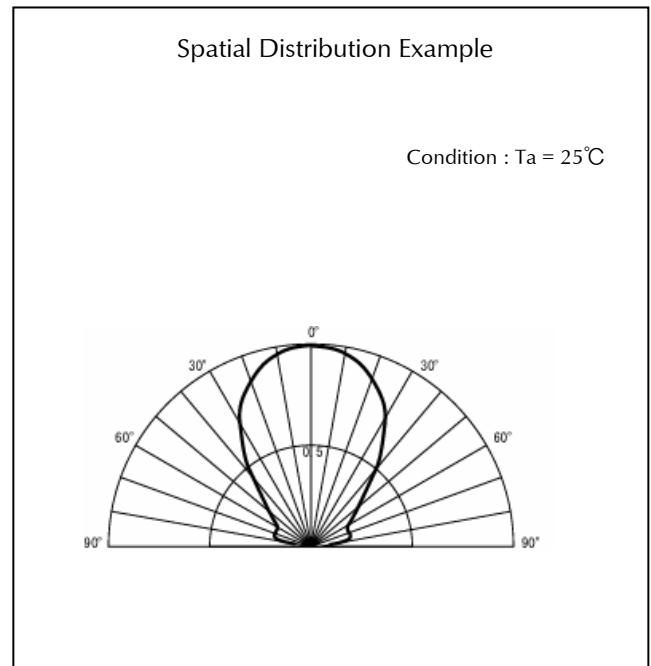
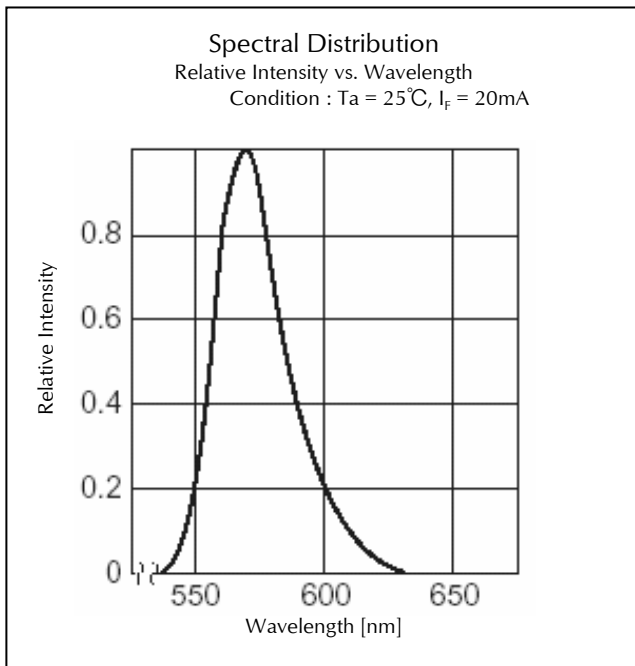
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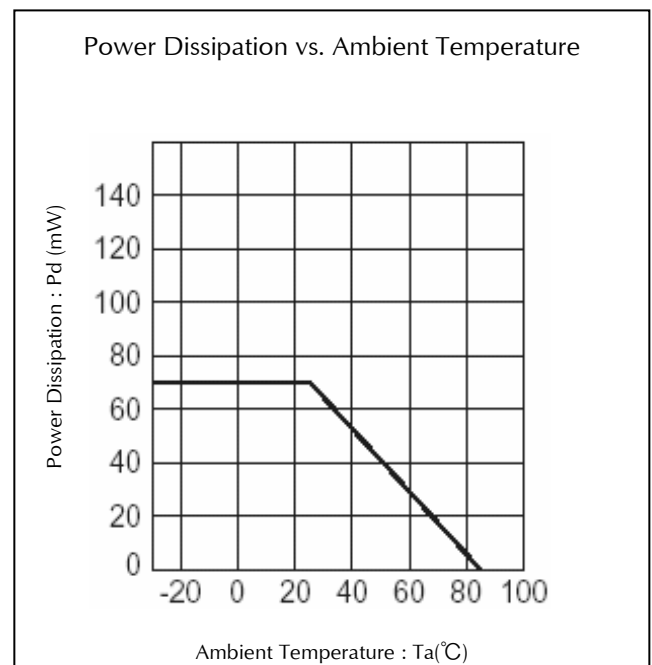
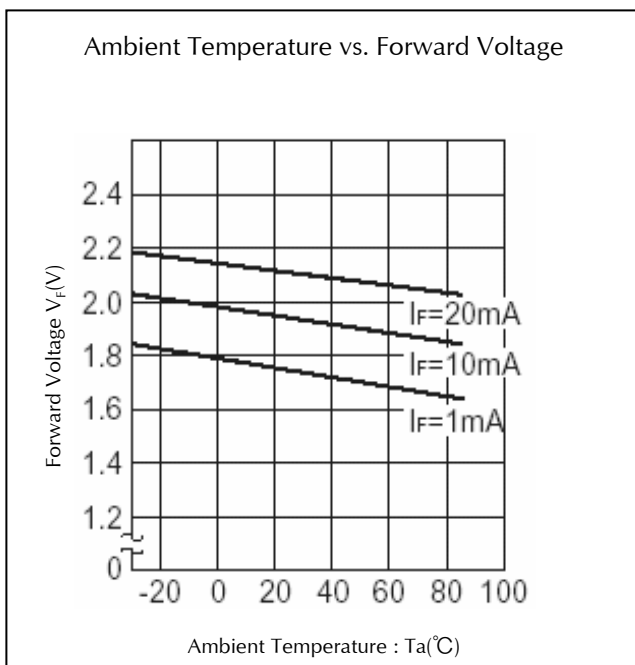
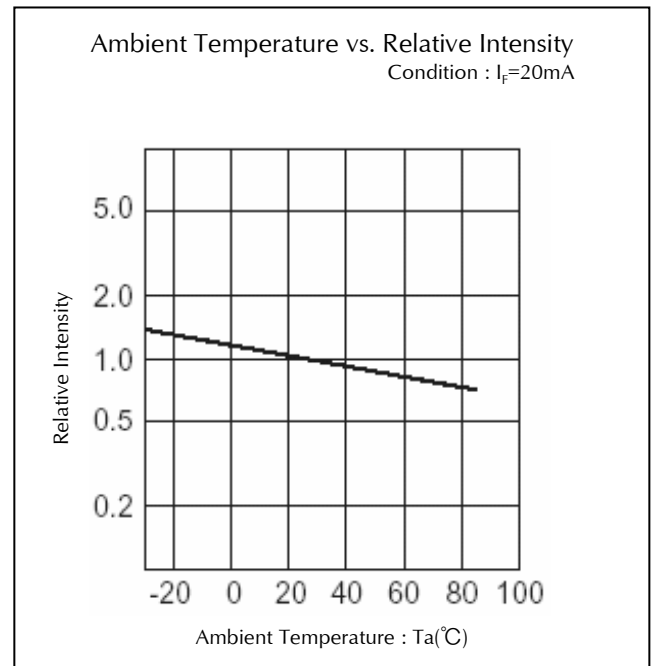
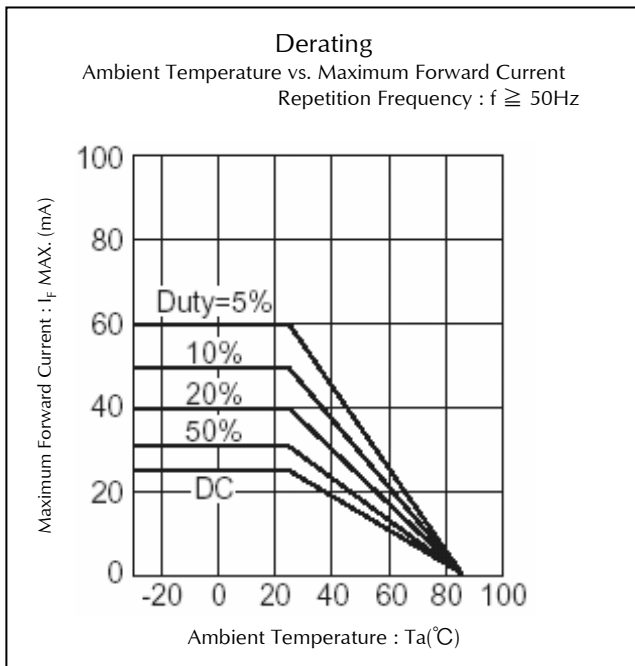
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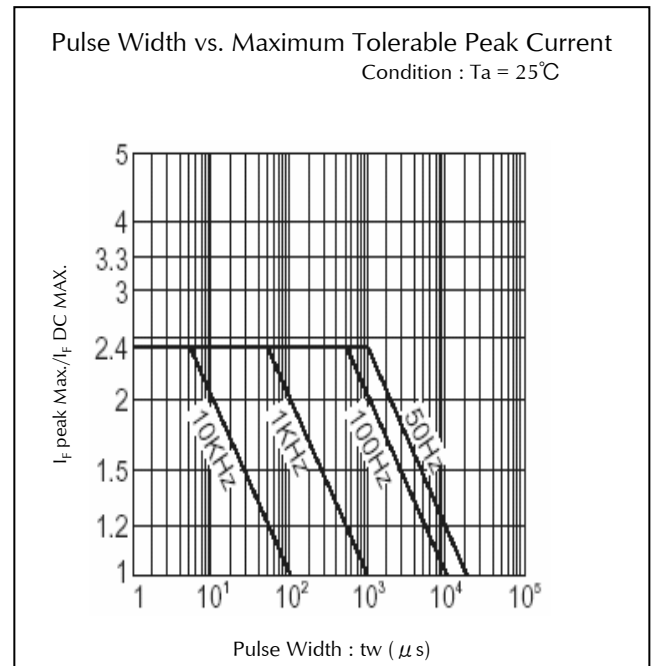
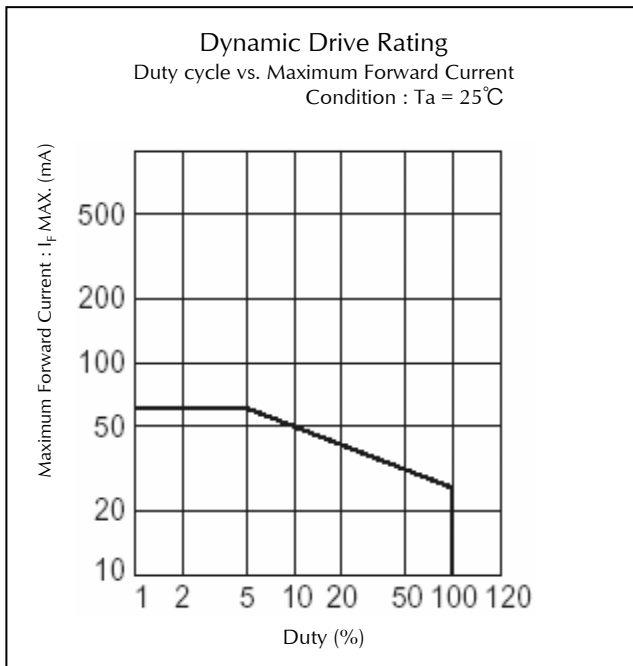
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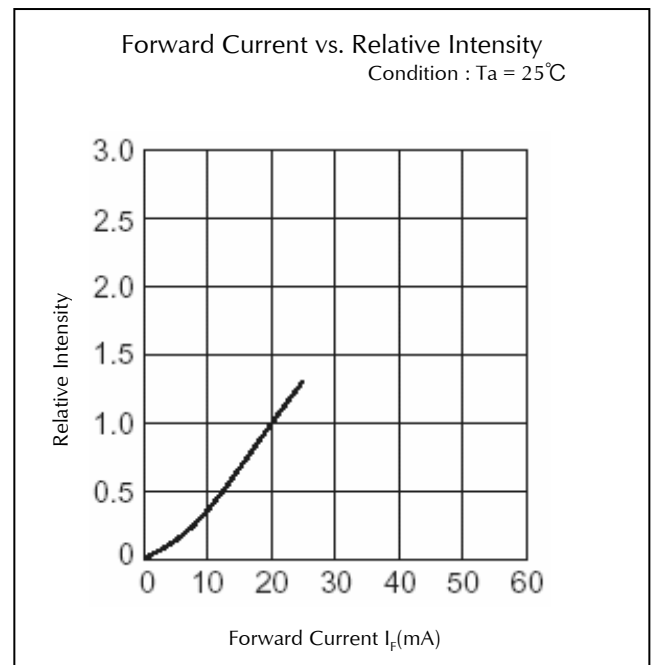
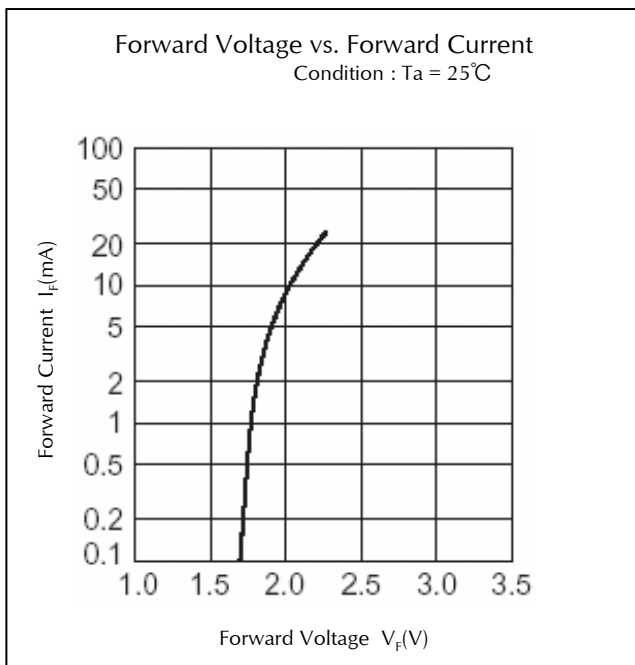
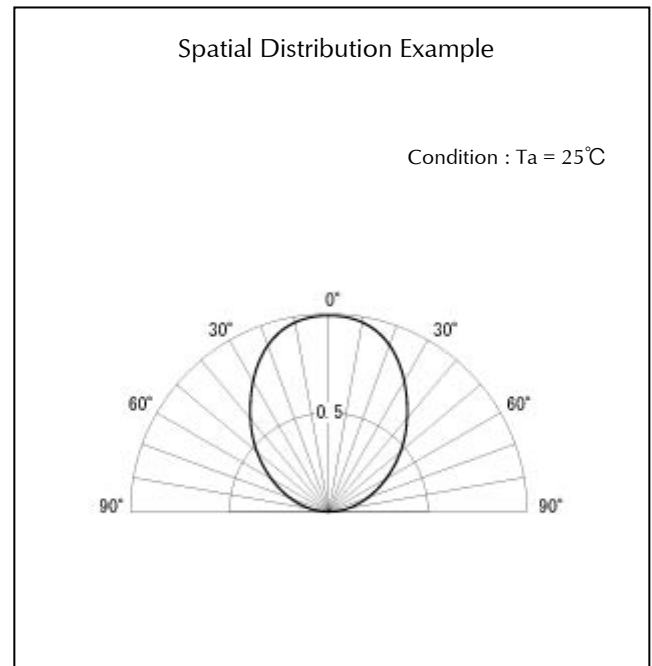
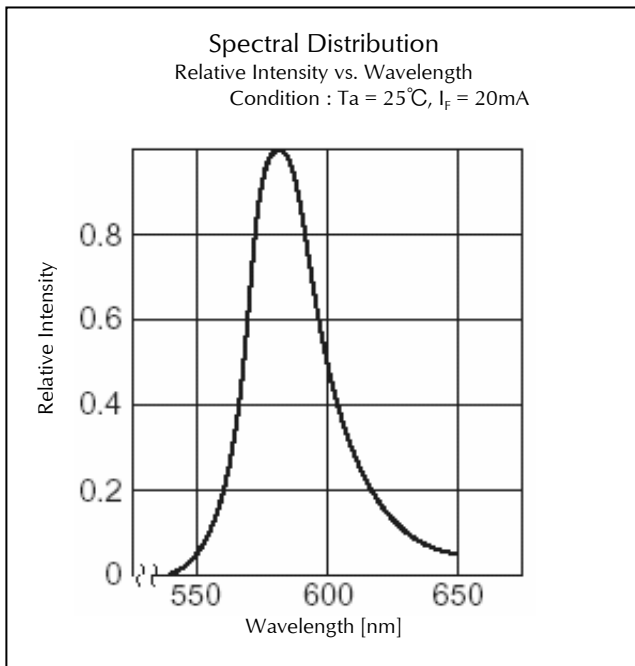
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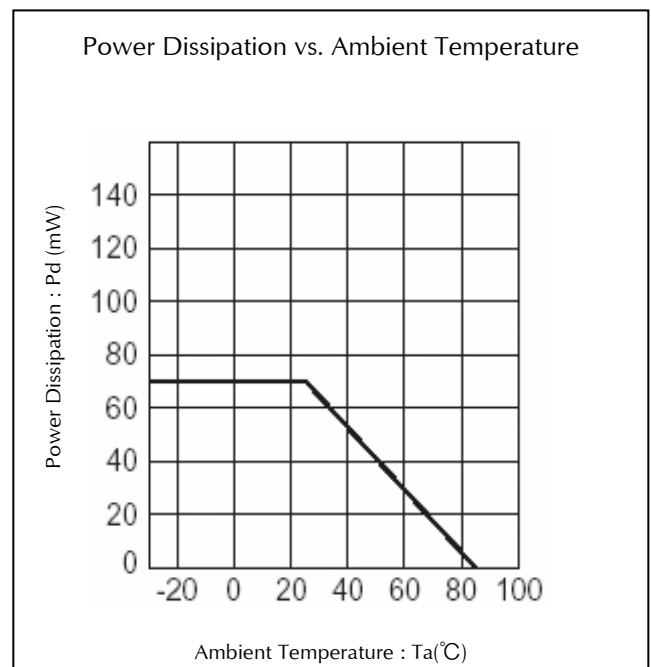
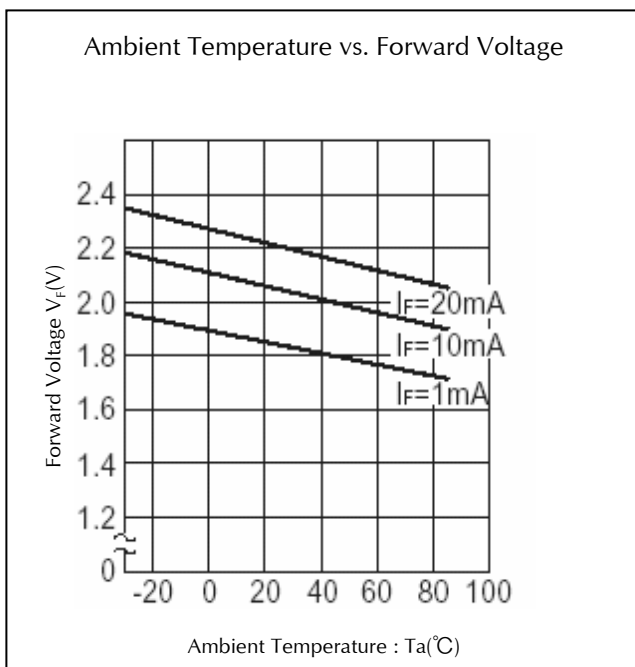
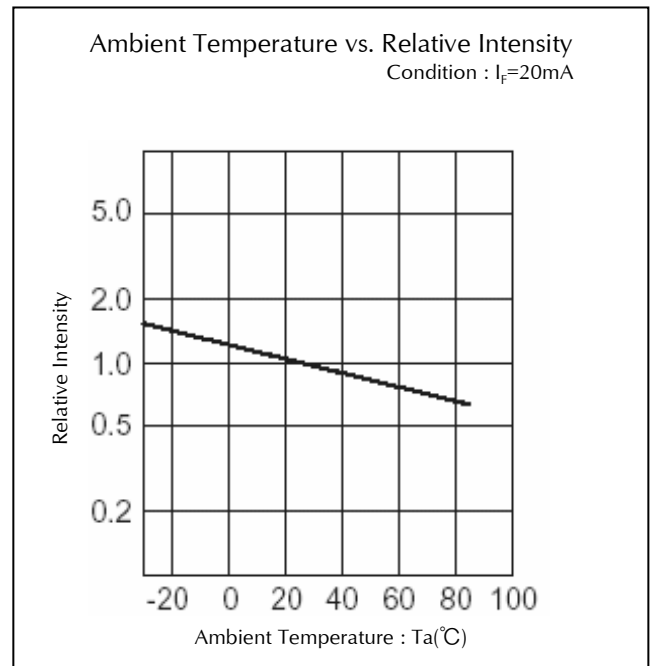
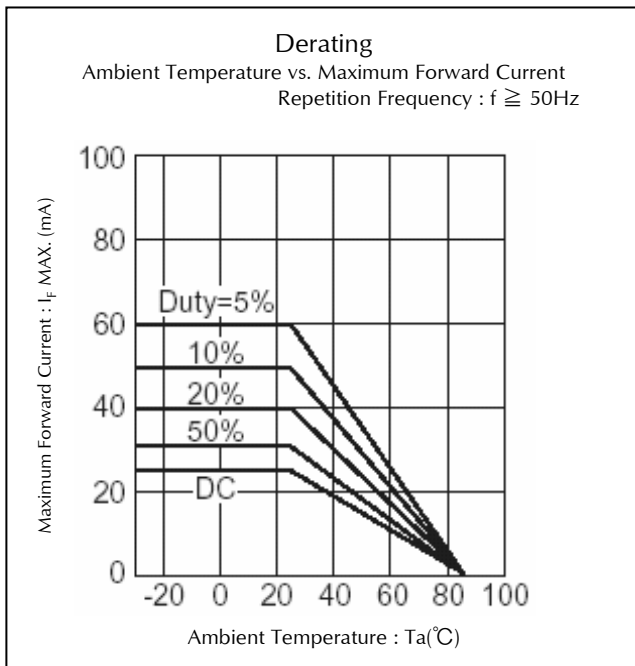
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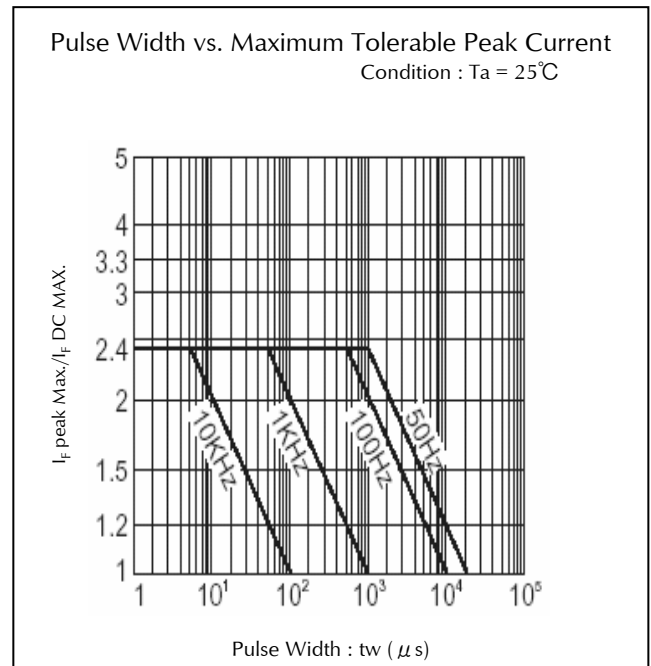
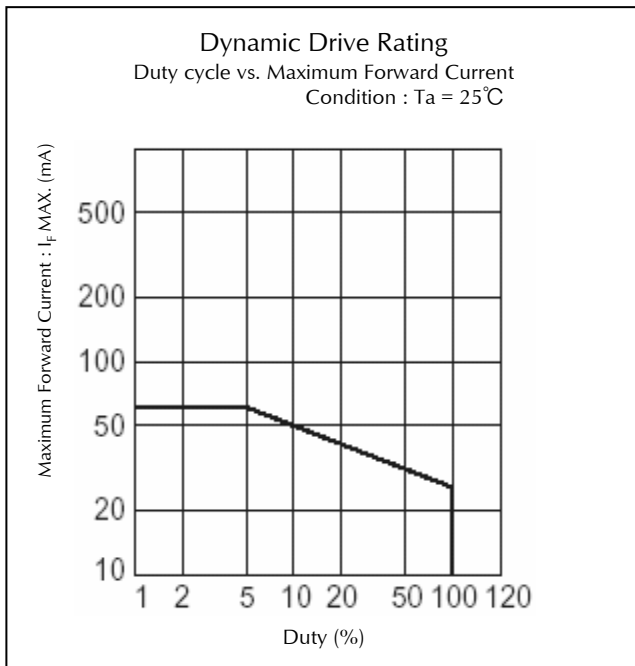
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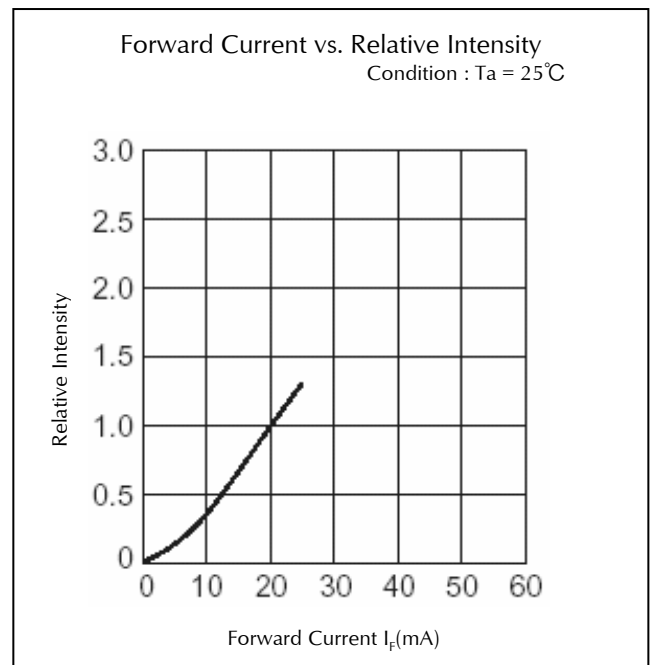
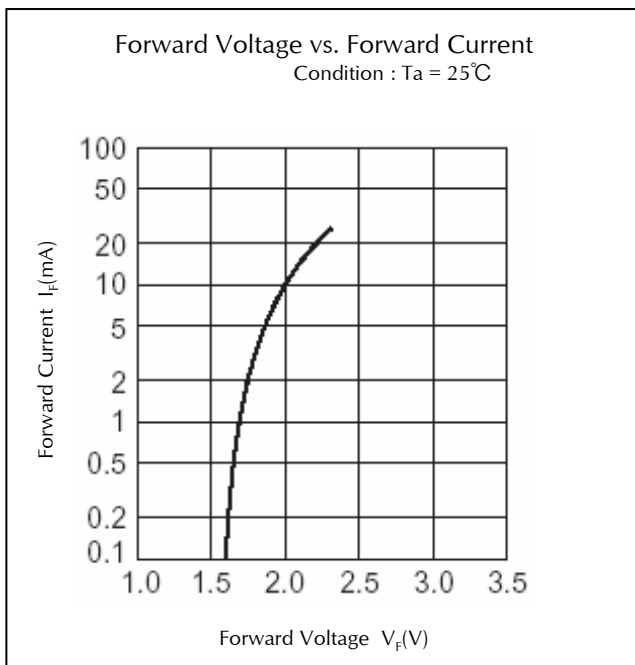
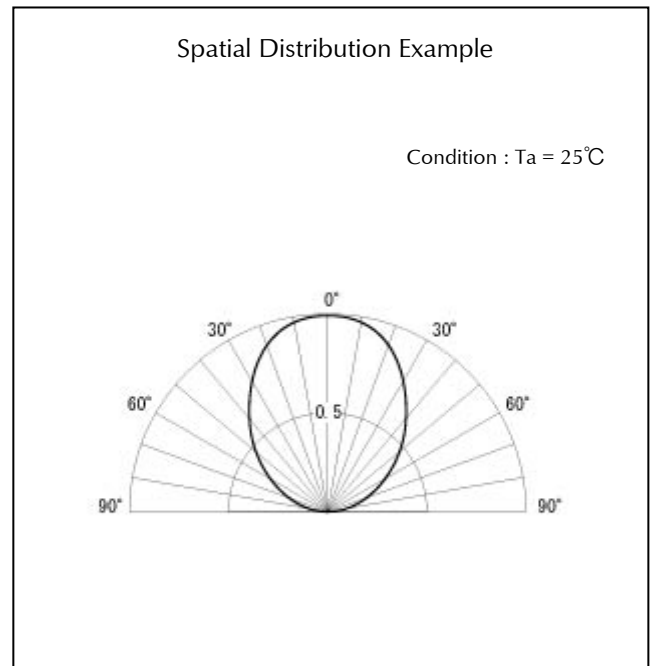
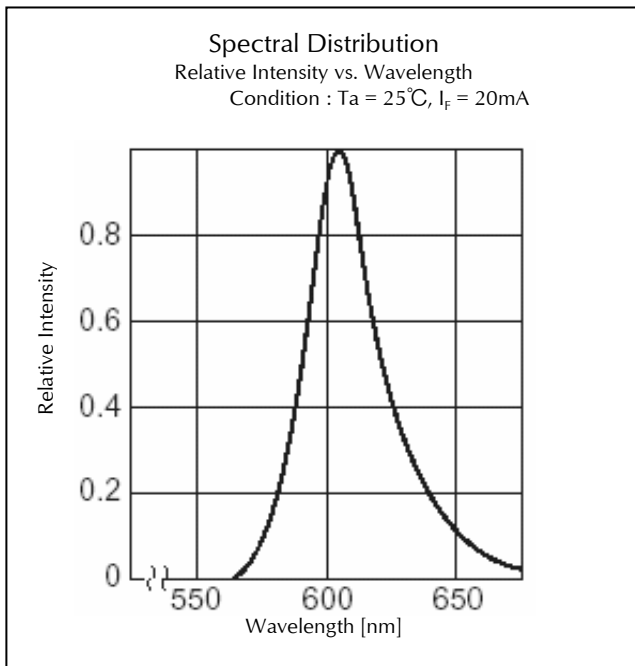
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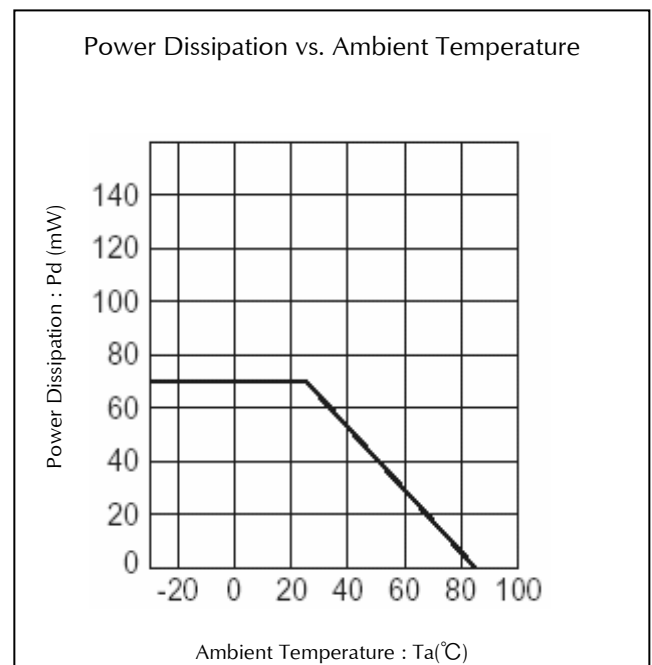
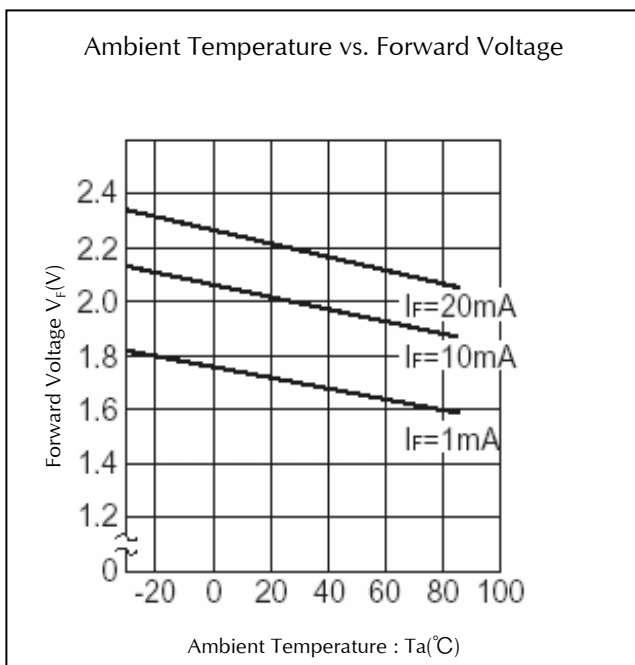
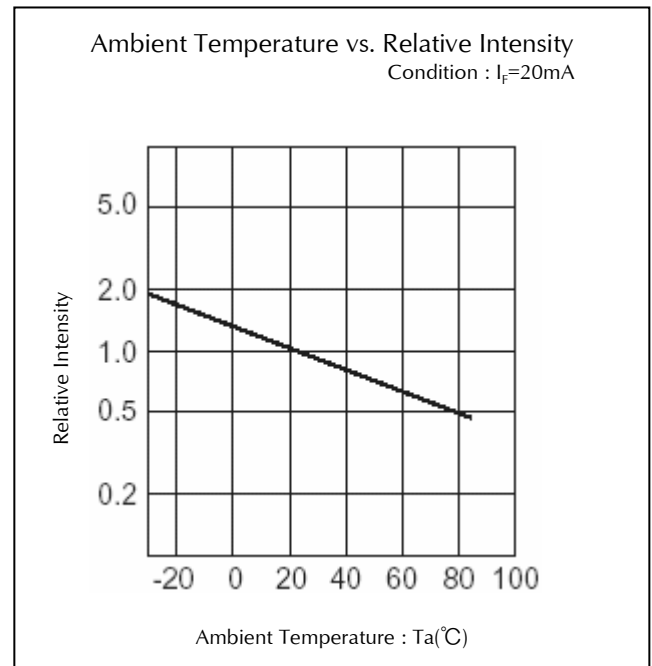
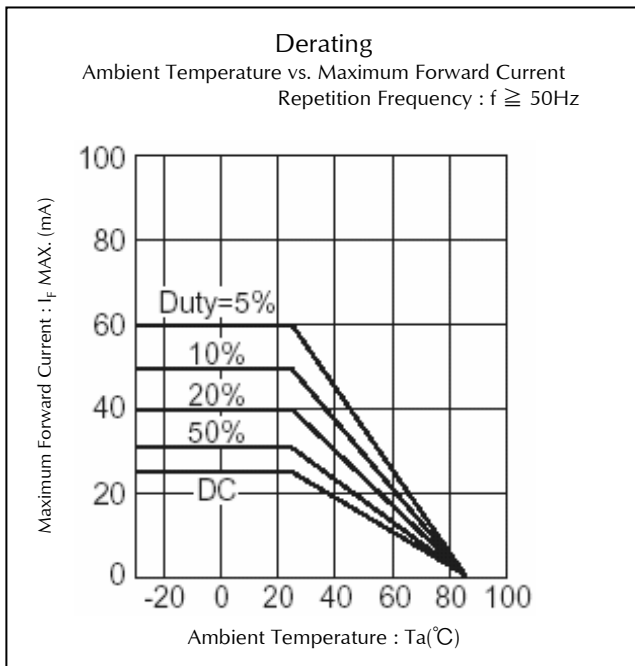
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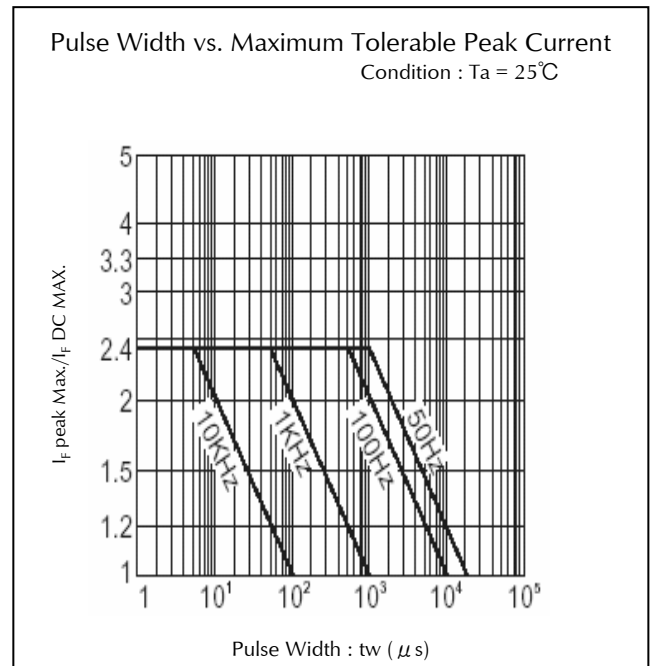
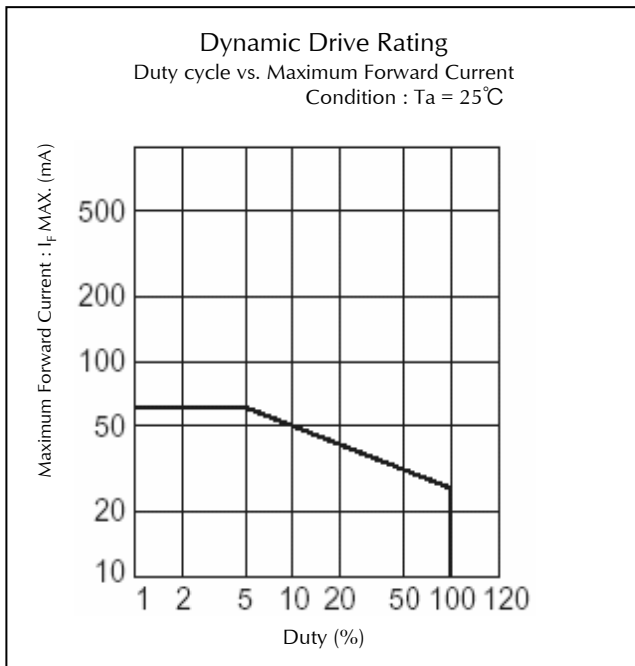
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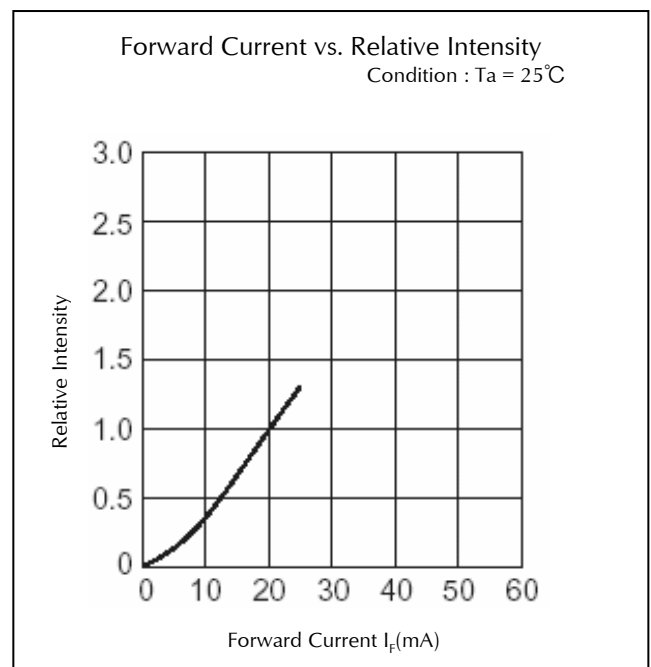
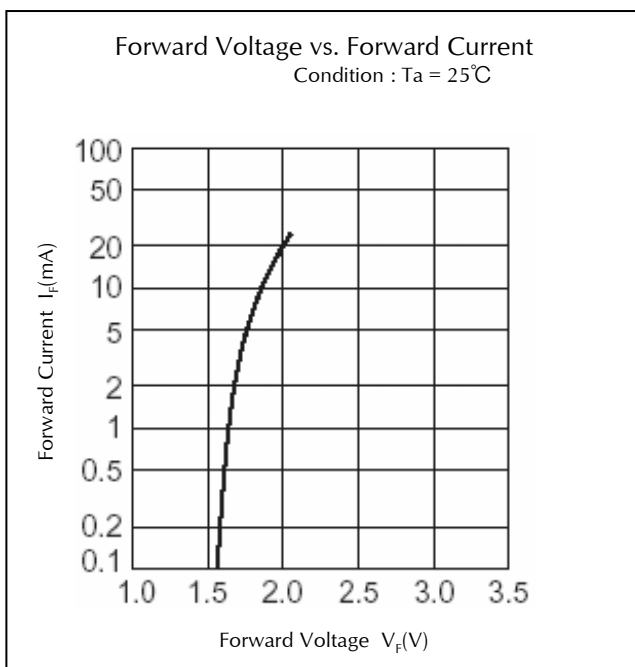
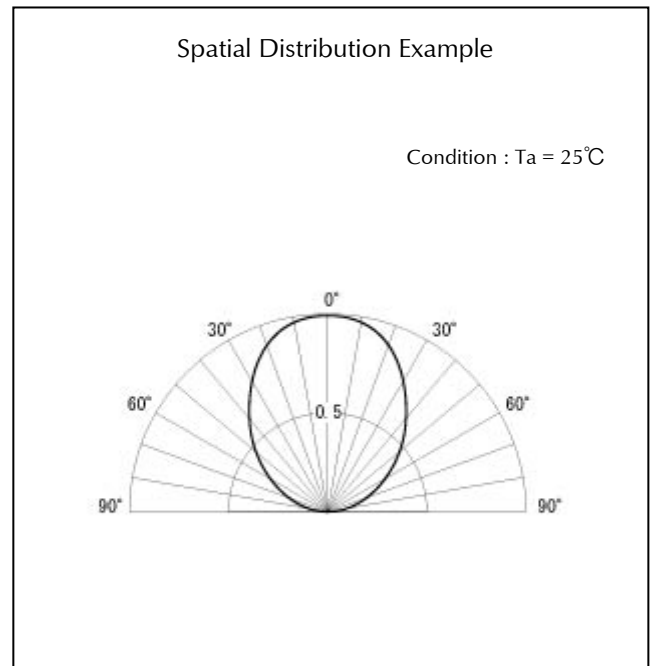
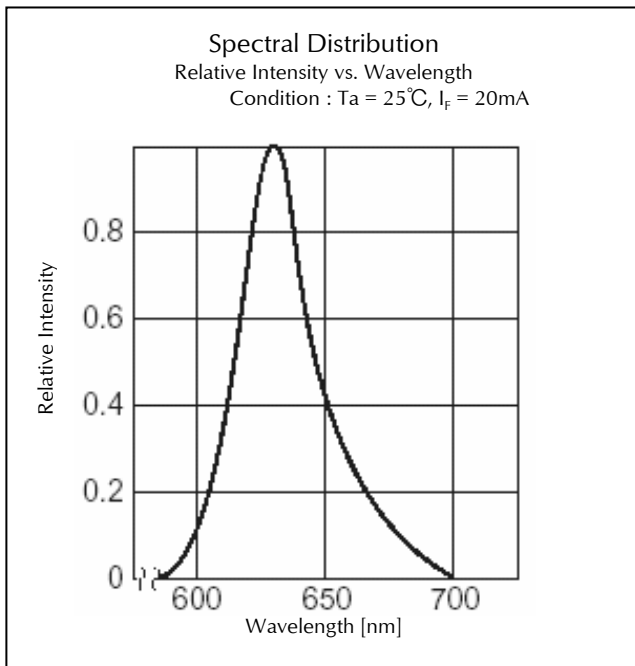
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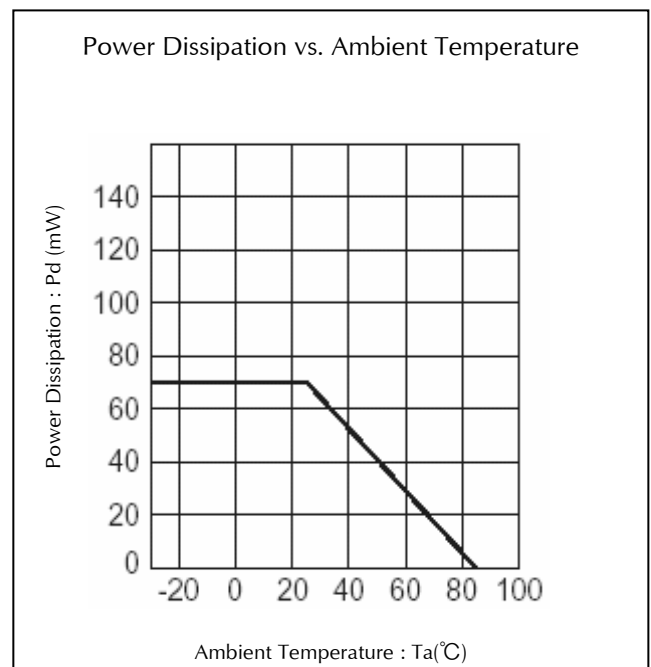
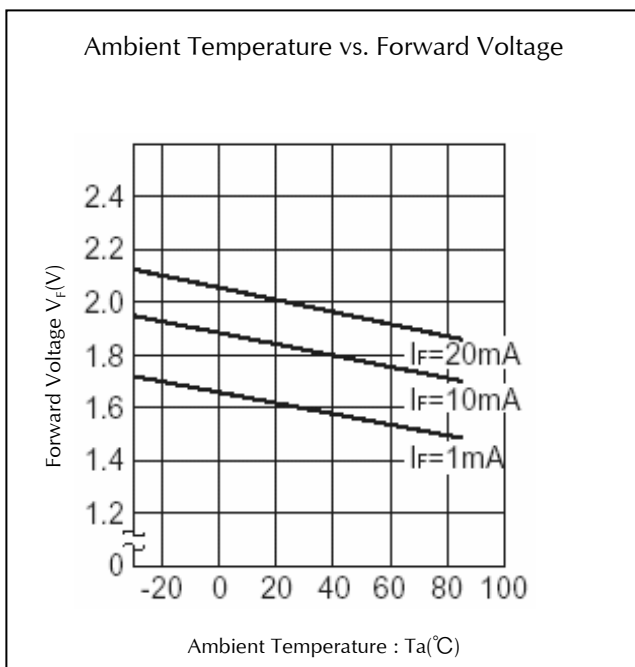
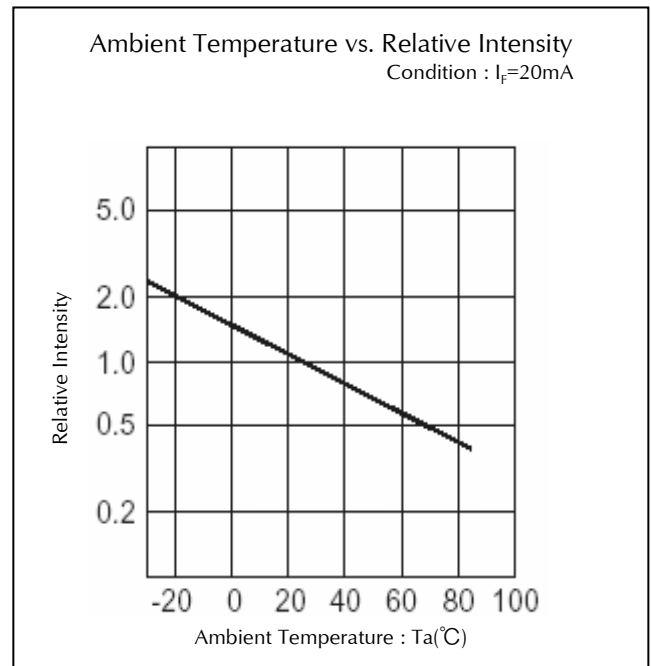
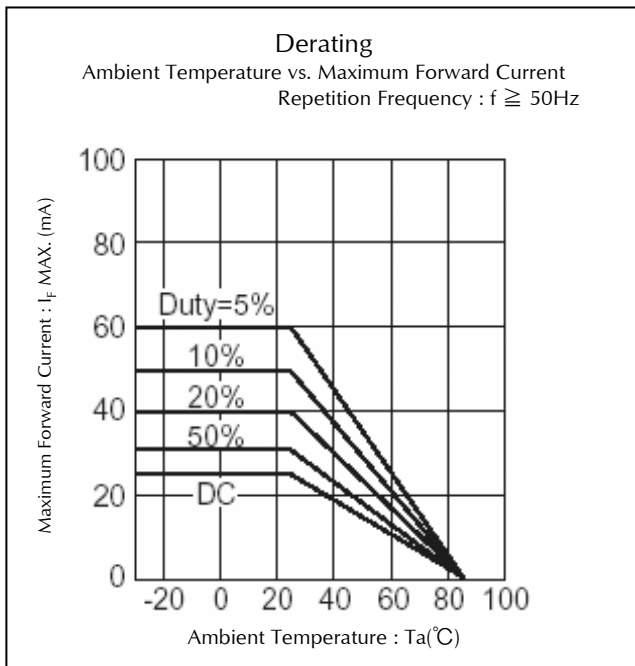
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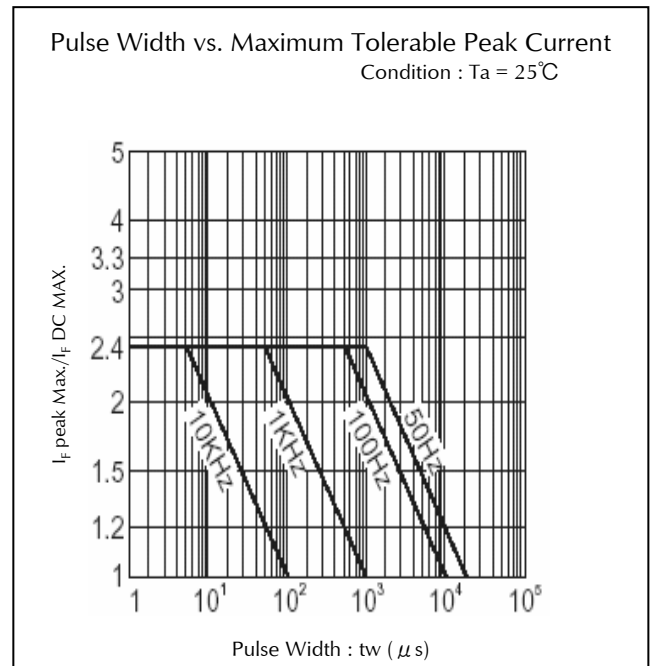
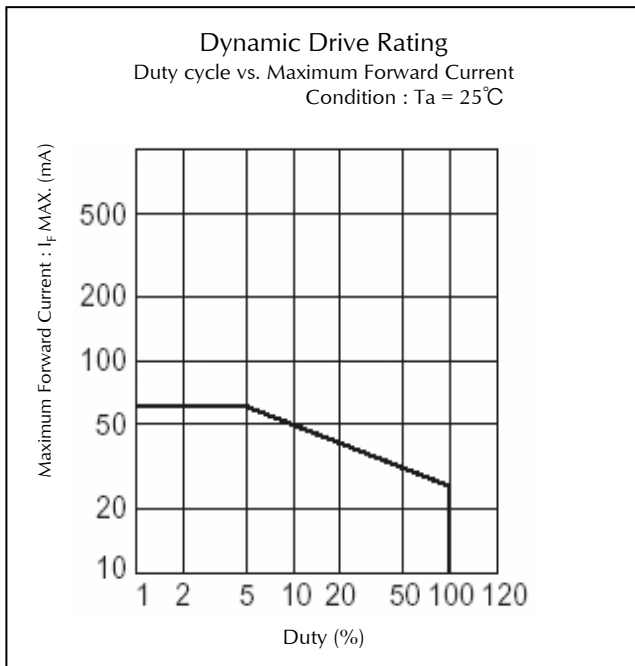
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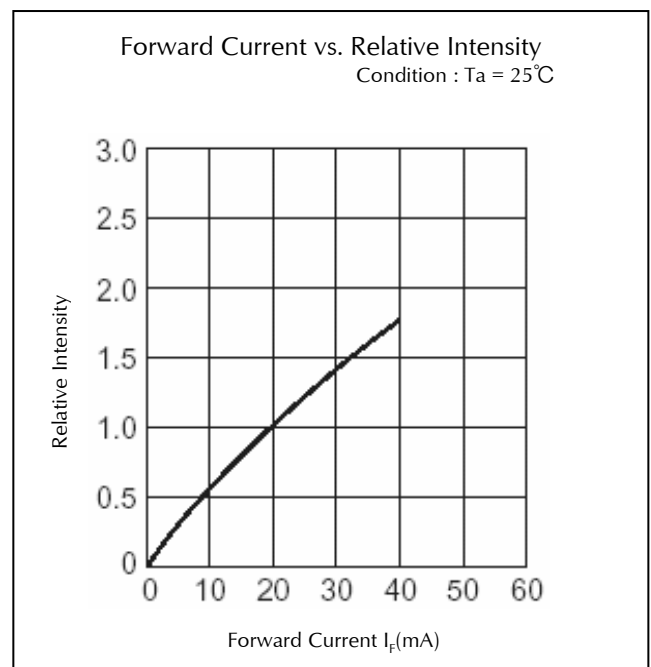
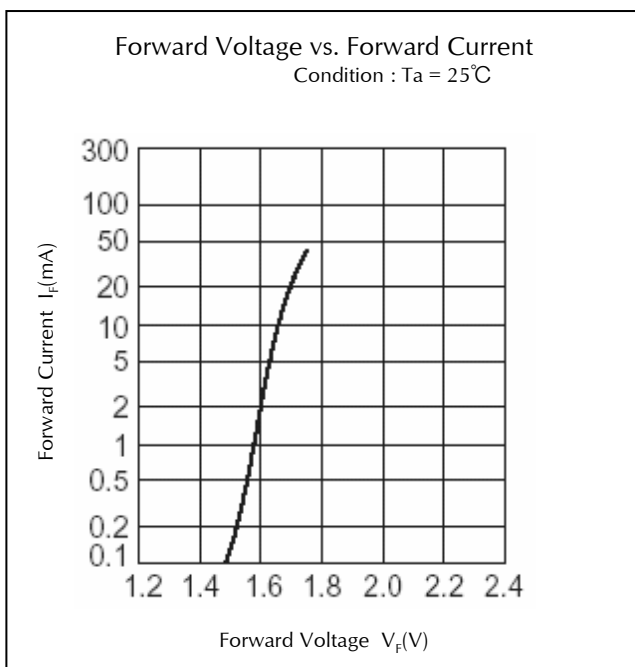
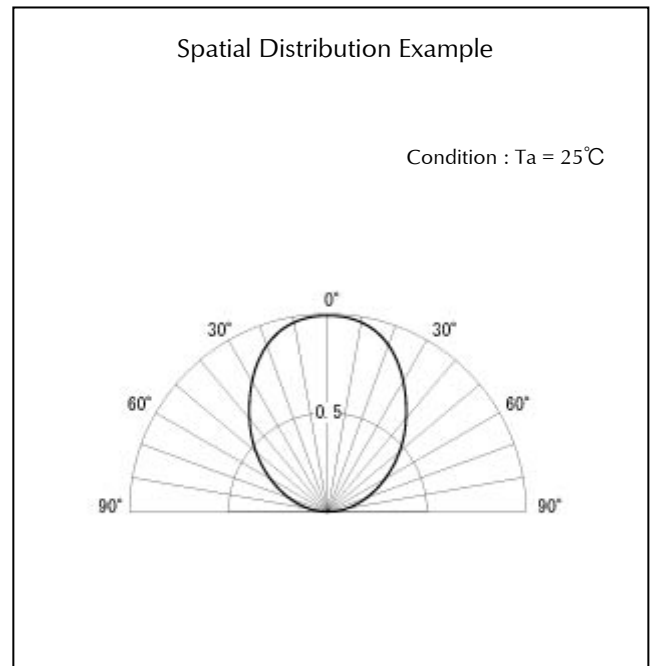
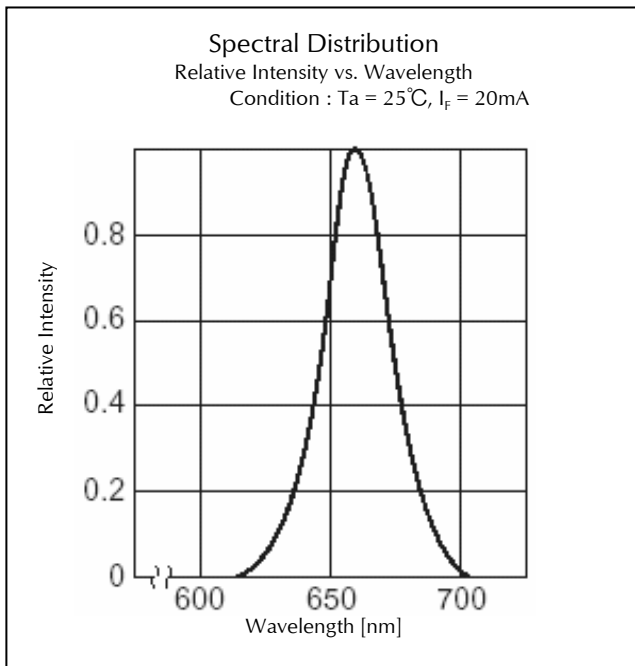
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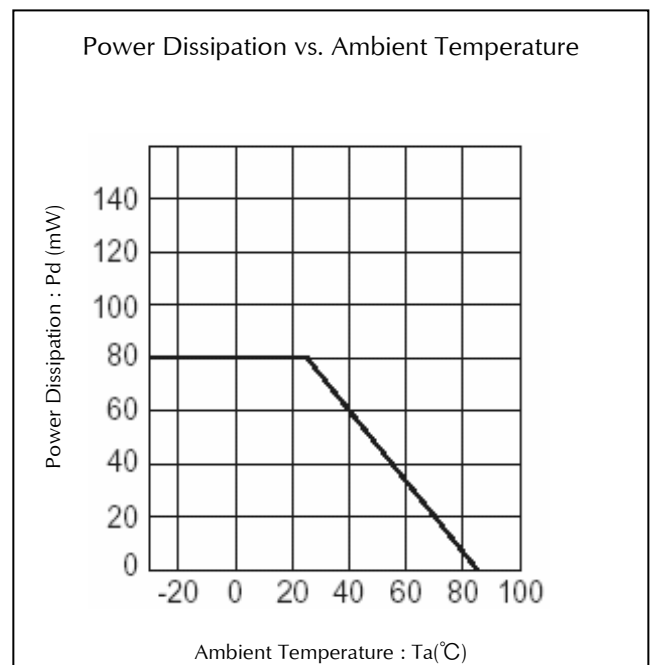
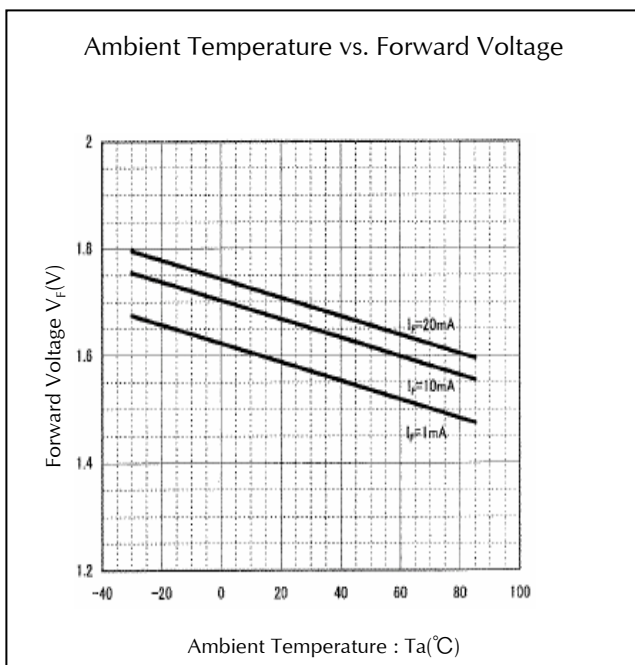
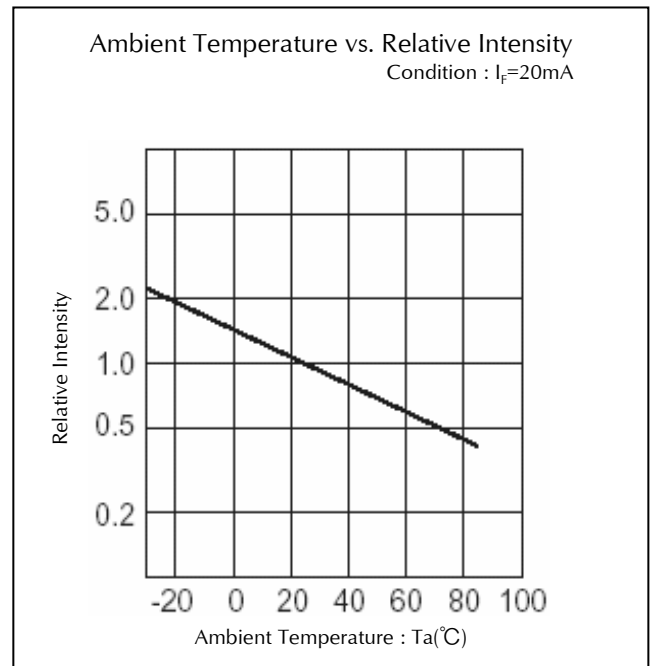
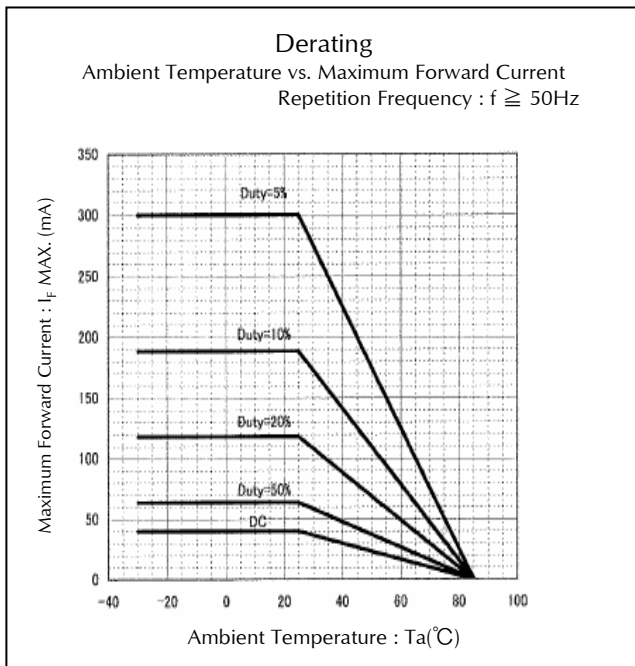
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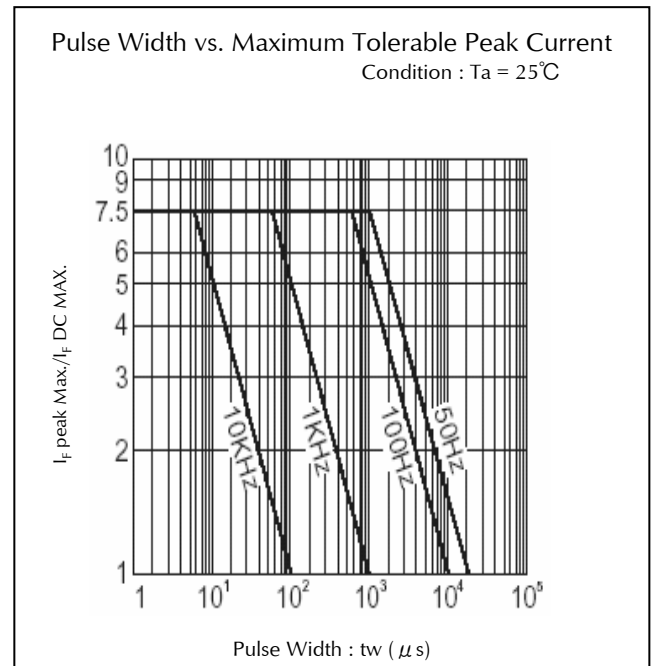
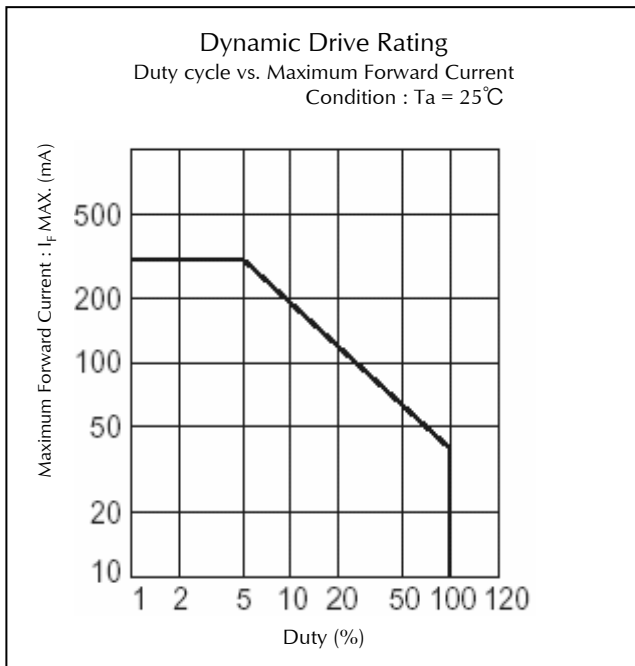
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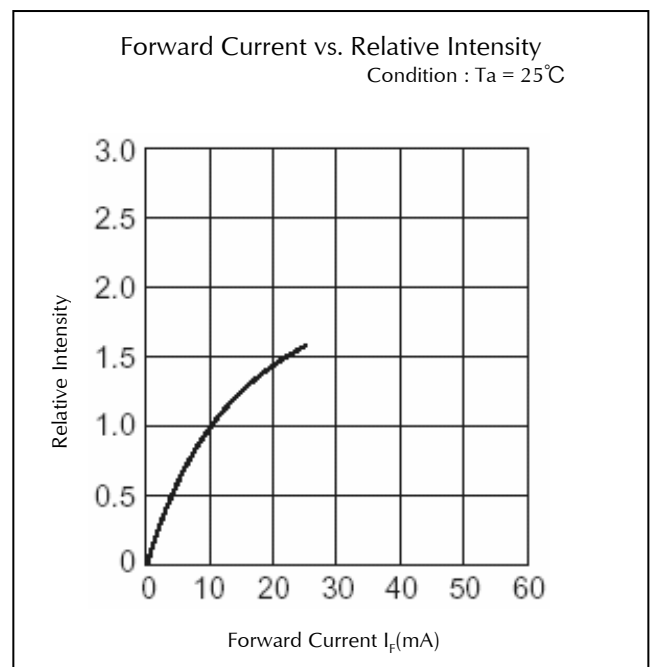
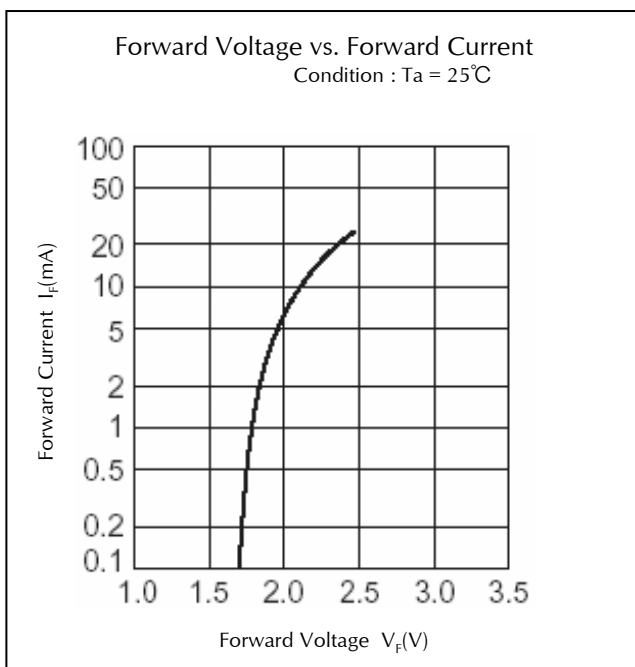
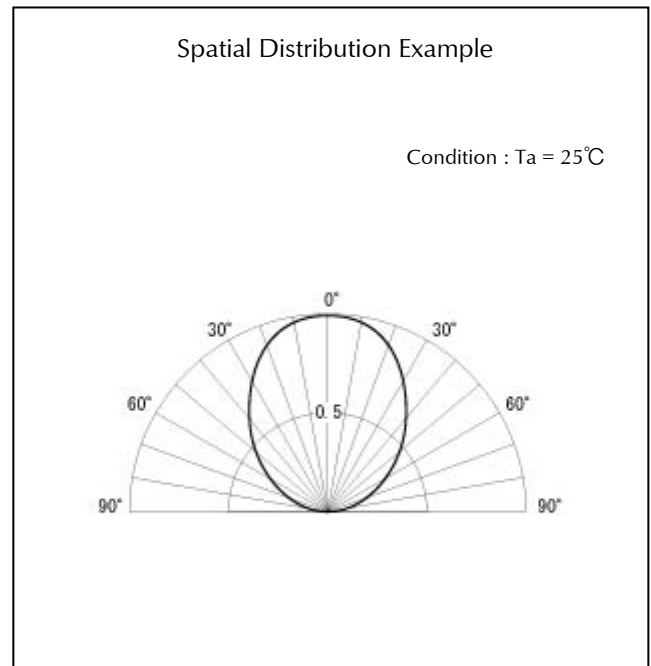
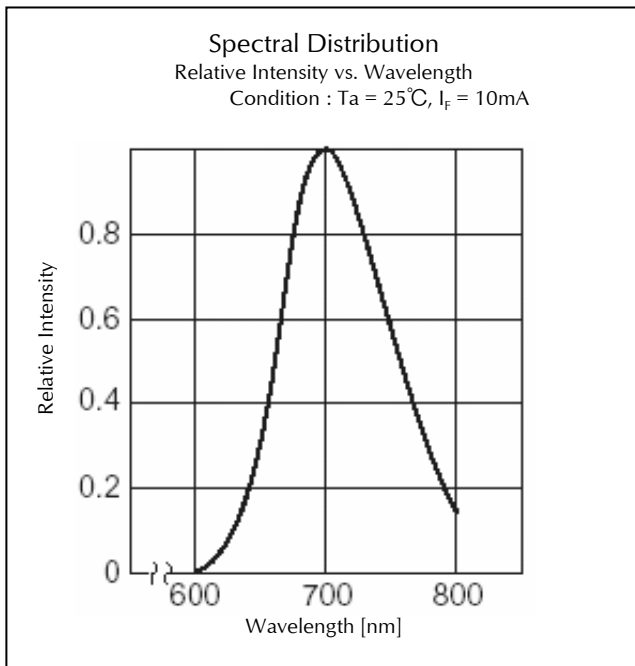
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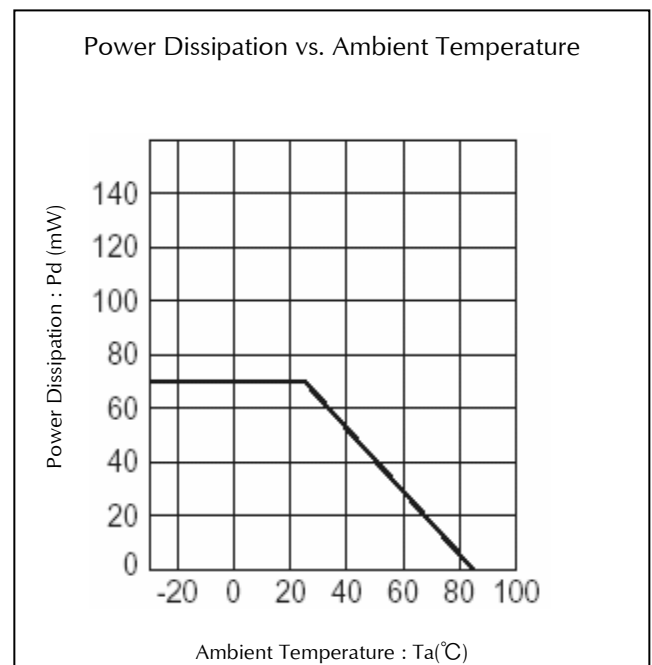
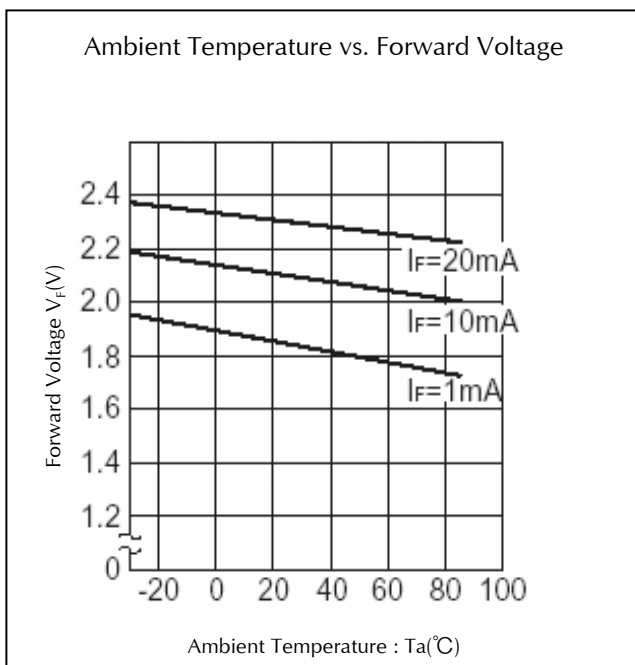
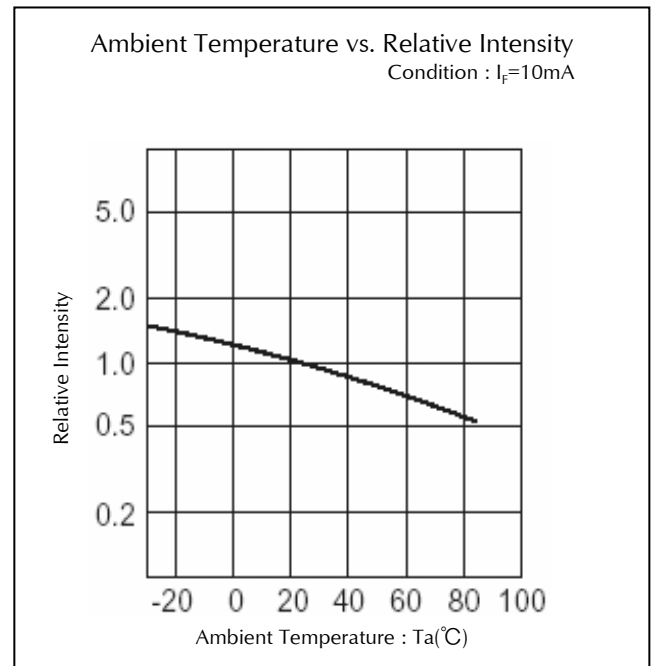
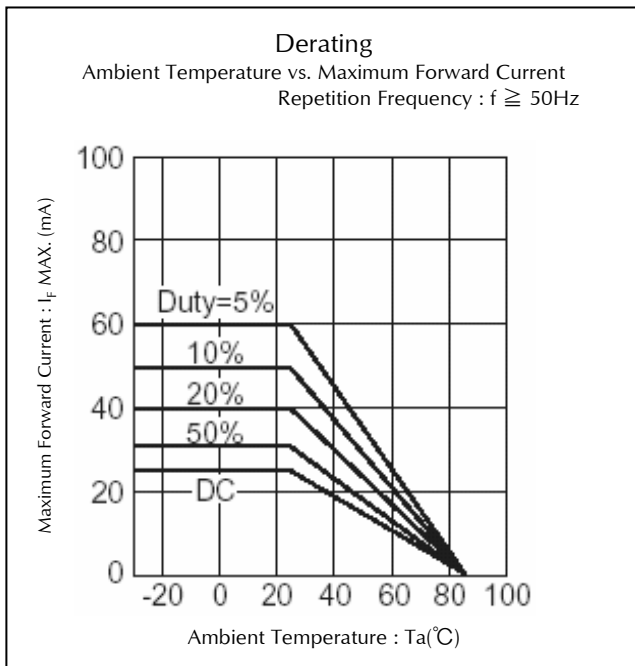
Technical Data(BR)



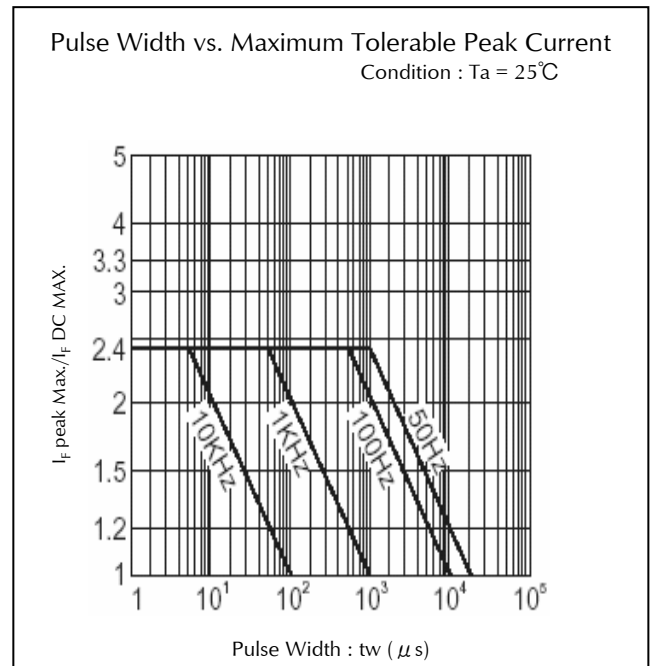
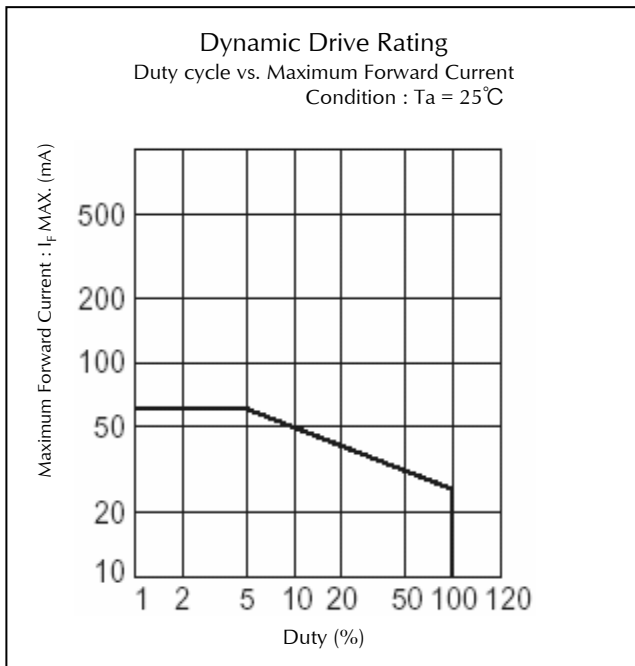
Technical Data(MPR)



Technical Data(MPR)

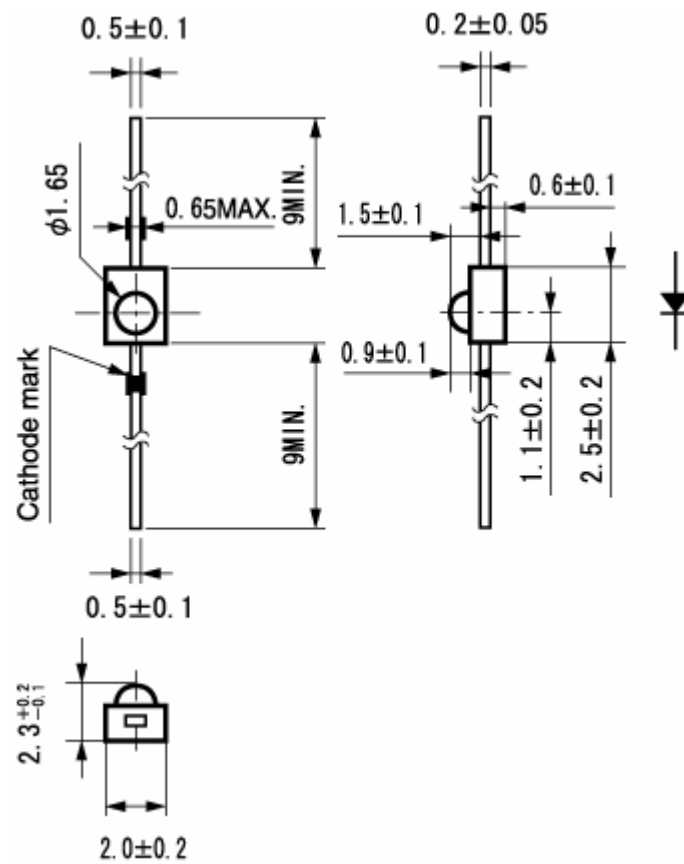


Technical Data(MPR)



Package Dimensions

(Unit: mm)



TTW (Through The Wave) soldering Conditions

Pre-heating	100 °C	(MAX.)
Solder Bath Temp.	265°C	(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°C	(MAX.)
Soldering time and frequency	3 s	(MAX.)
	2 times	(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	EIAJ ED-4701/100(101)	Ta = 25°C, If = Maximum Rated Current	1,000 h	0/25
Resistance to Soldering Heat	EIAJ ED-4701/300(302)	260±5°C, 3mm from package base	10sec	0/25
Temperature Cycling	EIAJ ED-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	EIAJ ED-4701/100(103)	Ta = 60±2°C, RH = 90±5%	1,000 h	0/25
High Temp. Storage Life	EIAJ ED-4701/200(201)	Ta = Maximum Rated Storage Temperature	1,000 h	0/25
Low Temp. Storage Life	EIAJ ED-4701/200(202)	Ta = Minimum Rated Storage Temperature	1,000 h	0/25
Lead Tension	EIAJ ED-4701/400(401)	10N, 1time (□0.4 and Flat Package : 5N)	10sec	0/10
Vibration, Variable Frequency	EIAJ ED-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	If Value of each product Luminous Intensity	Testing Min. Value < Spec. Min. Value x 0.5
Forward Voltage	V _F	If 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	-	-	No notable, decoloration, deformation and cracking

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