



Pb-free
HEAT

STANLEY

5364X Series

Single Color High Brightness ϕ 5 Type

Features

Package	ϕ 5 Round shape type, YPY,FY : Pale Yellow Clear epoxy FA : Pale Orange Clear epoxy FR : Pale Red Clear epoxy
Product features	• Outer Dimension ϕ 5 Round shape type • Operation temperature range. Storage Temperature : -40°C~100°C Operating Temperature : -40°C~85°C • No lead package and lead-free soldering compatible • RoHS compliant
Dominant wavelength	Yellow Green : 572nm (YPY) Yellow : 590nm (FY) Orange : 605nm (FA) Red : 626nm (FR)
Half Intensity Angle	YPY,FY,FA,FR : 35 deg.
Die materials	YPY,FY,FA,FR : AlGaInP
Rank grouping parameter	Sorted by luminous intensity per rank taping
Soldering methods	TTW (Through The Wave) soldering and manual soldering
ESD	AlGaInP : 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 λ_d (nm)		Luminous Intensity I_v (mcd)		
					TYP.	I _f	MIN.	TYP.	I _f
YPY5364X	AlGaInP	Yellow Green	Palle Yellow	Clear	572	20	150	300	20
FY5364X	AlGaInP	Yellow			590	20	320	640	20
FA5364X	AlGaInP	Orange	Pale Orange		605	20	390	780	20
FR5364X	AlGaInP	Red	Pale Red		626	20	290	580	20

Absolute Maximum Ratings

(Ta=25°C)

Item	Symbol	Absolute Maximum Ratings				Unit
		YPY	FY	FA	FR	
Power Dissipation	P_d	130	125	125	125	mW
Forward Current	I_F	50	50	50	50	mA
Pulse Forward Current ※1	I_{FRM}	200	200	200	200	mA
Derating (Ta=25°C or higher)	ΔI_F	0.67	0.67	0.67	0.67	mA/°C
Reverse Voltage	V_R	5	5	5	5	V
Operating Temperature	T_{opr}	-40~+85				°C
Storage Temperature	T_{stg}	-40~+100				°C

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

Electro-Optical Characteristics

(Ta=25°C)

Item	Conditions	Symbol	Characteristics				
				YPY	FY	FA	FR
Forward Voltage	$I_F=20\text{mA}$	V_F	TYP.	2.1	1.9	1.9	1.9
			MAX.	2.5	2.4	2.4	2.4
Reverse Current	$V_R=5\text{V}$	I_R	MAX.	100	100	100	100
Peak Wavelength	$I_F=20\text{mA}$	λ_p	TYP.	575	592	609	635
Dominant Wavelength	$I_F=20\text{mA}$	λ_d	TYP.	572	590	605	626
Spectral Line Half Width	$I_F=20\text{mA}$	$\Delta\lambda$	TYP.	15	15	15	15
Half Intensity Angle	$I_F=20\text{mA}$	$2\theta_{1/2}$	TYP.	35	35	35	35

Luminous Intensity Rank

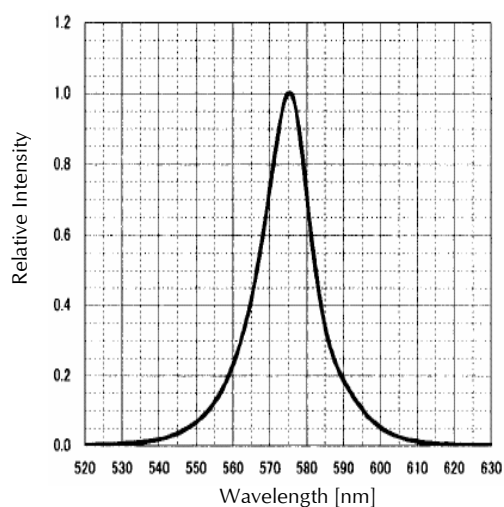
(Ta=25°C)

Rank	I _v (mcd)								Condition
	YPY		FY		FA		FR		
	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	
A	150	300	320	640	390	780	290	580	I _F = 20mA
B	210	420	450	900	550	1,100	410	820	
C	300	600	640	1,280	780	1,560	580	1,160	
D	420	840	900	1,800	1,100	2,200	820	1,640	
E	600	-	1,280	-	1,560	-	1,160	-	

 Please contact our sales staff concerning rank designation.

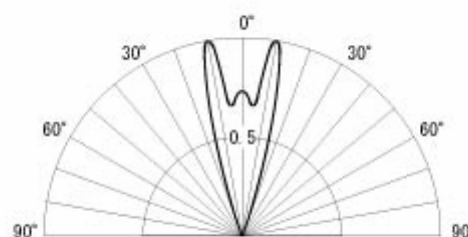
Technical Data(YPY)

Spectral Distribution
Relative Intensity vs. Wavelength
Condition : $T_a = 25^\circ\text{C}$, $I_F = 20\text{mA}$

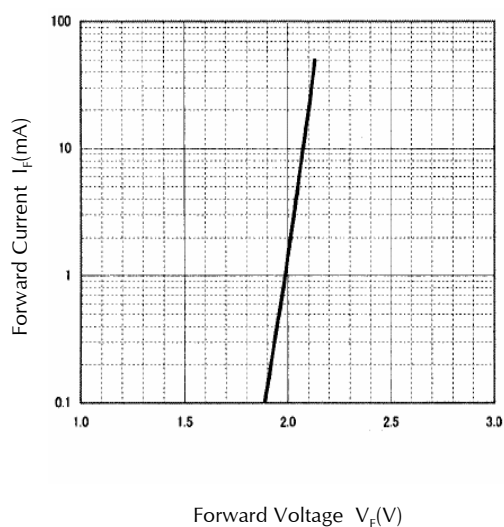


Spatial Distribution Example

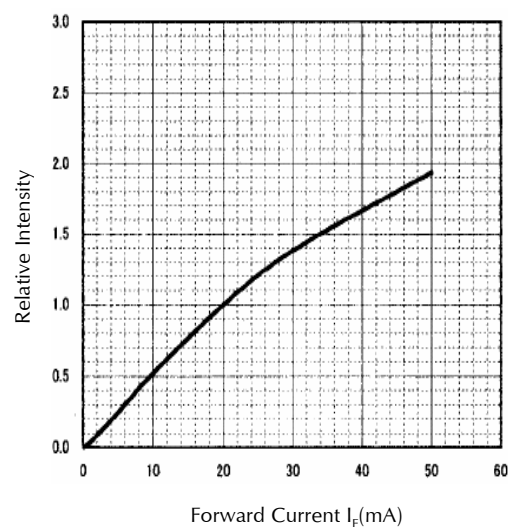
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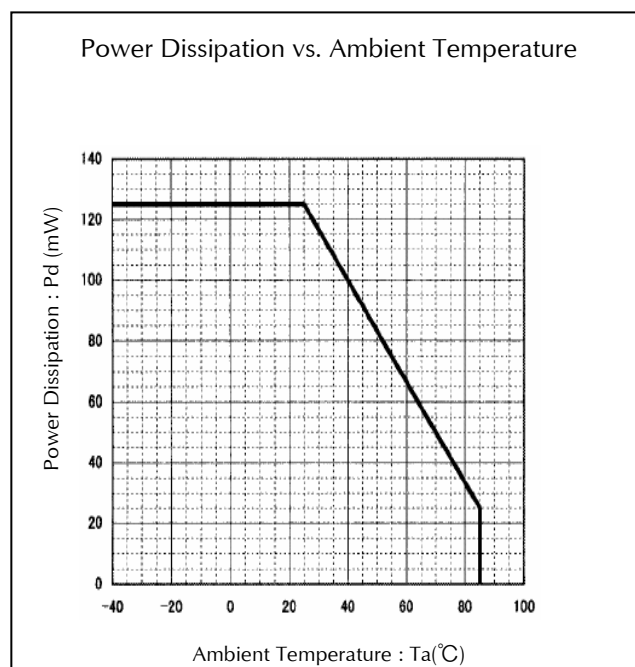
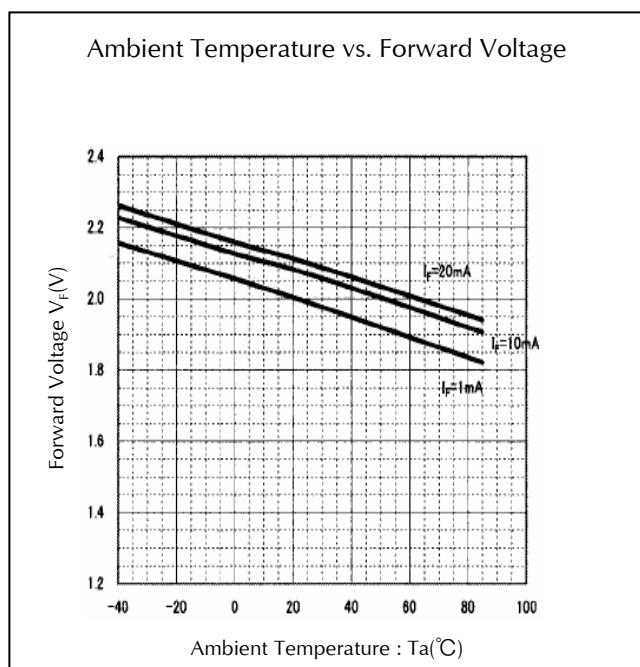
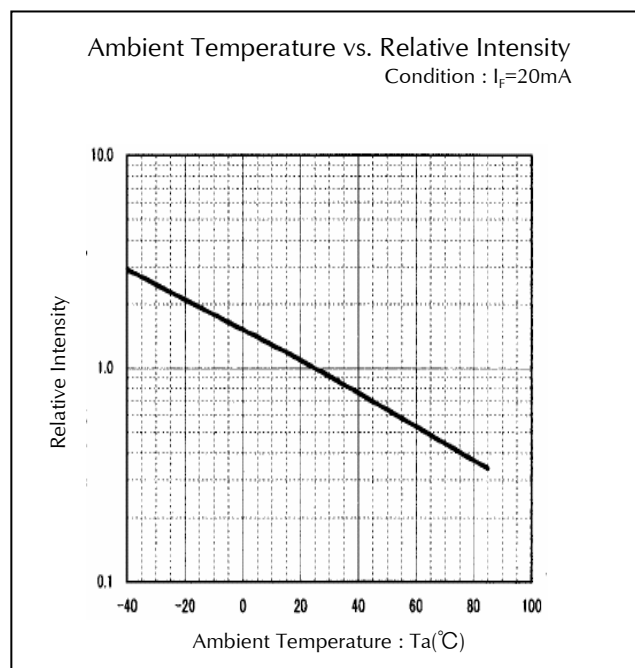
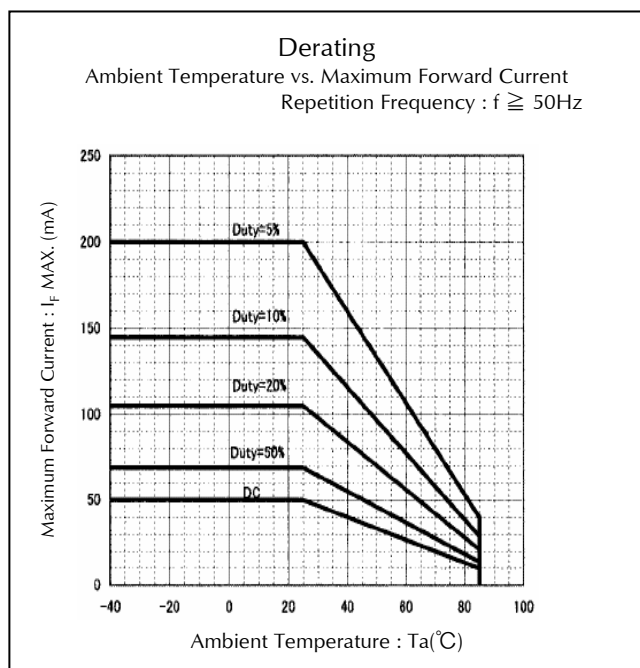
Forward Voltage vs. Forward Current
Condition : $T_a = 25^\circ\text{C}$



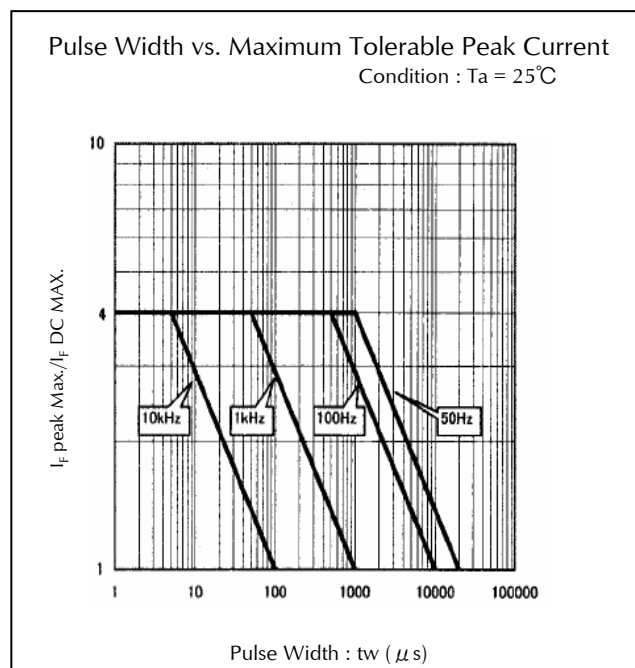
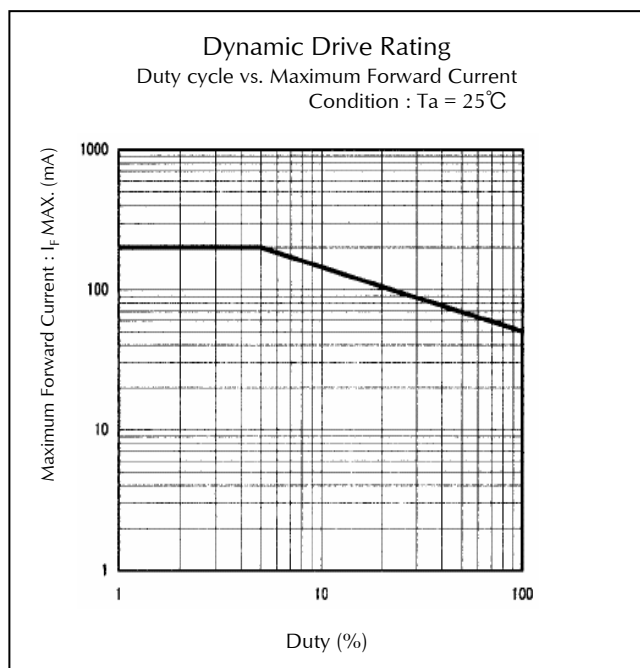
Forward Current vs. Relative Intensity
Condition : $T_a = 25^\circ\text{C}$



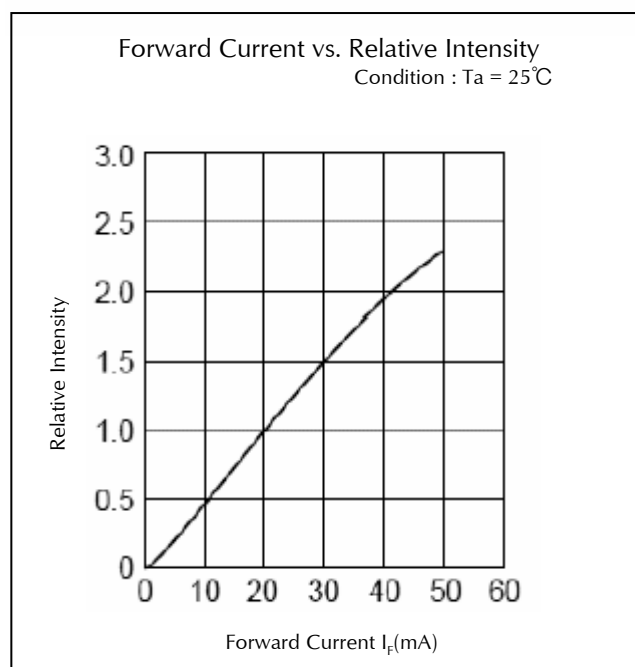
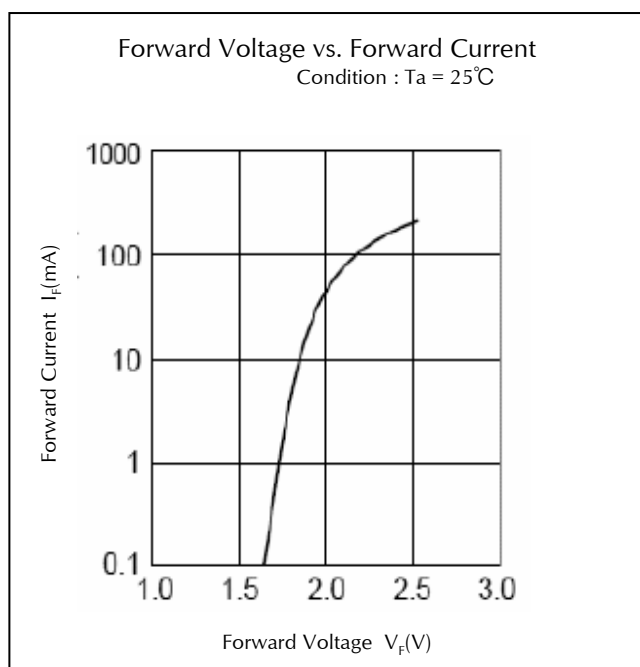
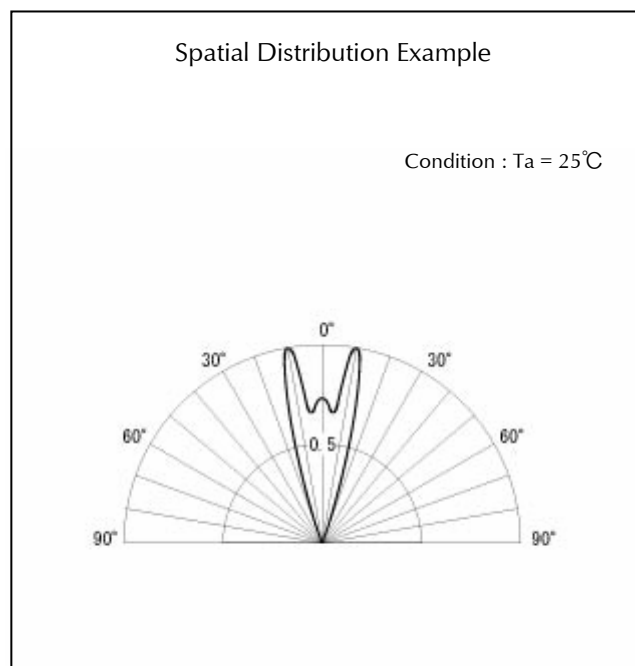
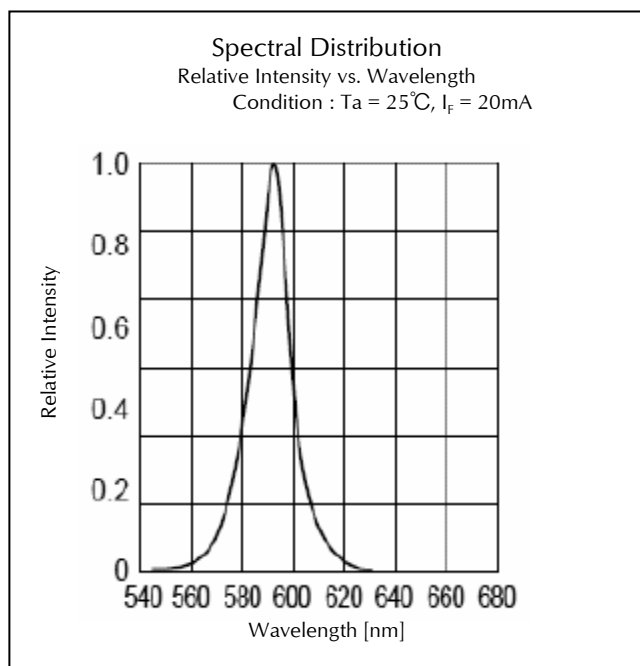
Technical Data(YPY)



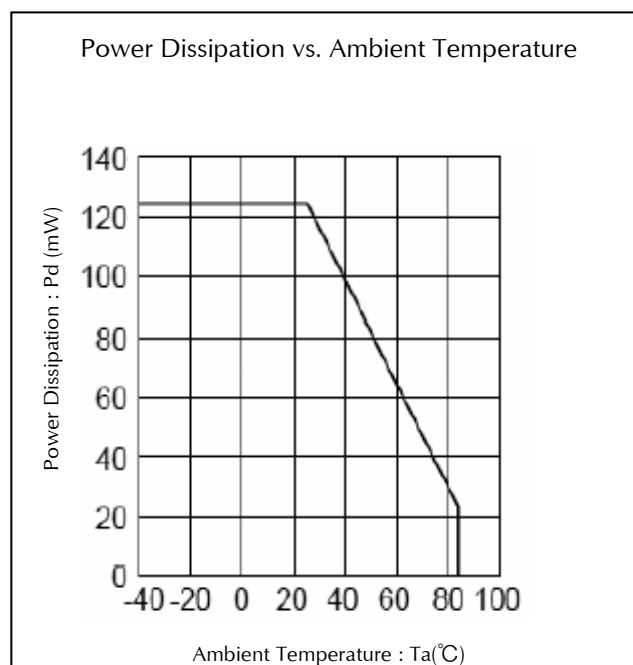
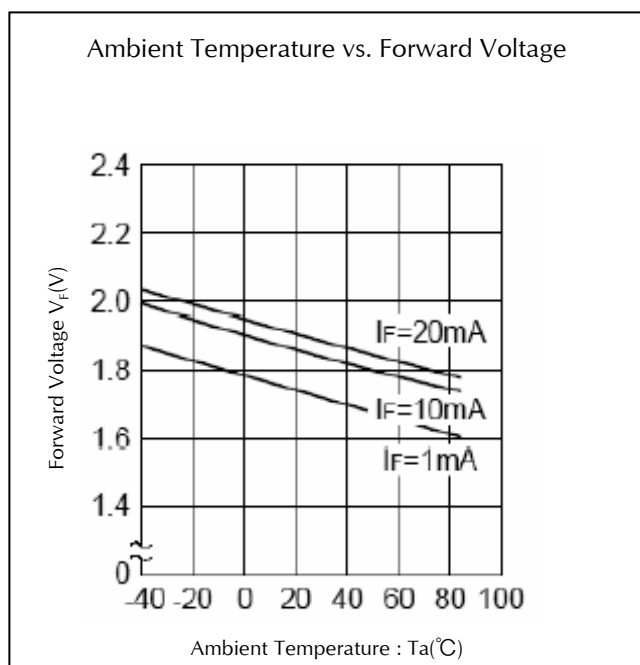
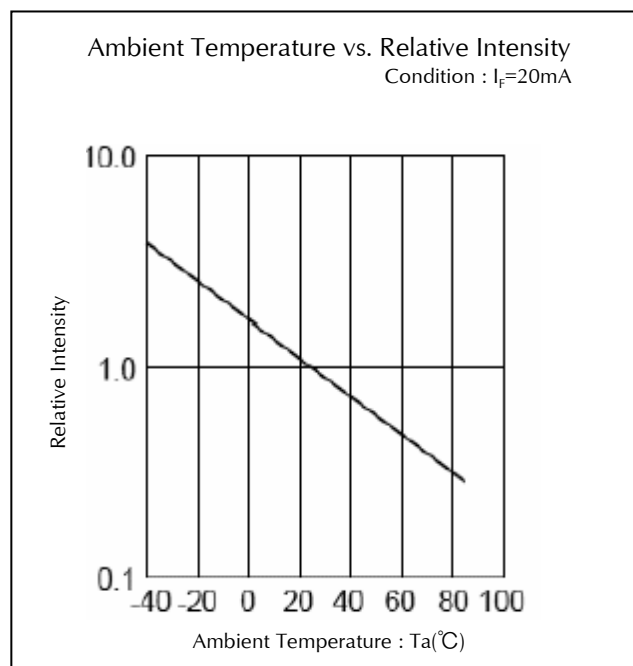
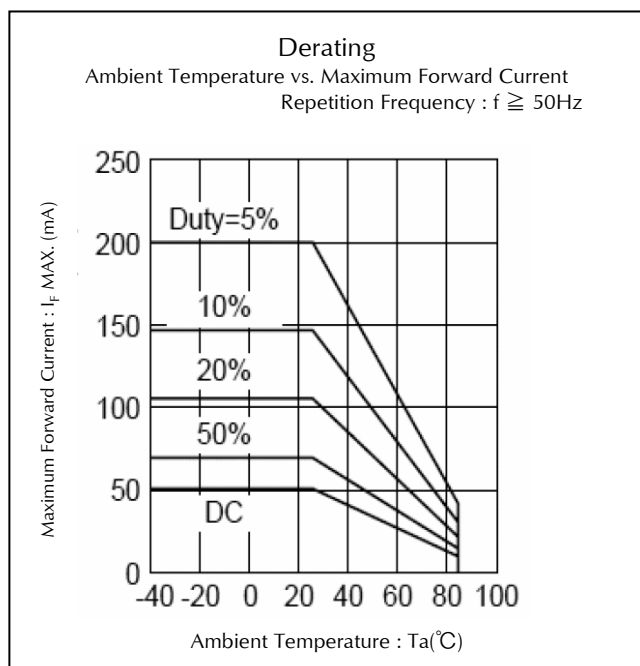
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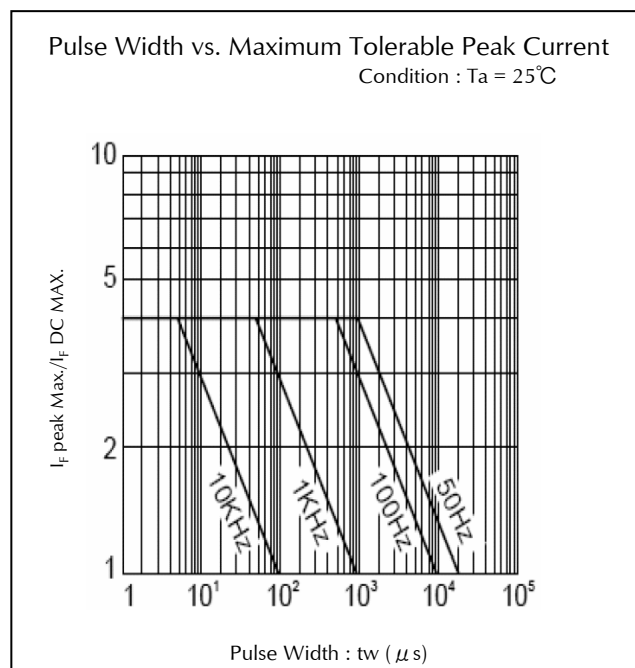
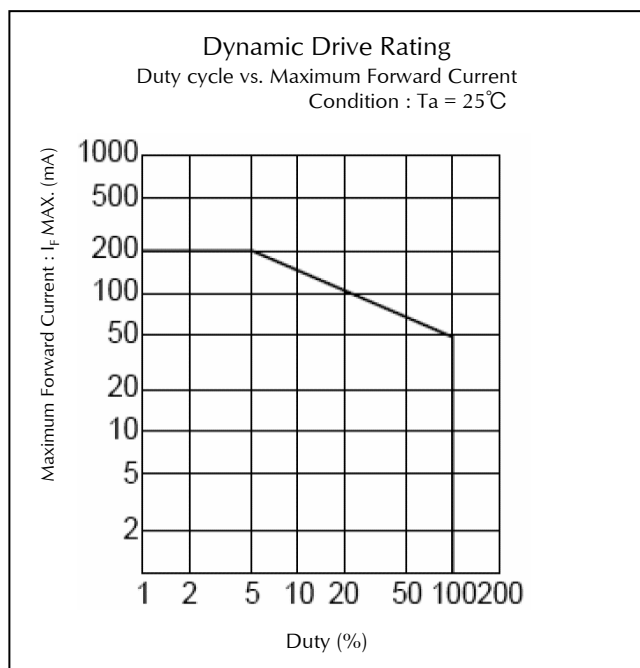
Technical Data(FY)



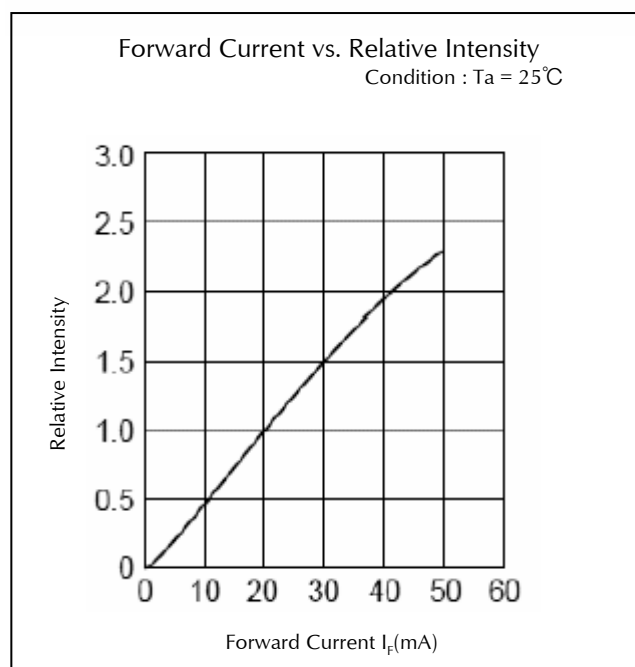
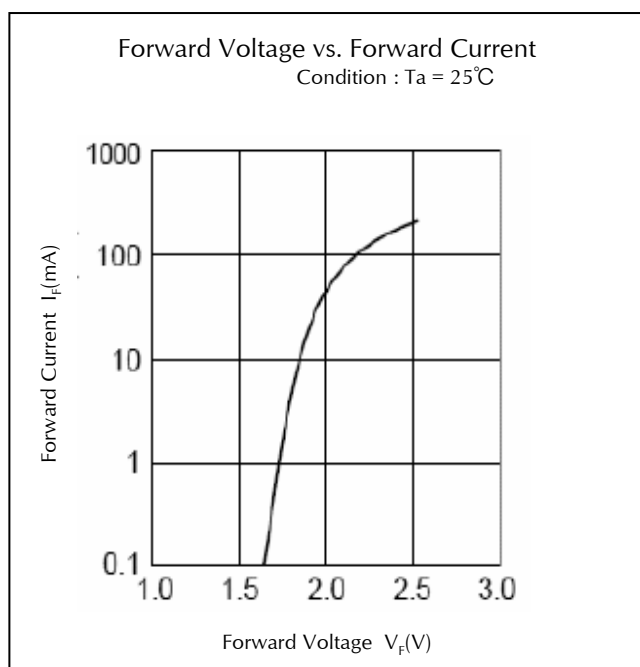
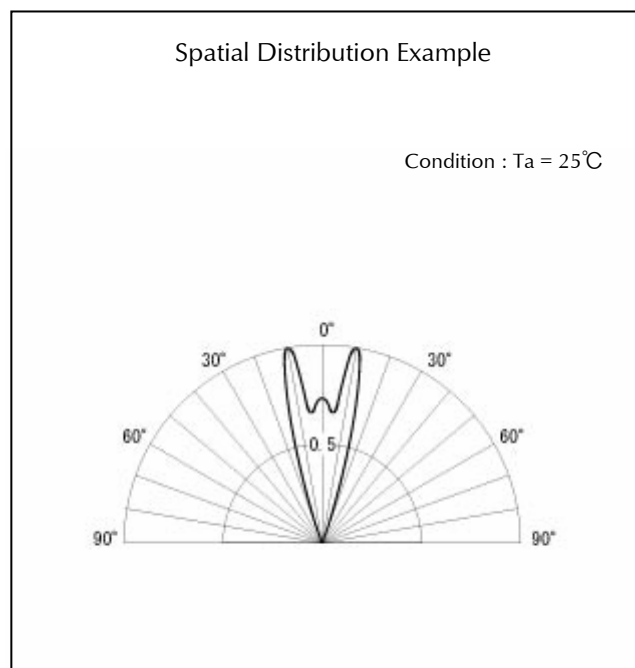
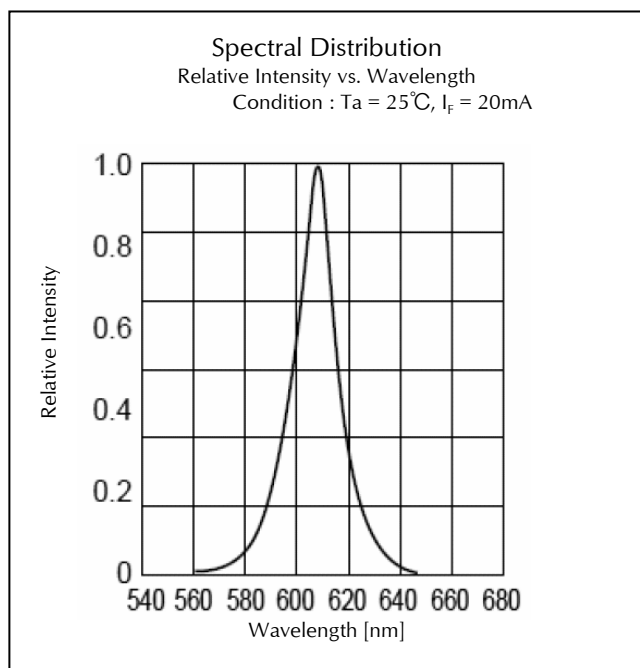
Technical Data(FY)



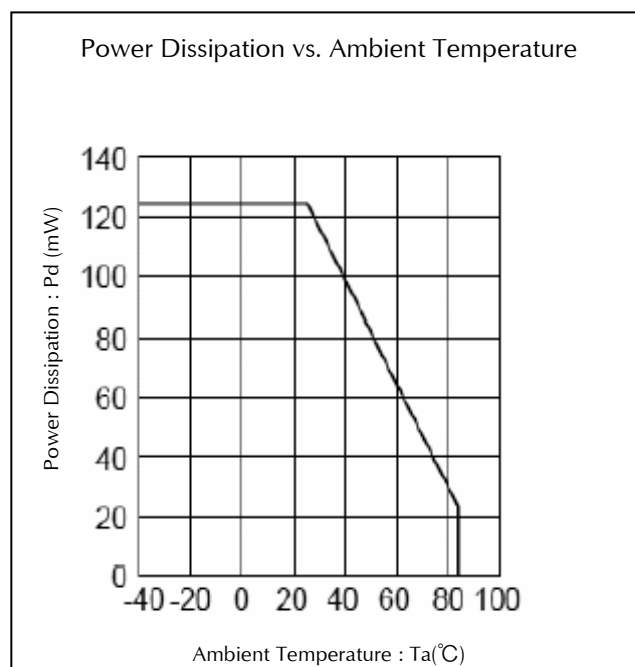
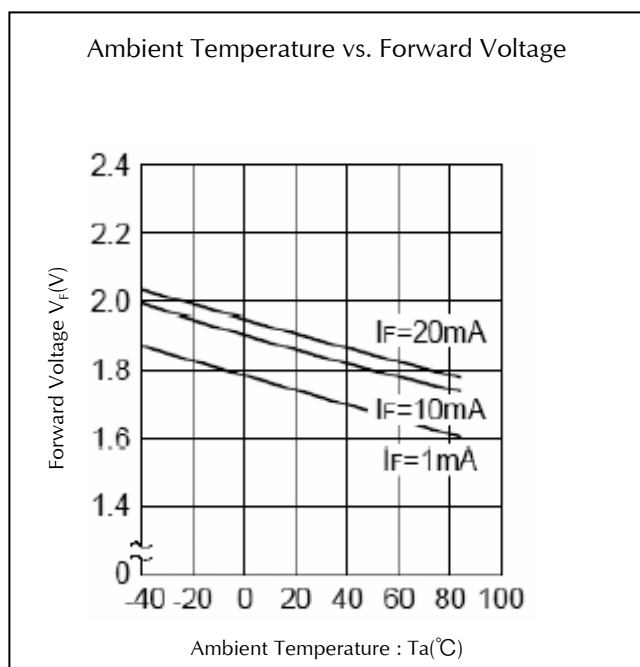
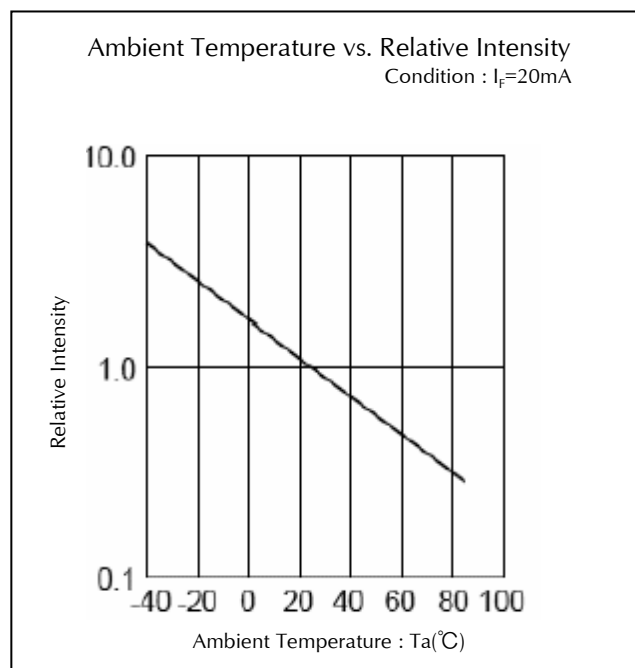
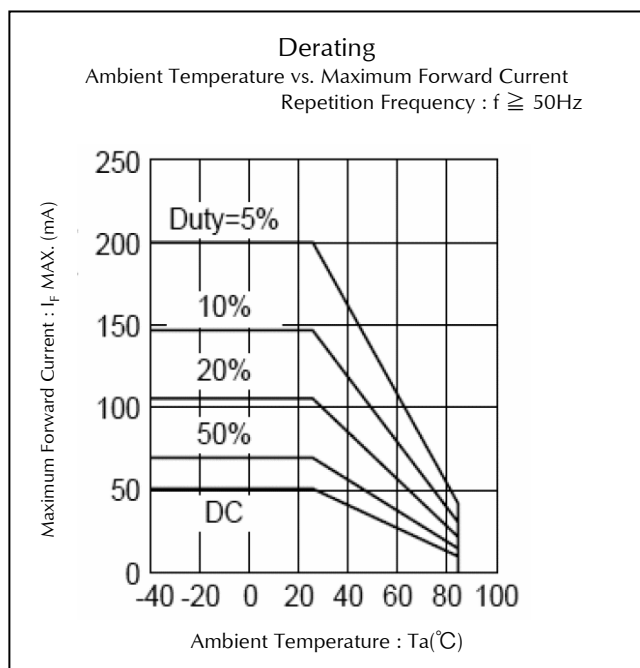
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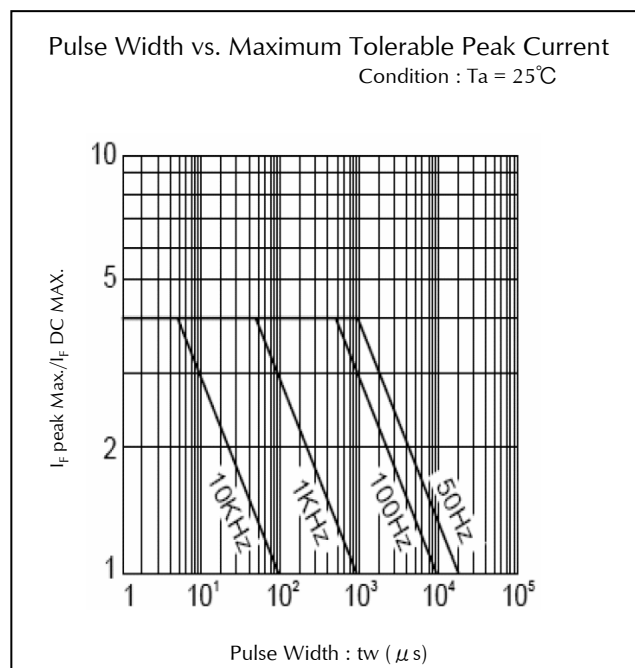
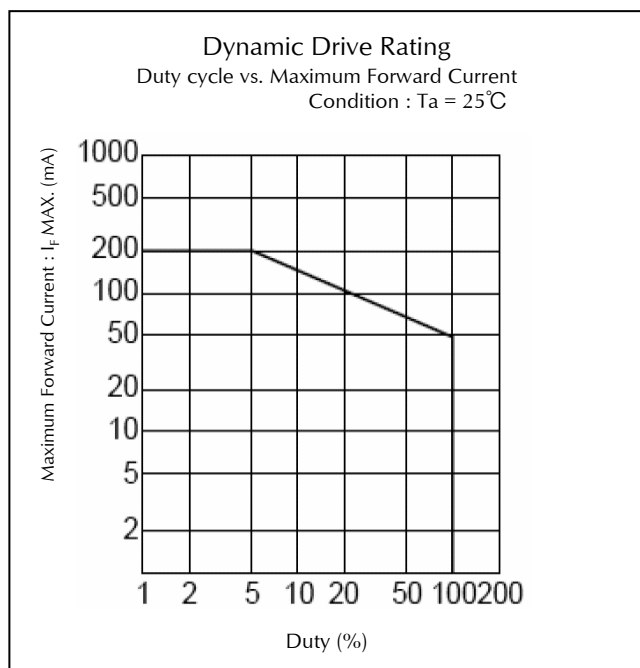
Technical Data(FA)



Technical Data(FA)

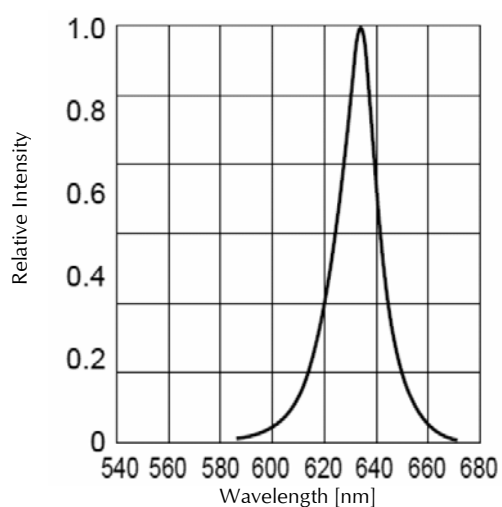


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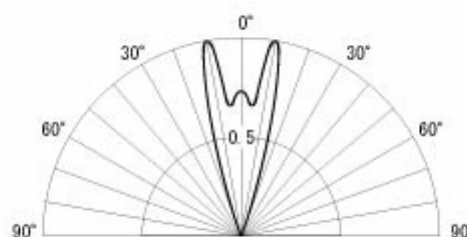
Technical Data(FR)

Spectral Distribution
Relative Intensity vs. Wavelength
Condition : $T_a = 25^\circ\text{C}$, $I_F = 20\text{mA}$

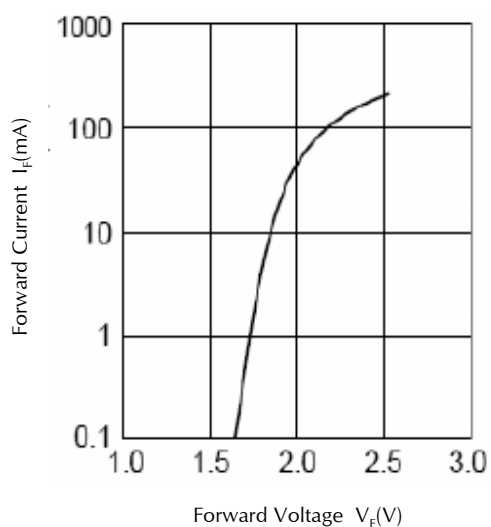


Spatial Distribution Example

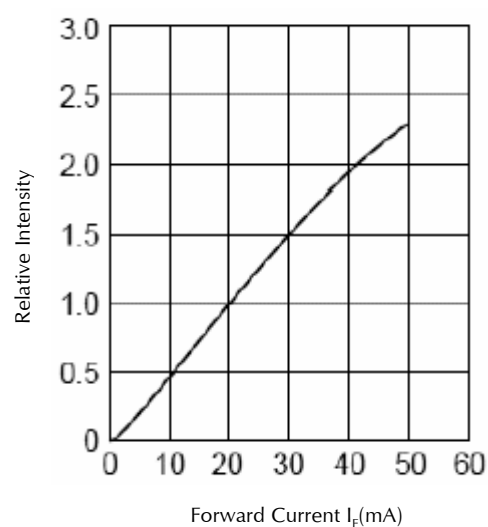
Condition : $T_a = 25^\circ\text{C}$



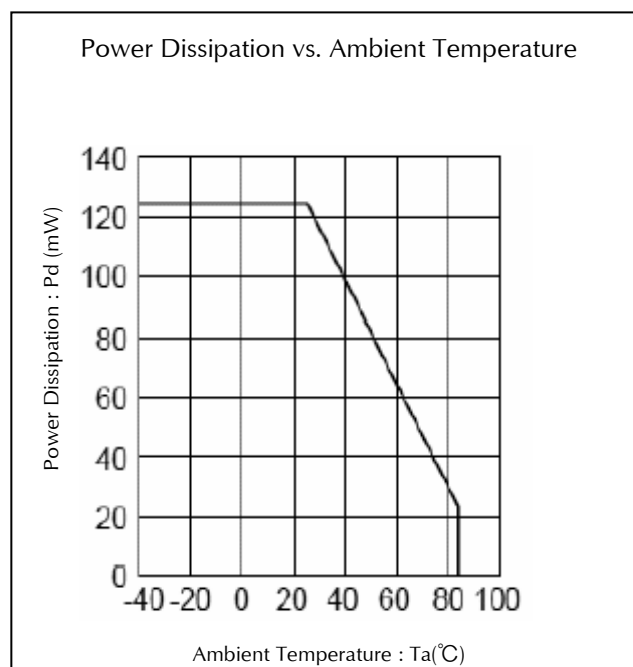
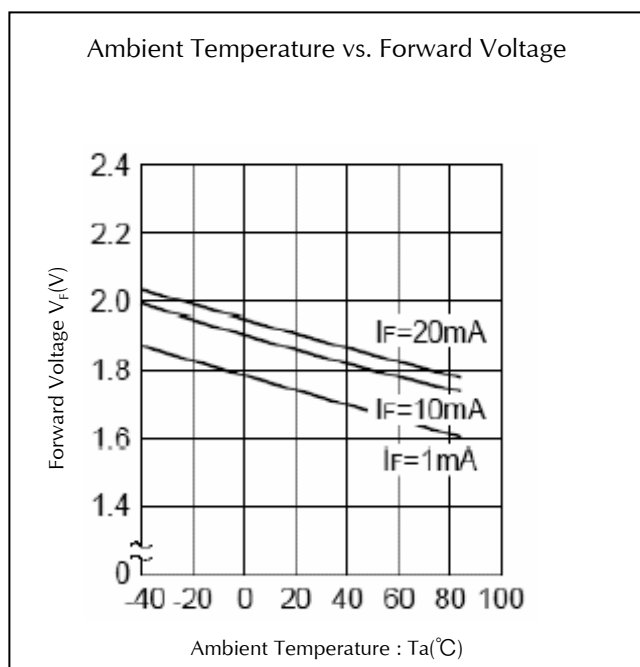
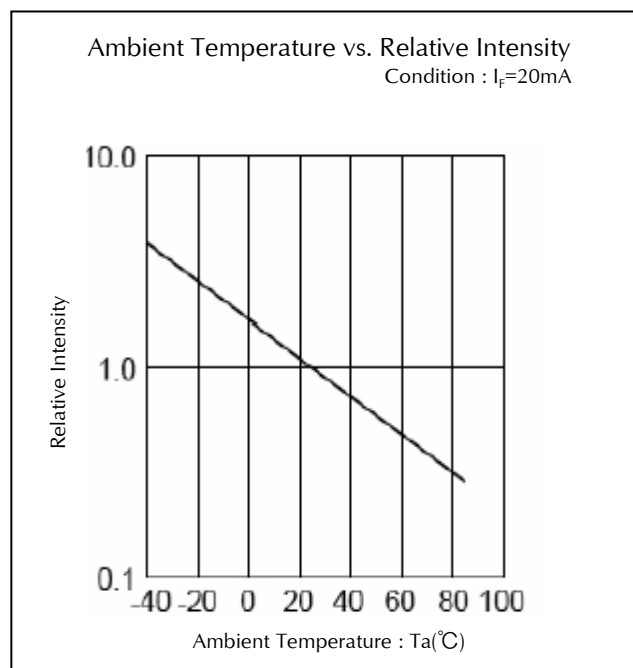
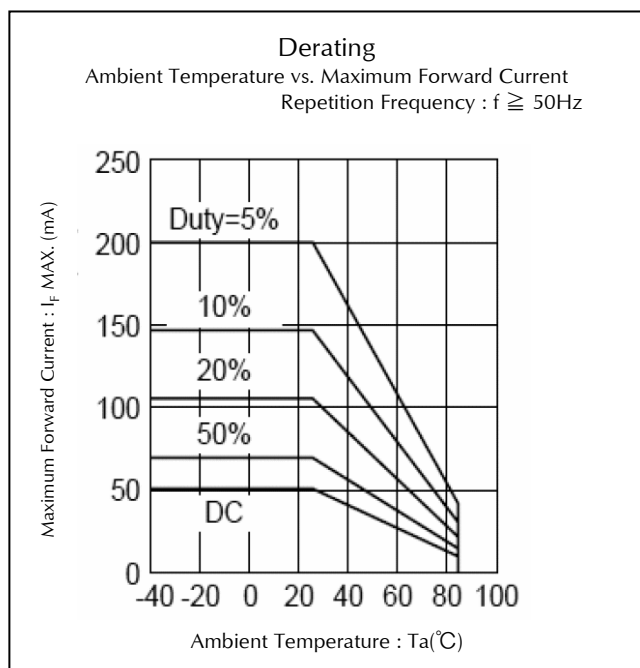
Forward Voltage vs. Forward Current
Condition : $T_a = 25^\circ\text{C}$



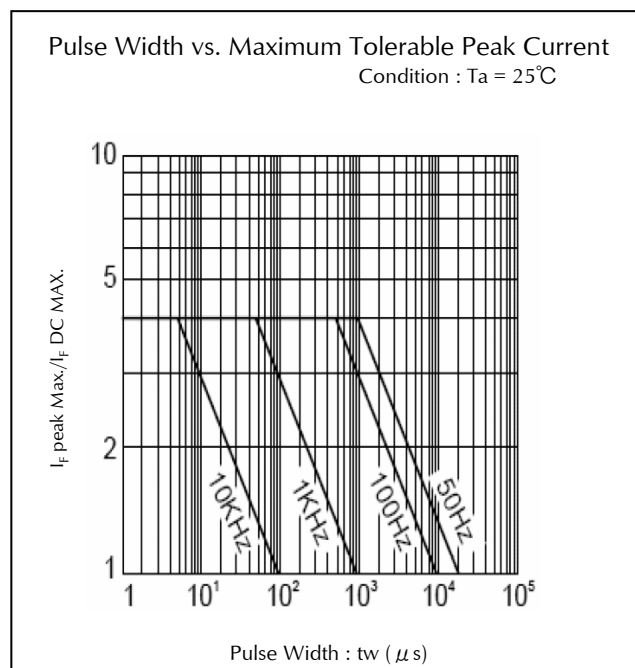
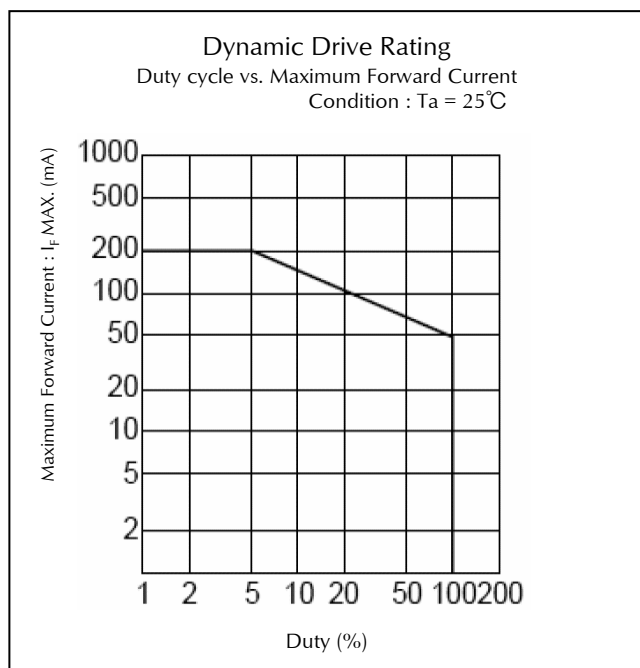
Forward Current vs. Relative Intensity
Condition : $T_a = 25^\circ\text{C}$



Technical Data(FR)

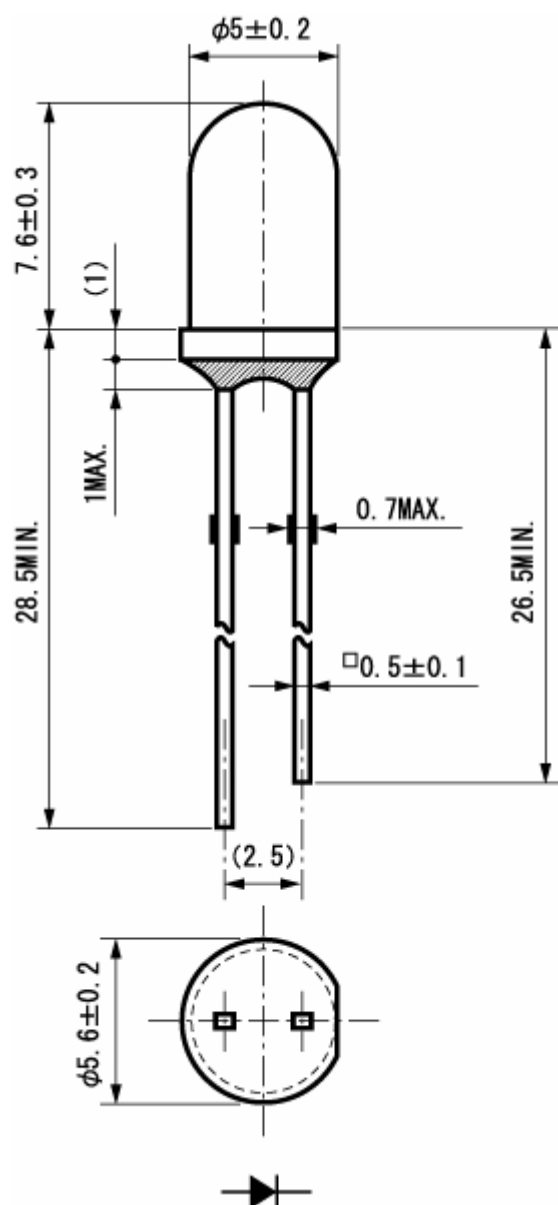


Technical Data(FR)



Package Dimensions

(Unit: mm)



TTW (Through The Wave) soldering Conditions

Pre-heating	100 °C 60 s	(MAX.) (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 normal temperature before the second dipping process.

Manual Soldering Conditions

Iron tip temp.	400 °C	(MAX.)
Soldering time and frequency	3 s 2 times	(MAX.) (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	0/25
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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