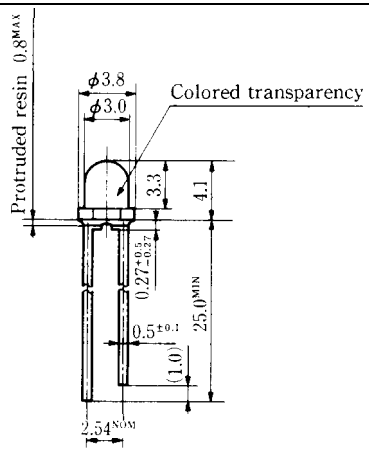
GL3□□43 Series φ3mm(T-1) Cylinder Type LED Lamps

■ Model No.

GL3UR43 Red (Super-luminosity)	GaAlAs/GaAlAs
GL3LR43 Red (High-luminosity)	GaAlAs/GaAs
GL3TR43 Red (High-luminosity)	GaAlAs/GaAs
GL3PR43 Red	GaP
GL3HD43 Red	GaAsP/GaP
GL3HS43 Sunset orange	GaAsP/GaP
GL3HY43 Yellow	GaAsP/GaP
GL3EG43 Yellow-green	GaP
GL3KG43 Green	GaP

■ Outline Dimensions (Unit: mm)



■ Features

1. φ3mm(T-1) all resin mold
2. Colored transparency lens type
3. Wide viewing angle

■ Absolute Maximum Ratings (Ta=25℃)

Parameter		Symbol	GL3UR43 / GL3LR43 / GL3TR43 / GL3PR43 / GL3HD43 / GL3HS43 / GL3HY43 / GL3EG43 / GL3KG43	Unit
Power dissipation		P	75 / 110 / 23 / 84 / 84	mW
Continuous forward current		I_F	30 / 50 / 10 / 30 / 30	mA
※1 Peak forward current		I_{FM}	50 / 300 / 50 / 50 / 50	mA
Derating factor	DC	—	0.40 / 0.67 / 0.13 / 0.40 / 0.40	mA/℃
	Pulse	—	0.67 / 4.00 / 0.67 / 0.67 / 0.67	mA/℃
Reverse voltage		V_R	4 / 5 / 5 / 5 / 5	V
Operating temperature		T_{opr}	−25 to +85	℃
Storage temperature		T_{stg}	−25 to +100	℃
※2 Soldering temperature		T_{sol}	260(within 5 seconds)	℃

※1 Duty ratio = 1/10 , Pulse width = 0.1ms
Duty ratio = 1/16 , Pulse width ≦ lms for GL3LR43 and GL3TR43
※2 At the position of 1.6mm from the bottom face of resin package

"In the absence of confirmation by device specification sheets, SHARP takes no responsibility for any defects that occur m equipment using any of SHARPS devices, shown m catalogs, data books, etc. Contact SHARP in order to obtain the latest version of the device specification sheets before using any SHARPS device."

GL3UR43 (Red)

■ Electro-optical Characteristics

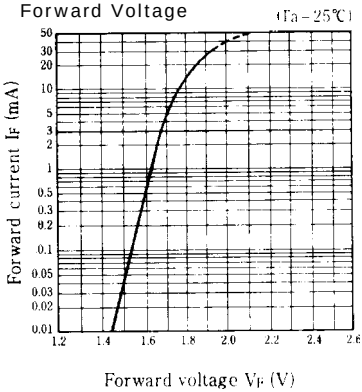
(Ta=25℃)

Parameter	Symbol	Model No.	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V_F	GL3UR43	I_F=20mA	–	185	2.5	V
※3 Luminous intensity	Iv	GL3UR43	I_F=20mA	50	100	–	mcd
Peak emission wavelength	λ_p	GL3UR43	I_F=20mA		660	–	nm
Spectrum radiation bandwidth	$\Delta\lambda$	GL3UR43	I_F=20mA	–	20	–	nm
Reverse current	I_R	GL3UR43	V_R=3V		–	100	μA
Terminal capacitance	C_t	GL3UR43	V =0V f=MHz	–	25	–	pF
Response frequency	f_c	GL3UR43	–	–	8	–	MHz

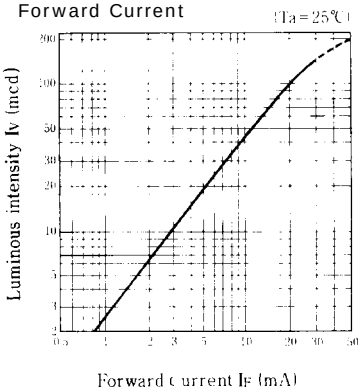
※3 **Tolerance:** ±30%

■ Characteristics Diagrams

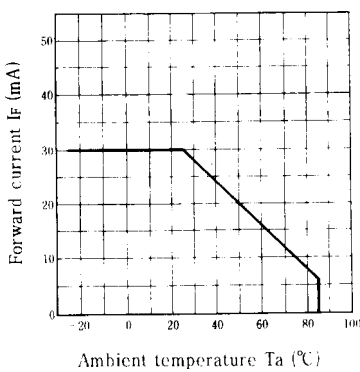
Forward Current vs. Forward Voltage (Ta=25℃)



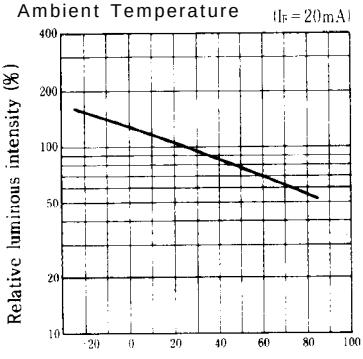
Luminous Intensity vs. Forward Current (Ta=25℃)



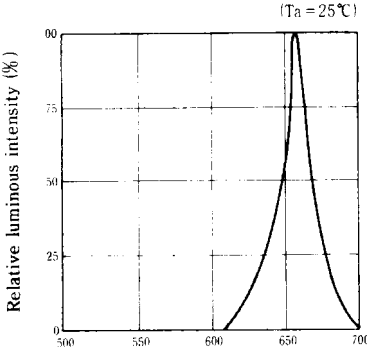
Forward Current Derating Curve



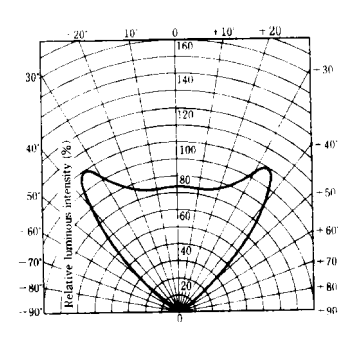
Relative Luminous Intensity vs. Ambient Temperature (I_F=20mA)



Spectrum Distribution (Ta=25℃)



Radiation Diagram (Ta=25℃)



GL3LR43 (Red) / GL3TR43 (Red)

■ **Electro-optical** Characteristics

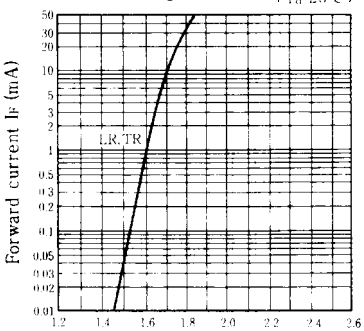
(Ta=25℃)

Parameter	Symbol	Model No,	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V_F	GL3LR43	I_F=20mA	–	1,75	2.2	V
		GL3TR43	I_F=20mA		1.75	2.2	
※3 Luminous intensity	I_V	GL3LR43	I_F=20mA	20	40	–	‘cd
		GL3TR43	I_F=20mA	10	20	–	
Peak emission wavelength	λ_p	GL3LR43	I_F=20mA	–	660	–	‘m
		GL3TR43	I_F=20mA		660	–	
Spectrum radiation bandwidth	$\Delta\lambda$	GL3LR43	I_F=20mA		20	–	‘m
		GL3TR43	I_F=20mA	–	20	–	
Reverse current	I_R	GL3LR43	V_R=4V		–	10	μA
		GL3TR43	V_R=4V	–	–	10	
Terminal capacitance	C_t	GL3LR43	V=OV f=1MHz	–	30	–	pF
		GL3TR43	V=0V f=1 MHz	–	30	–	
Response frequency	f_c	GL3LR43	–		8	–	MHz
		GL3TR43	–	–	8	–	

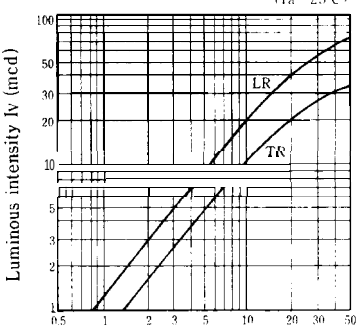
※3 Tolerance: ±30%

■ Characteristics Diagrams

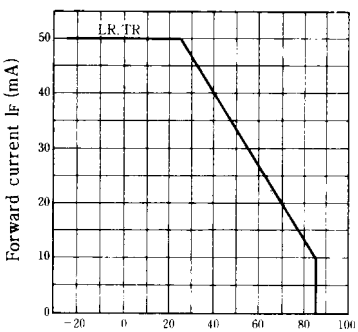
Forward Current vs. Forward Voltage (Ta 25℃)



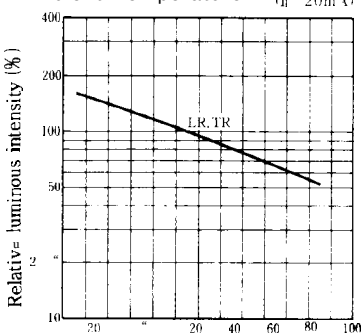
Luminous Intensity vs. Forward Current (Ta=25℃)



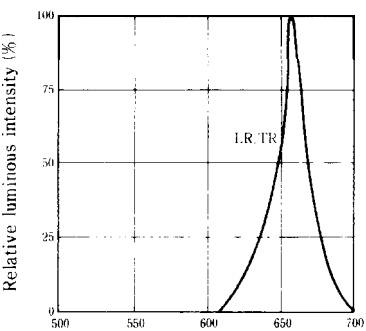
Forward Current Derating Curve



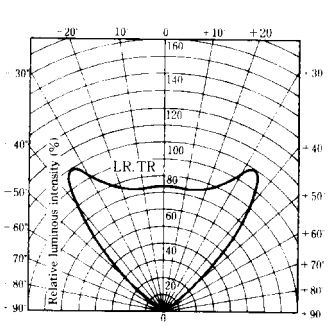
Relative Luminous Intensity vs. Ambient Temperature (I_F=20mA)



Spectrum Distribution (Ta=25℃)



Radiation Diagram (Ta=25℃)



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GL3PR43 (Red) / GL3HD43 (Red)

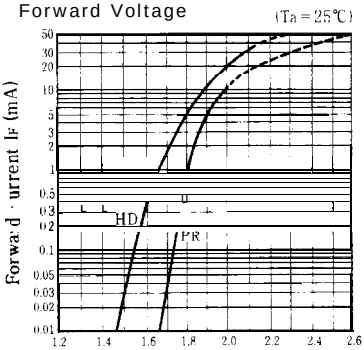
■ Electro-optical Characteristics (Ta=25℃)

Parameter	Symbol	Model No.	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V_F	GL3PR43	I_F=5mA	—	1.9	2.3	V
		GL3HD43	I_F=20mA	—	2.0	2.8	
※3 Luminous intensity	I_V	GL3PR43	I_F=5mA	1.0	3.0	—	mcd
		GL3HD43	I_F=20mA	7.0	25	-	
Peak emission wavelength	λ_p	GL3PR43	I_F=5mA	—	695	—	‘m
		GL3HD43	I_F=20mA	—	635	—	
Spectrum radiation bandwidth	$\Delta\lambda$	GL3PR43	I_F=5mA		100	—	‘m
		GL3HD43	I_F=20mA		35	—	
Reverse current	I_R	GL3PR43	V_R=4V	—	—	10	μA
		GL3HD43	V_R=4V			10	
Terminal capacitance	C_t	GL3PR43	V=OV f=1MHz	—	55	—	pF
		GL3HD43	V=OV f=1MHz	—	20	—	
Response frequency	f_c	GL3PR43	—	—	4	—	MHz
		GL3HD43	—	—	4	—	

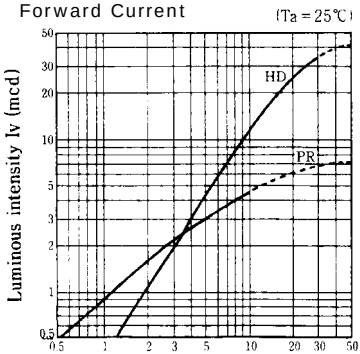
※3 Tolerance: ±30%

■ Characteristics Diagrams

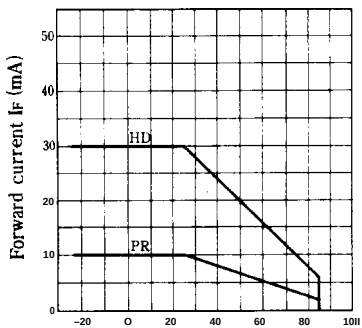
Forward Current vs. Forward Voltage



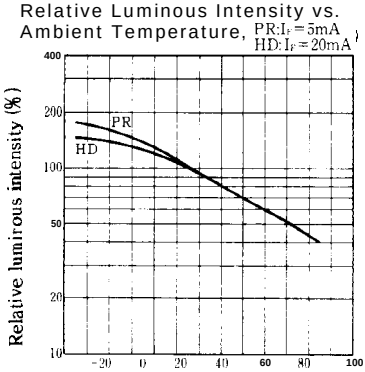
Luminous Intensity vs. Forward Current



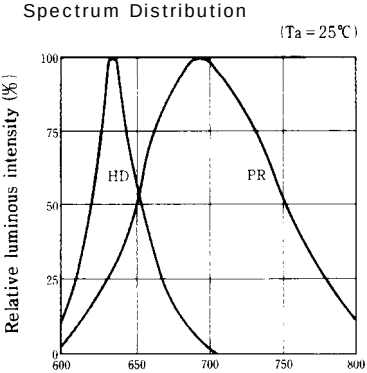
Forward Current Derating Curve



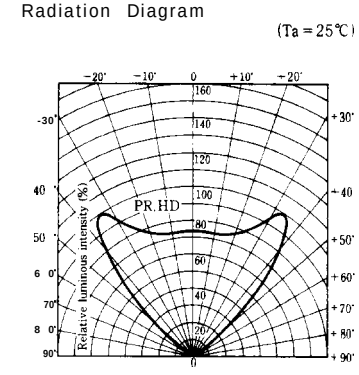
Relative Luminous Intensity vs. Ambient Temperature, PR:IF=5mA HD:IF=20mA



Spectrum Distribution



Radiation Diagram



GL3HS43 (Sunset orange) / GL3HY43 (Yellow)

■ Electro-optical Characteristics

(Ta = 25℃)

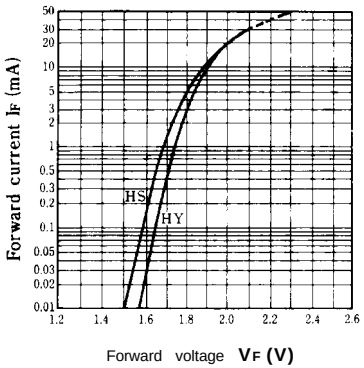
Parameter	Symbol	Model No.	Conditions	MIN.	TYP.	MAX,	Unit
Forward voltage	V_F	GL3HS43	I_F = 20mA	–	2.0	2,8	V
		GL3HY43	I_F = 20mA	–	2.0	2.8	
※3 Luminous intensity	Iv	GL3HS43	I_F = 20mA	7,0	25	–	‘cd
		GL3HY43	I_F = 20mA	7.0	25	–	
Peak emission wavelength	λ_p	GL3HS43	I_F = 20mA	–	610	–	‘m
		GL3HY43	I_F = 20mA	–	585	–	
Spectrum radiation bandwidth	$\Delta\lambda$	GL3HS43	I_F = 20mA	–	35	–	‘m
		GL3HY43	I_F = 20mA	–	30	–	
Reverse current	I_R	GL3HS43	V_R = 4V	–	–	10	μA
		GL3HY43	V_R = 4V	–	–	10	
Terminal capacitance	C_t	GL3HS43	V=0V f=1 MHz	–	15	–	pF
		GL3HY43	V=OV f=1MHz	–	35	–	
Response frequency	fc	GL3HS43	–	–	4	–	‘Hz
		GL3HY43	–	–	4	–	

※3 Tolerance: ±30%

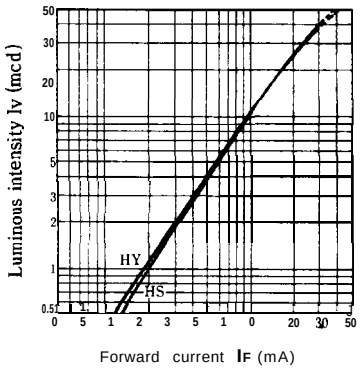
3

■ Characteristics Diagrams

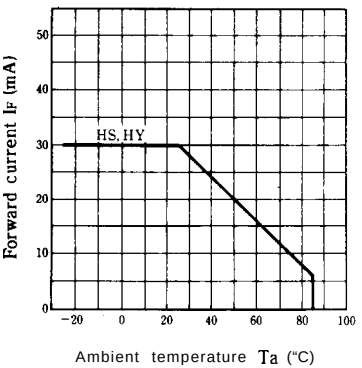
Forward Current vs. Forward Voltage



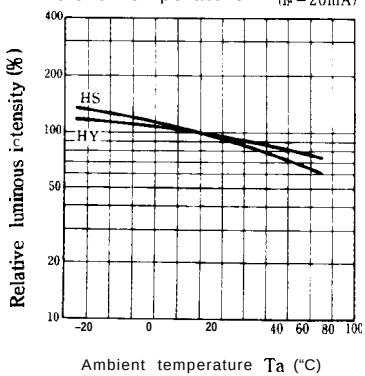
Luminous Intensity vs. Forward Current



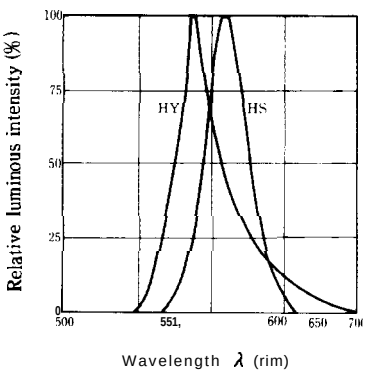
Forward Current Derating Curve



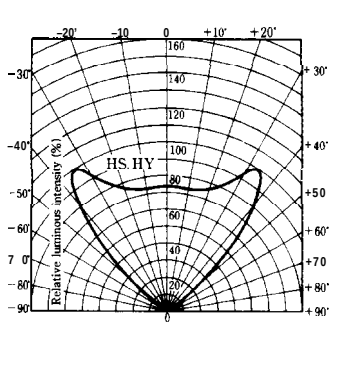
Relative Luminous Intensity vs. Ambient Temperature



Spectrum Distribution



Radiation Diagram



GL3EG43 (Yellow-green) / GL3KG43 (Green)

■ Electro-optical Characteristics

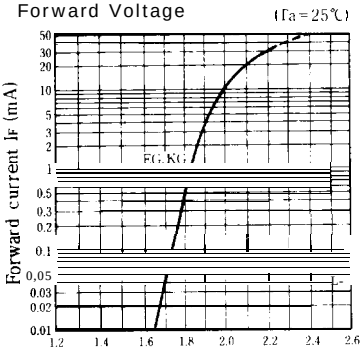
(Ta = 25℃)

Parameter	Symbol	Model No.	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V_F	GL3EG43	I_F = 20mA		2.1	2.8	V
		GL3KG43	I_F = 20mA	–	2.1	2.8	
※3 Luminous intensity	I_V	GL3EG43	I_F = 20mA	10	25	–	'cd
		GL3KG43	I_F = 20mA	8.0	20	–	
Peak emission wavelength	λ_p	GL3EG43	I_F = 20mA	–	565	–	nm
		GL3KG43	I_F = 20mA	–	555	–	
Spectrum radiation bandwidth	$\Delta\lambda$	GL3EG43	I_F = 20mA		30	–	'm
		GL3KG43	I_F = 20mA	–	25	–	
Reverse current	I_R	GL3EG43	V_R = 4V	–	–	10	μA
		GL3KG43	V_R = 4V		–	10	
Terminal capacitance	C_t	GL3EG43	V=OV f=1MHz	–	35	–	pF
		GL3KG43	V=OV f=1MHz	–	4(I	–	
Response frequency	f_c	GL3EG43	-		4	–	MHz
		GL3KG43	–	–	4	–	

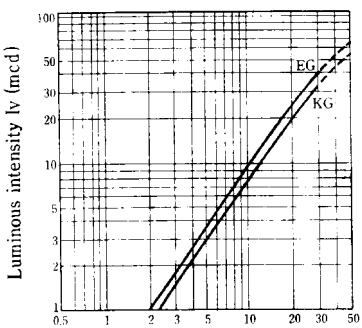
※3 **Tolerance:** ±30%

■ Characteristics Diagrams

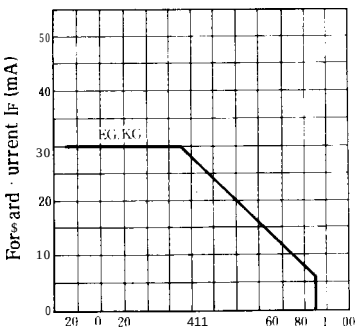
Forward Current vs. Forward Voltage (Ta = 25℃)



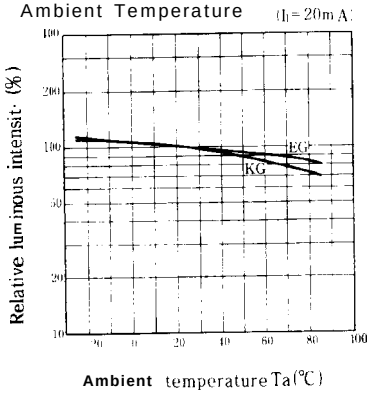
Luminous Intensity vs. Forward Current (Ta = 25℃)



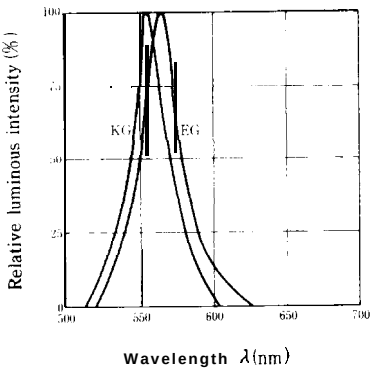
Forward Current Derating Curve



Relative Luminous Intensity vs. Ambient Temperature (IF = 20mA)



Spectrum Distribution (Ta = 25℃)



Radiation Diagram (Ta = 25℃)