

LT1 □ 83A Series

Chip LED Devices With Inner Lens

■ Model No.

LT1D83A Red

GaAsP/GaP

LT1S83A Sunset orange

GaAsP/GaP

LT1E83A Yellow-green

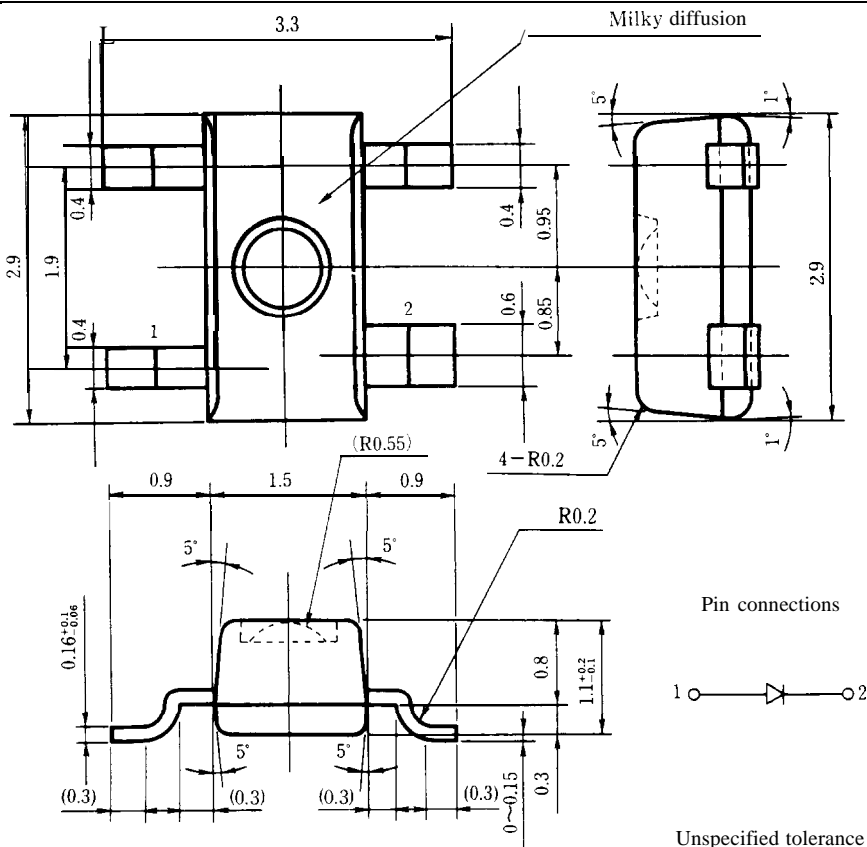
GaP

■ Features

1. Inner-lens type
2. Radiation size 1.5 × 2.9mm
3. Milky diffusion lens type
4. Taped models : Tape width 8mm, 3,000 pcs/reel

■ Outline Dimensions

(Unit: mm)



Regarding the taping specifications, please see "Taped Models" of Appendix

LT1 □ 83A

■ Absolute Maximum Ratings

(Ta = 25°C)

Parameter	Symbol	LT1D83A	LT1E83A			Unit
		LT1S83A				
Power dissipation	P	84	50			mW
Continuous forward current	I _F	30	20			mA
※1 Peak forward current	I _{FM}	50	50			mA
Derating factor	DC	—	0.40	0.27		mA/°C
	Pulse	—	0.67	0.67		mA/°C
Reverse voltage	V _R	5	5			v
Operating temperature	T _{opr}	-25 to +85				°C
Storage temperature	T _{stg}	-25 to +100				°C

※1 Duty ratio = 1/10, Pulse width = 0.1ms

LT1 D83A (Red)

■ **Electro-optical** Characteristics

(Ta=25°C)

Parameter	Symbol	Model No.	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V_F	LT1D83A	$I_F = 20\text{mA}$	—	2.0	2.8	V
※2 Luminous intensity	I_V	LT1D83A	$I_F = 20\text{mA}$	6.9	14.4	—	mcd
Peak emission wavelength	λ_p	LT1D83A	$I_F = 20\text{mA}$	—	635	—	nm
Spectrum radiation bandwidth	$\Delta\lambda$	LT1D83A	$I_F = 20\text{mA}$	—	35	—	nm
Reverse current	I_R	LT1D83A	$V_R = 4\text{V}$	—	—	10	μA
Terminal capacitance	C_t	LT1D83A	$V = 0\text{V}$ $f = 1\text{MHz}$	—	20	—	pF
Response frequency	f_c	LT1D83A	—	—	4	—	MHz

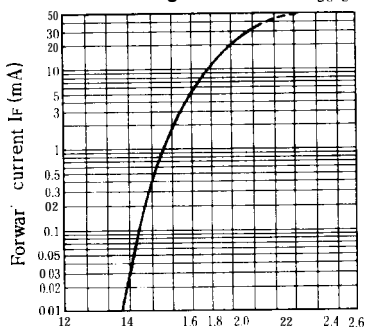
※2 Tolerance: $\pm 30\%$

3

■ **Characteristics Diagrams**

Forward Current vs. Forward Voltage

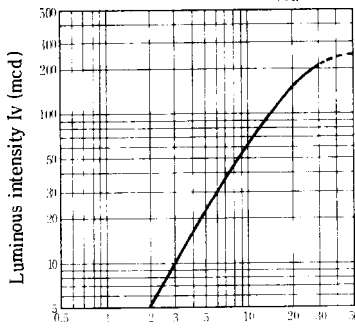
(Ta = 25°C)



Forward voltage V_F (V)

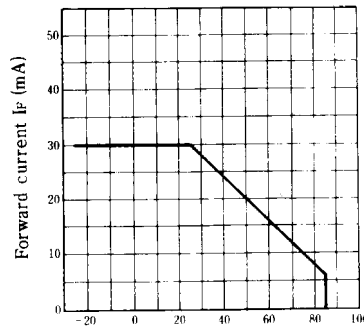
Luminous Intensity vs. Forward Current

(Ta = 25°C)



Forward current I_F (mA)

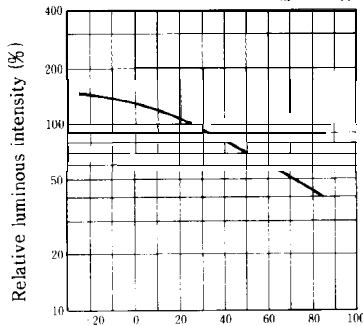
Forward Current Derating Curve



Ambient temperature T_a (°C)

Relative Luminous Intensity vs. Ambient Temperature

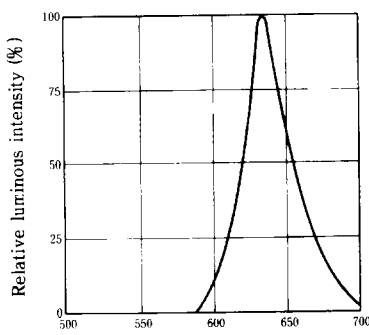
($I_F = 20\text{mA}$)



Ambient temperature T_a (°C)

Spectrum Distribution

(Ta = 25°C)



Wavelength λ (nm)

LT1 S83A (Sunset orange)

■ **Electro-optical** Characteristics

(Ta = 25°C)

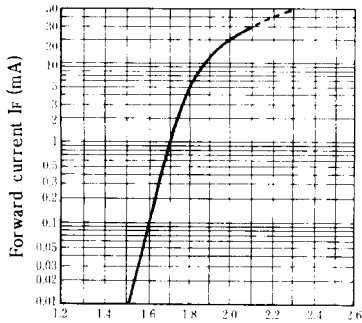
Parameter	Symbol	Model No.	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V _F	LT1S83A	I _F = 20mA		2.0	2.8	"
*2 Luminous intensity	I _v	LT1S83A	I _F = 20mA	5.7	11.7	—	mcd
Peak emission wavelength	λ _p	LT1S83A	I _F = 20mA	—	610	—	nm
Spectrum radiation bandwidth	Δλ	LT1S83A	I _F = 20mA	—	35	—	nm
Reverse current	I _R	LT1S83A	V _R = 4V	—	—	10	μA
Terminal capacitance	C _t	LT1S83A	V = 0V f = 1 MHz	—	15	—	pF
Response frequency	f _c	LT1S83A	—	—	4	—	MHz

*2 Tolerance: ±30%

■ **Characteristics Diagrams**

Forward Current vs. Forward Voltage

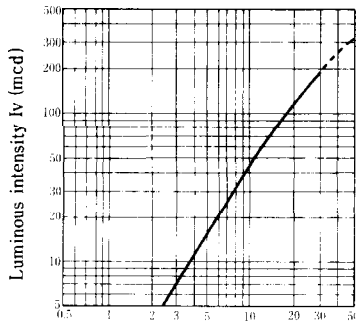
(Ta = 25°C)



Forward voltage V_F(V)

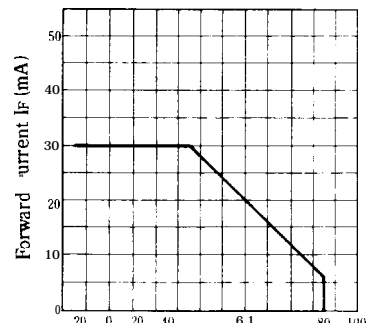
Luminous Intensity vs. Forward Current

(Ta = 25°C)



Forward current I_F(mA)

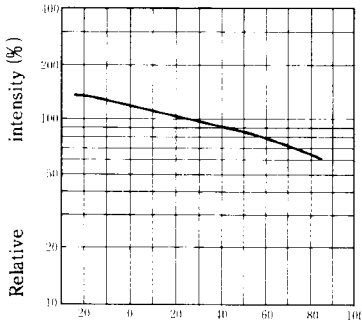
Forward Current Derating Curve



Ambient temperature Ta (°C)

Relative Luminous Intensity vs. Ambient Temperature

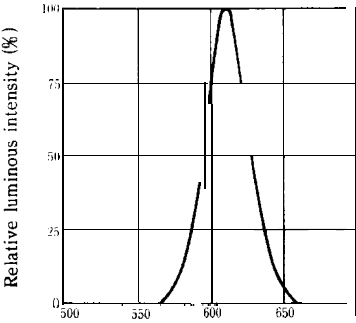
(I_F = 20mA)



Ambient temperature Ta (°C)

Spectrum Distribution

(Ta = 25°C)



Wavelength λ(nm)

LT1 E83A (Yellow-green)

■ **Electro-optical** Characteristics

($T_a = 25^\circ\text{C}$)

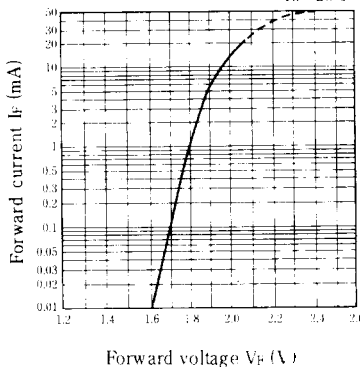
Parameter	Symbol	Model No.	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V_F	LT1E83A	$I_F = 10\text{mA}$	—	1.95	2.5	V
※2 Luminous intensity	I_λ	LT1E83A	$I_F = 10\text{mA}$	3.9	7.8	—	mcd
Peak emission wavelength	λ_p	LT1E83A	$I_t = 10\text{mA}$	—	565	—	nm
Spectrum radiation bandwidth	$\Delta\lambda$	LT1E83A	$I_F = 10\text{mA}$	—	30	—	nm
Reverse current	I_R	LT1E83A	$V_R = 4\text{V}$	—	—	10	μA
Terminal capacitance	C_t	LT1E83A	$V = 0\text{V}$ $f = 1\text{ MHz}$	—	35	—	pF
Response frequency	f_c	LT1E83A	—	—	4	—	MHz

※2 Tolerance: $\pm 30\%$

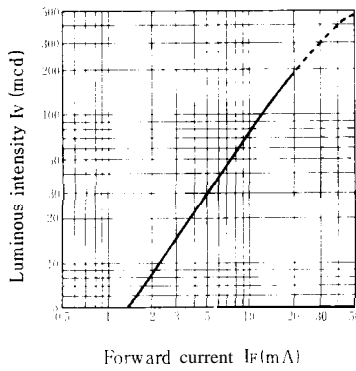
3

■ **Characteristics Diagrams**

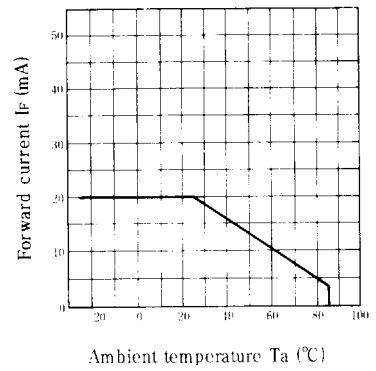
Forward Current vs. Forward Voltage



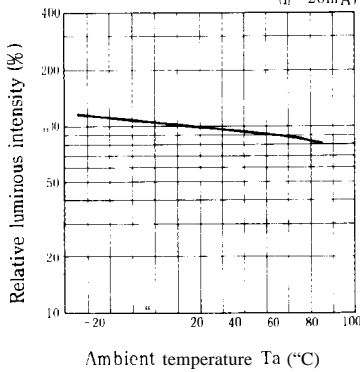
Luminous Intensity vs. Forward Current



Forward Current Derating Curve



Relative Luminous Intensity vs. Ambient Temperature



Spectrum Distribution

