LT1 ❑ 82A Series

Chip LED Devices With Inner Lens

■ Model No.

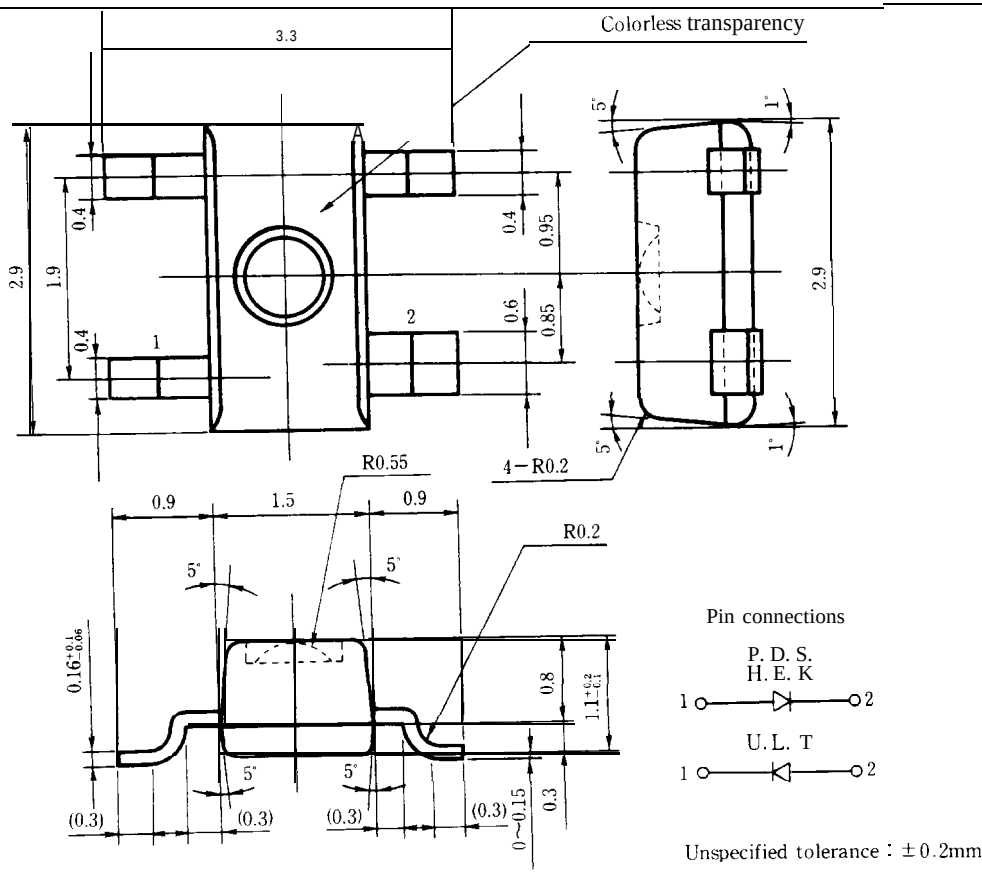
LT1U82A	Red (Super-luminosity)	GaAlAs/GaAlAs
LT1L82A	Red (High-luminosity)	GaAlAs/GaAs
LT1T82A	Red (High-luminosity)	GaAlAs/GaAs
LT1P82A	Red	GaP
LT1D82A	Red	GaAsP/GaP
LT1S82A	Sunset orange	GaAsP/GaP
LT1H82A	Yellow	GaAsP/GaP
LT1E82A	Yellow-green	GaP
LT1K82A	Green	GaP

■ Features

1. Inner-lens type
2. Radiation size 1.5 × 2.9mm
3. Colorless transparency 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 □82A

■ Absolute Maximum Ratings

(Ta=25"C)

Parameter		Symbol	LT1U82A	LT1L82A	LT1T82A	LT1P82A	LT1D82A / LT1S82A	Unit
Power dissipation		P	75	110	66	23	84	mW
Continuous forward current		I_F	30	50	30	10	30	mA
※1 Peak forward current		I_{FM}	50	300	50	50	50	mA
Derating factor	DC	–	0.40	0.67	0.40	0.13	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					"c
Storage temperature		T_{stg}	-25 to +100					"c

(Ta=25℃)

Parameter		Symbol	LT1H82A / LT1E82A / LT1K82A	Unit
Power dissipation		P	50	mW
Continuous forward current		I_F	20	mA
※1 Peak forward current		I_{FM}	50	mA
Derating factor	DC	–	0.27	m A/℃
	Pulse		0.67	m A/℃
Reverse voltage		V_R	5	v
Operating temperature		Top,	–25 to +85	"c
Storage temperature		T_{stg}	-25 to +100	"c

※1 Duty ratio=1/10, Pulse width=0.1ms
Duty ratio= 1/16, Pulse width≦1ms for LT1L82A

LT1 U82A (Red)

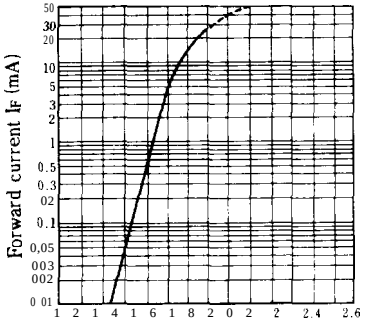
■ Electro-optical Characteristics (Ta = 25℃)

Parameter	Symbol	Model No,	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V_F	LT1U82A	I_F = 20mA	—	1.85	2.5	V
※2 Luminous intensity	I_V	LT1U82A	I_F = 20mA	25	54	–	mcd
Peak emission wavelength	λ_p	LT1U82A	I_F = 20mA	—	660	–	nm
Spectrum radiation bandwidth	$\Delta\lambda$	LT1U82A	I_F = 20mA	—	20	–	nm
Reverse current	I_R	LT1U82A	V_R = 3V	–	–	100	μA
Terminal capacitance	C_t	LT1U82A	V = 0V f = 1 MHz	–	25	–	pF
Response frequency	f_c	LT1U82A	–	—	8	–	MHz

※2 Tolerance: ±30%

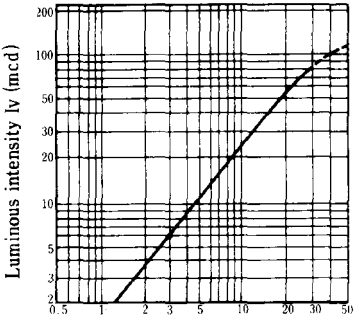
■ Characteristics Diagrams

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



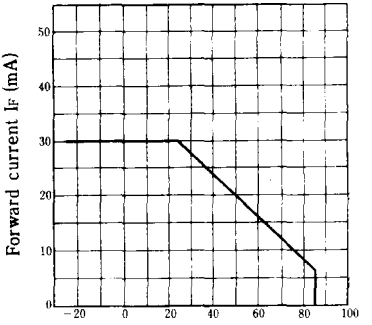
Forward voltage V_F (V)

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



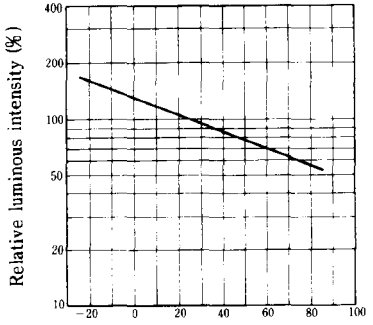
Forward current IF (mA)

Forward Current Derating Curve



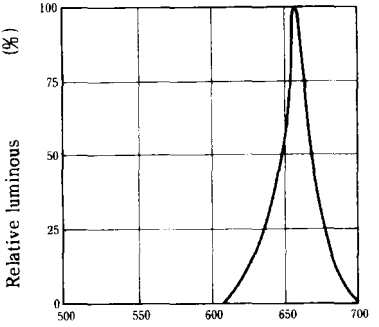
Ambient temperature Ta (℃)

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



Ambient temperature Ta (℃)

Spectrum Distribution (Ta = 25℃)



Wavelength λ (nm)

3

LT1 L82A (Red) / LT1 T82A (Red)

■ Electro-optical Characteristics

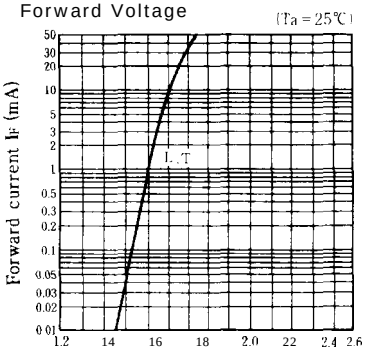
(Ta=25℃)

Parameter	Symbol	Model No.	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V_F	LT1L82A	I_F=20mA		1.75	2.2	V
		LT1T82A	I_F=20mA	–	1.75	2.2	
※2 Luminous intensity	I_V	LT1L82A	I_F=20mA	9.1	24.2	–	
		LT1T82A	I_F=20mA	5.3	13.1	–	‘cd
Peak emission wavelength	λ_p	LT1L82A	I_F=20mA	–	660	–	
		LT1T82A	I_F=20mA	–	660	–	‘m
Spectrum radiation bandwidth	$\Delta\lambda$	LT1L82A	I_F=20mA		20	–	
		LT1T82A	I_F=20mA	–	20	–	‘m
Reverse current	I_R	LT1L82A	V_R=4V			10	μA
		LT1T82A	V_R=4V	–	–	10	
Terminal capacitance	C_t	LT1L82A	V=0V f=1MHz	–	30	–	pF
		LT1T82A	V=OV f=1 MHz	–	30	–	
Response frequency	f_c	LT1L82A	–		8	–	MHz
		LT1T82A	–	–	8	–	

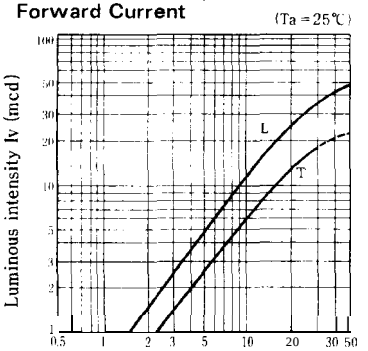
※2 Tolerance: ±30%

■ Characteristics Diagrams

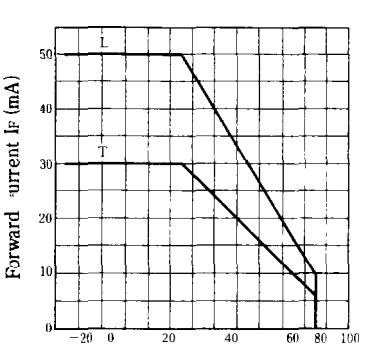
Forward Current vs. Forward Voltage



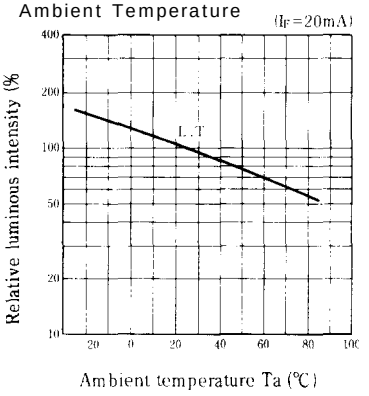
Luminous Intensity vs. Forward Current



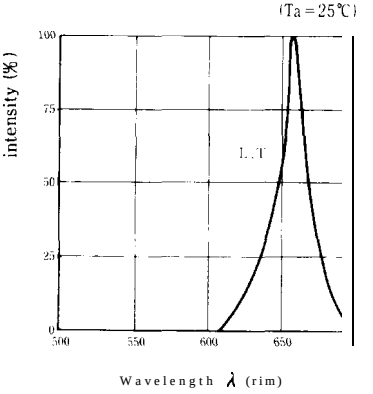
Forward Current Derating Curve



Relative Luminous Intensity vs. Ambient Temperature



Spectrum Distribution



LT1P82A (Red) / LT1D82A (Red)

■ Electro-optical Characteristics

(Ta=25℃)

Parameter	Symbol	Model No.	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V_F	LT1P82A	I_F=5mA		1.9	2.3	V
		LT1D82A	I_F=20mA	—	2.0	2.8	
※2 Luminous intensity	I_V	LT1P82A	I_F=5mA	0.5	1.6	—	mcd
		LT1D82A	I_F=20mA	5.3	14.4	—	
Peak emission wavelength	λ_p	LT1P82A	I_F=5mA	—	695	—	nm
		LT1D82A	I_F=20mA	—	635	—	
Spectrum radiation bandwidth	$\Delta\lambda$	LT1P82A	I_F=5mA		100	—	
		LT1D82A	I_F=20mA	—	35	—	nm
Reverse current	I_R	LT1P82A	V_R=4V	—	—	10	μA
		LT1D82A	V_R=4V	—		10	
Terminal capacitance	C_t	LT1P82A	V=0V f=1MHz	—	55	—	pF
		LT1D82A	V=0V f=1MHz	—	20	—	
Response frequency	fc	LT1P82A	—	—	4	—	MHz
		LT1D82A	—	—	4	—	

※2 **Tolerance:** ±30%

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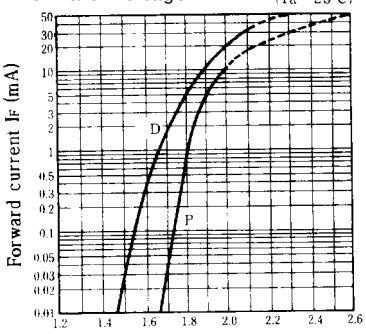
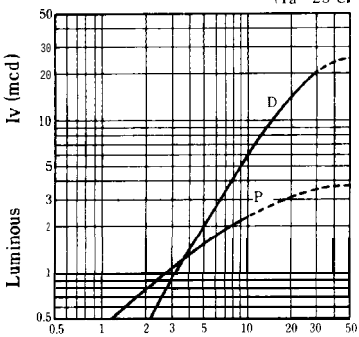
■ Characteristics Diagrams

Forward Current **va.** Forward Voltage (Ta=25℃)



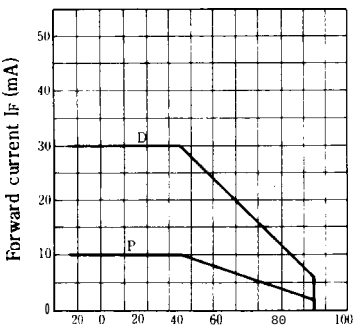
Forward voltage V_F (V)

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



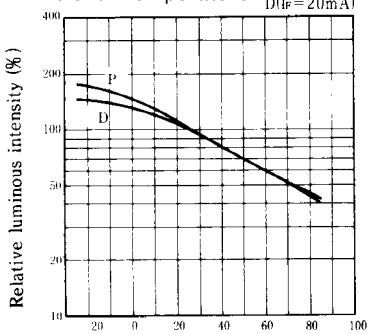
Forward current I_F (mA)

Forward Current Derating Curve



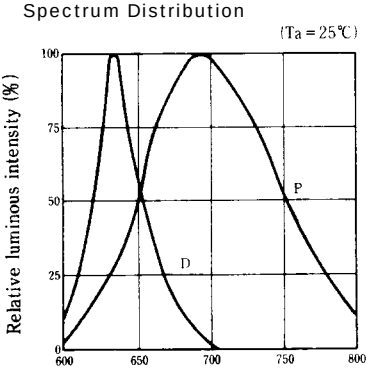
Ambient temperature Ta(℃)

Relative Luminous **Intensity vs.** Ambient Temperature P(I_F=5mA) D(I_F=20mA)



Ambient temperature Ta (°C)

Spectrum Distribution (Ta=25℃)



Wavelength λ (rim)

LT1 S82A (Sunset orange) / LT1 H82A (Yellow)

■ Electro-optical Characteristics

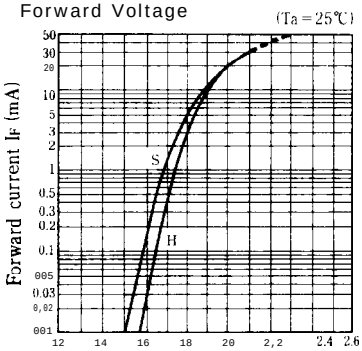
(Ta=25°C)

Parameter	Symbol	Model No.	Conditions	MIN	TYP.	MAX.	Unit
Forward voltage	V_F	LT1S82A	I_F=20mA	–	2.0	2.8	V
		LT1H82A	I_F=10mA	–	1.9	2,5	
※2 Luminous intensity	I_V	LT1S82A	I_F=20mA	4.4	11.7	–	mcd
		LT1H82A	I_F=10mA	1.8	5.6	–	
Peak emission wavelength	λ_p	LT1S82A	I_F=20mA	–	610	–	nm
		LT1H82A	I_F=10mA	–	585	–	
Spectrum radiation bandwidth	$\Delta\lambda$	LT1S82A	I_F=20mA	–	35	–	nm
		LT1H82A	I_F=10mA	–	30	–	
Reverse current	I_R	LT1S82A	V_R=4V	–	–	10	μA
		LT1H82A	V_R=4V	–	–	10	
Terminal capacitance	C_t	LT1S82A	V=0V f=1MHz	–	15	–	pF
		LT1H82A	V=0V f=1MHz	–	35	–	
Response frequency	f_c	LT1S82A	–	–	4	–	MHz
		LT1H82A	–	–	4	–	

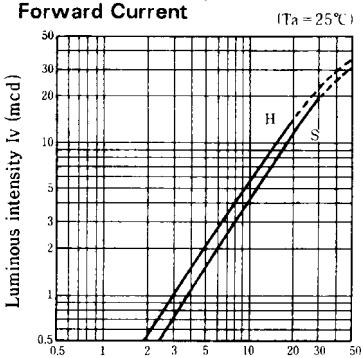
※2 Tolerance: ±30%

■ Characteristics Diagrams

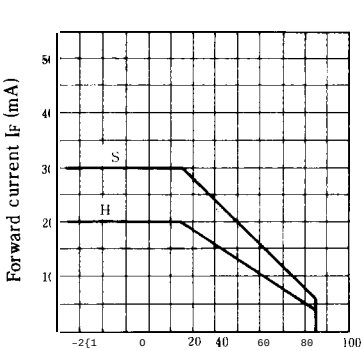
Forward Current vs. Forward Voltage



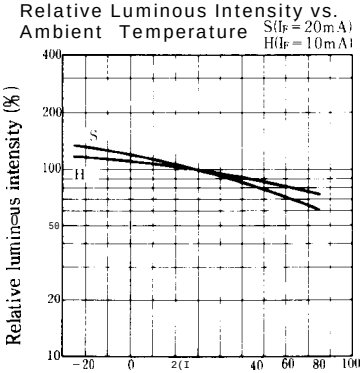
Luminous Intensity vs. Forward Current



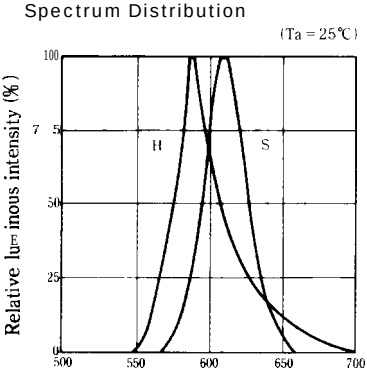
Forward Current Derating Curve



Relative Luminous Intensity vs. Ambient Temperature



Spectrum Distribution



LT1 E82A (Yellow-green) / LT1 K82A (Green)

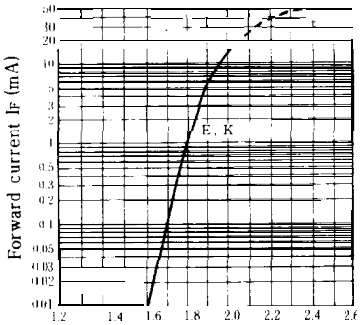
■ Electro-optical Characteristics (Ta = 25℃)

Parameter	Symbol	Model No.	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V_F	LT1E82A	I_F = 10mA	–	1.95	2.5	V
		LT1K82A	I_F = 10mA	–	1.95	2.5	
※2 Luminous intensity	I_V	LT1E82A	I_F = 10mA	3.0	7.8	–	mcd
		LT1K82A	I_F = 10mA	0.9	2.7	–	
Peak emission wavelength.	λ_p	LT1E82A	I_F = 10mA		565	–	‘m
		LT1K82A	I_F = 10mA	–	555	–	
Spectrum radiation bandwidth	$\Delta\lambda$	LT1E82A	I_F = 10mA	–	30	–	‘m
		LT1K82A	I_F = 10mA	–	25	-	
Reverse current	I_R	LT1E82A	V_R = 4V	–	–	10	μA
		LT1K82A	V_R = 4V		–	10	
Terminal capacitance	C_t	LT1E82A	V = 0V f = 1MHz	–	35	–	pF
		LT1K82A	V = 0V f = 1MHz	–	40	-	
Response frequency	f_c	LT1E82A	–	–	4	–	MHz
		LT1K82A	–	–	4	–	

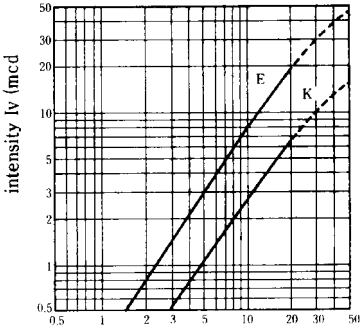
※2 **Tolerance:** ±30%

■ Characteristics Diagrams

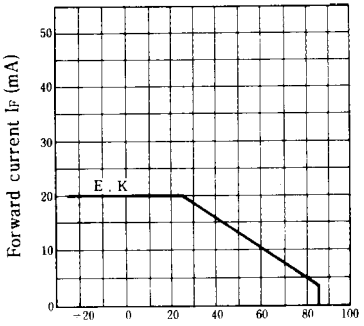
Forward Current vs. Forward Voltage (Ta = 25℃)



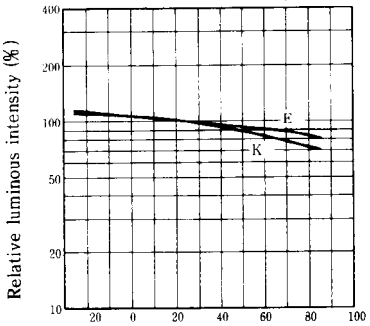
Luminous Intensity vs. Forward Current (Ta = 25℃)



Forward Current Derating Curve



Relative Luminous Intensity vs. Ambient Temperature (IF = 10mA)



Spectrum Distribution (Ta = 25℃)