

# LT1 □ □ 82A Series

## Dichromatic Chip LED Devices With Inner Lens

■ Model No.

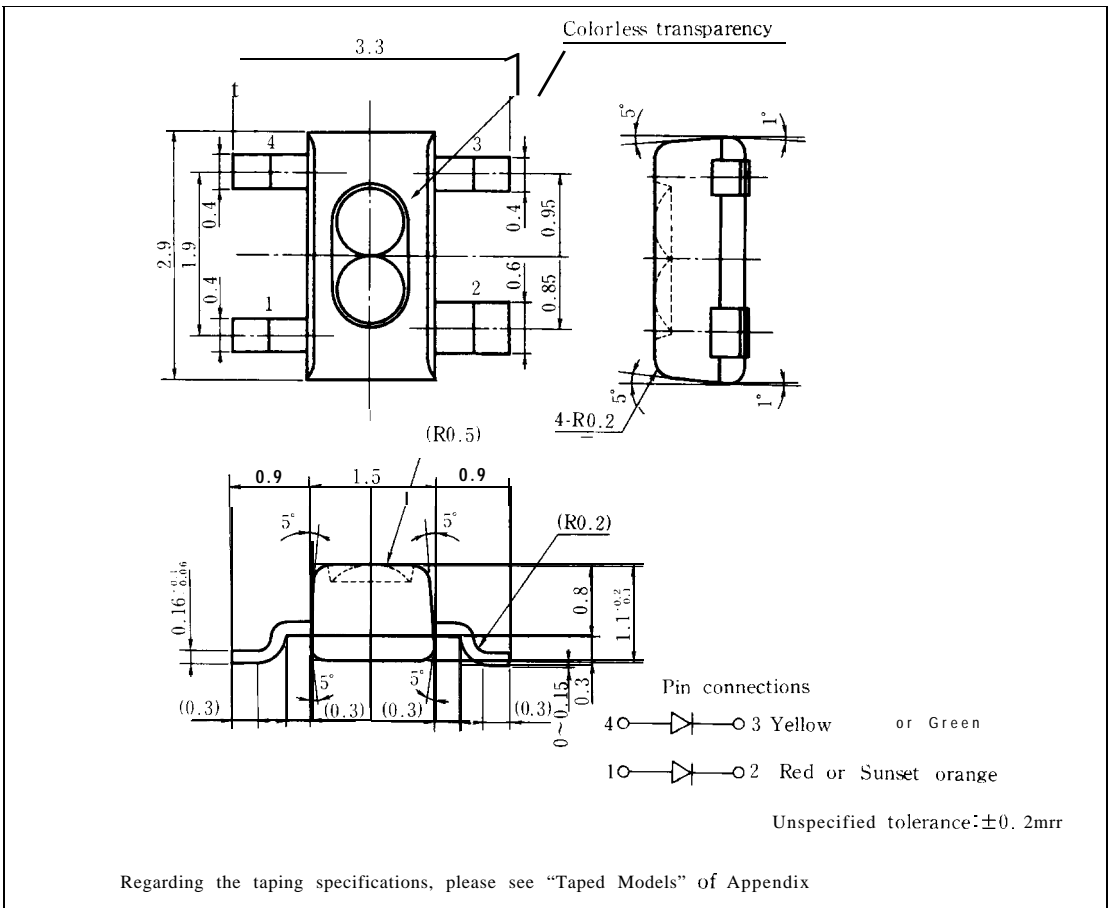
LT1EL82A	Yellow-green	GaP
	Red (High-luminosity)	GaAlAs/GaAs
LT1ET82A	Yellow-green	GaP
	Red (High-luminosity)	GaAlAs/GaAs
LT1KS82A	Green	GaP
	Sunset orange	GaAsP/GaP

■ 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)



## LT1 □ □ 82A

## ■ Absolute Maximum Ratings

(Ta = 25°C)

Parameter	Symbol	LT1EL82A		LT1ET82A		Unit	
		Yellow-green	Red	Yellow-green	Red		
*1 Power dissipation	P	50	110	50	66	mW	
Continuous forward current	I <sub>F</sub>	20	50	20	30	mA	
*2 Peak forward current	I <sub>FM</sub>	50	200	50	50	mA	
Derating factor	DC	—	0.27	0.67	0.27	0.40	m A/°C
	Pulse	—	0.67	2.67	0.67	0.67	m A/°C
Reverse voltage	V <sub>R</sub>	5		5		v	
Operating temperature	T <sub>opr</sub>	-25 to +85				'c	
Storage temperature	T <sub>stg</sub>	-25 to +100				"c	

(Ta = 25°C)

Parameter	Symbol	LT1KS82A				Unit
		Green	Sunset orange			
*1 Power dissipation	P	50	84			mW
Continuous forward current	I <sub>F</sub>	20	30			mA
*2 Peak forward current	I <sub>FM</sub>	50	50			mA
Derating factor	DC	—	0.27	0.40		m A/°C
	Pulse	—	0.67	0.67		m A/°C
Reverse voltage	V <sub>R</sub>	5				V
Operating temperature	T <sub>opr</sub>	-25 to +85				"c
Storage temperature	T <sub>stg</sub>	-25 to +100				"c

\*1 The value of power dissipation is specified under the condition that either yellow-green or red/green or sunset orange is lightened separately. When the both diodes of yellow-green and red/green and sunset orange are lightened simultaneously, the power dissipation of each diode should be less than the half of the value specified in this table.

\*2 Duty ratio = 1/10, Pulse width = 0.1ms

LT1 EL82A (Yellow-green/Red)

■ **Electro-optical** Characteristics

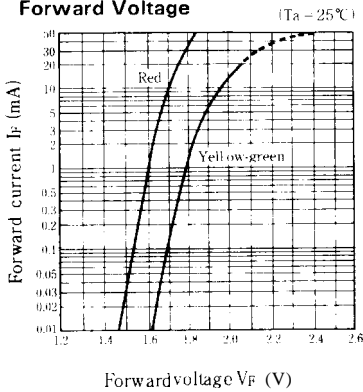
(Ta=25°C)

Parameter	Symbol	Radiation color	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V <sub>F</sub>	Yellow-green	I <sub>F</sub> = 10mA	—	1.95	2.5	V
		Red	I <sub>F</sub> = 20mA	—	1.75	2.2	
*3 Luminous intensity	I <sub>v</sub>	Yellow-green	I <sub>F</sub> = 10mA	2.7	7.0	—	mcd
		Red	I <sub>F</sub> = 20mA	8.2	21.8	—	
Peak emission wavelength	λ <sub>p</sub>	Yellow-green	I <sub>F</sub> = 10mA	—	565	—	nm
		Red	I <sub>F</sub> = 20mA	—	660	—	
Spectrum radiation bandwidth	Δλ	Yellow-green	I <sub>F</sub> = 10mA	—	30	—	nm
		Red	I <sub>F</sub> = 20mA	—	20	—	
Reverse current	I <sub>R</sub>	Yellow-green	V <sub>0</sub> = 4V	—	—	10	μA
		Red	V <sub>R</sub> = 4V	—	—	10	
Terminal capacitance	C <sub>t</sub>	Yellow-green	V = 0V f = 1MHz	—	35	—	*F
		Red	V = 0V f = 1MHz	—	30	—	
Response frequency	f <sub>c</sub>	Yellow-green	—	—	4	—	MHz
		Red	—	—	8	—	

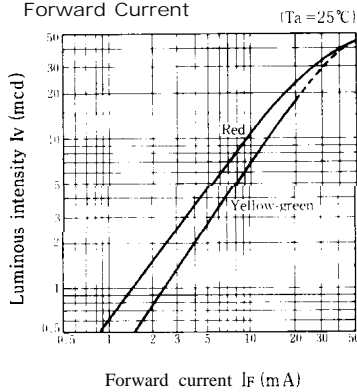
\*3 Tolerance: ±30%

Characteristics Diagrams

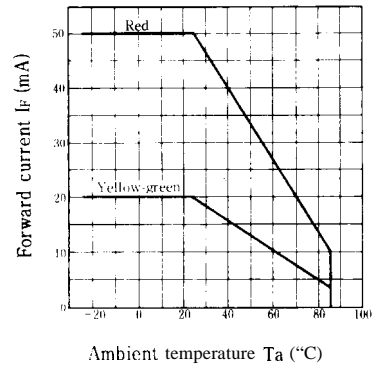
**Forward Current vs. Forward Voltage**



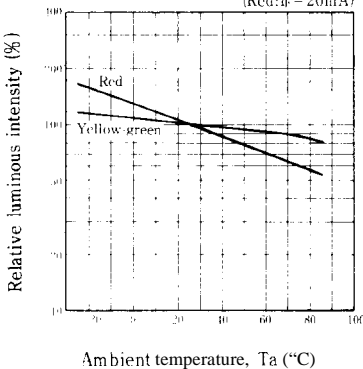
**Luminous Intensity vs. Forward Current**



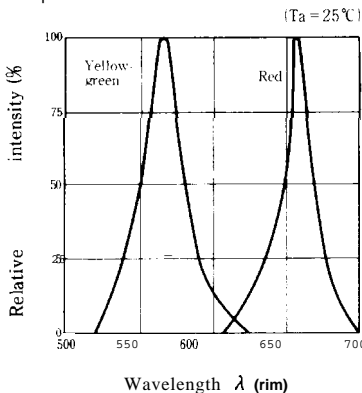
**Forward Current Derating Curve**



**Relative Luminous Intensity vs. Ambient Temperature**



**Spectrum Distribution**



LT1 ET82A (Yellow-green/Red)

■ Electro-optical Characteristics

(Ta = 25°C)

Parameter	Symbol	Radiation color	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V <sub>F</sub>	Yellow-green	I <sub>F</sub> = 10mA		1.95	2.5	V
		Red	I <sub>F</sub> = 20mA		1.75	2.2	
※3 Luminous intensity	I <sub>v</sub>	Yellow-green	I <sub>F</sub> = 10mA	2.7	7.0	—	mcd
		Red	I <sub>F</sub> = 20mA	4.8	11.8	—	
Peak emission wavelength	λ <sub>p</sub>	Yellow-green	I <sub>F</sub> = 10mA	—	565	—	'm
		Red	I <sub>F</sub> = 20mA		660	—	
Spectrum radiation bandwidth	Δλ	Yellow-green	I <sub>F</sub> = 10mA	—	30	—	'm
		Red	I <sub>F</sub> = 20mA		20	—	
Reverse current	I <sub>R</sub>	Yellow-green	V <sub>R</sub> = 4V	—	—	10	μA
		Red	V <sub>R</sub> = 4V			10	
Terminal capacitance	C <sub>t</sub>	Yellow-green	V = 0V f = 1 MHz	—	35	—	pF
		Red	V = 0V f = 1MHz		30	—	
Response frequency	f <sub>c</sub>	Yellow-green		—	4	—	'Hz
		Red			8	—	

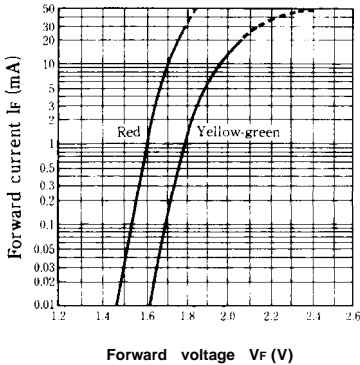
※3 Tolerance: ±30%

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■ Characteristics Diagrams

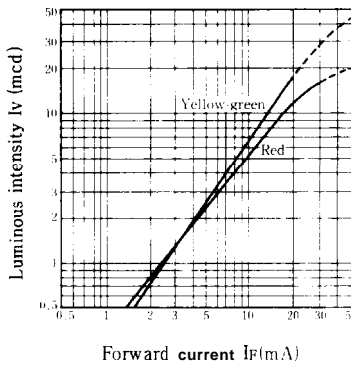
Forward Current vs. Forward Voltage

(Ta = 25°C)

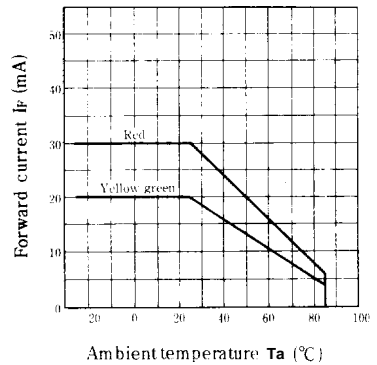


Luminous Intensity vs. Forward Current

(Ta = 25°C)

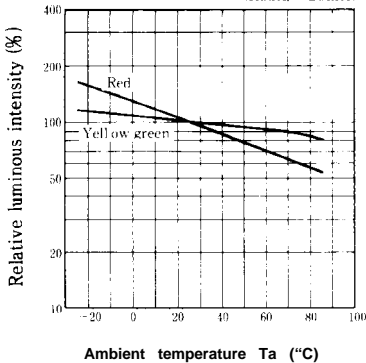


Forward Current Derating Curve



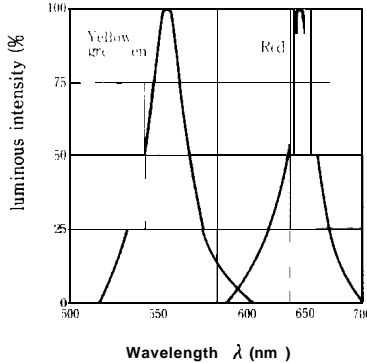
Relative Luminous Intensity vs. Ambient Temperature

(Y-g: I<sub>F</sub> = 10mA)  
(Red: I<sub>F</sub> = 20mA)



Spectrum Distribution

(Ta = 25°C)



LT1 KS82A (Green/Sunset orange)

■ Electro-optical Characteristics

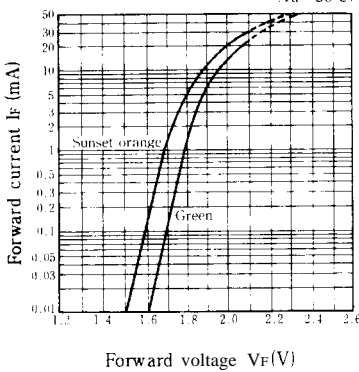
(Ta=25°C)

Parameter	Symbol	Radiation color	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V <sub>F</sub>	Green	I <sub>F</sub> =10mA	—	1.95	2.5	V
		Sunset orange	I <sub>F</sub> =20mA		2.0	2.8	
*3 Luminous intensity	I <sub>v</sub>	Green	I <sub>F</sub> =10mA	0.8	2.4	—	mcd
		Sunset orange	I <sub>F</sub> =20mA	4.0	10.5	—	
Peak emission wavelength	λ <sub>p</sub>	Green	I <sub>F</sub> =10mA		555	—	‘m
		Sunset orange	I <sub>F</sub> =20mA		610	—	
Spectrum radiation bandwidth	Δλ	Green	I <sub>F</sub> =10mA		25	—	‘m
		Sunset orange	I <sub>F</sub> =20mA		35	—	
Reverse current	I <sub>R</sub>	Green	V <sub>R</sub> =4V	—	—	10	μA
		Sunset orange	V <sub>R</sub> =4V			10	
Terminal capacitance	C <sub>t</sub>	Green	V=0V f=1MHz	—	40	—	pF
		Sunset orange	V=0V f=1MHz		15	—	
Response frequency	f <sub>c</sub>	Green	—	—	4	—	‘Hz
		Sunset orange	—			4	

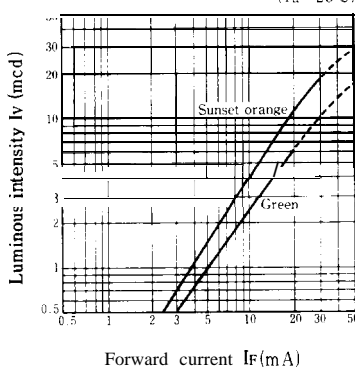
\*3 Tolerance: ±30%

■ Characteristics Diagrams

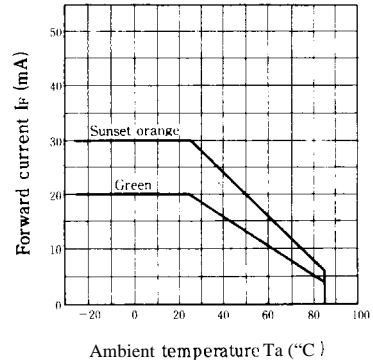
Forward Current vs. Forward Voltage



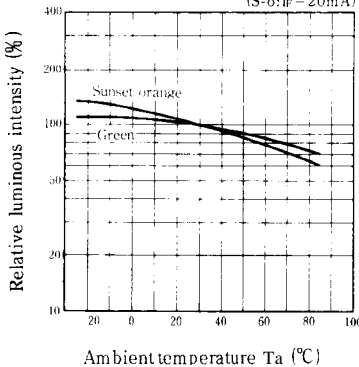
Luminous Intensity vs. Forward Current



Forward Current Derating Curve



Relative Luminous Intensity vs. Ambient Temperature



Spectrum Distribution

