LEDTRONICS, INC.®

23105 Kashiwa Court, Torrance, CA 90505
Phone: (800) 579-4875 or (310) 534-1505 Fax: (310) 534-1424
E-mail: webmaster@ledtronics.com
Website: http://www.ledtronics.com

SML12R3KIR941T-TR

Red/Infrared
Surface Mount LED
3.2 ×2.7 ×1.85 mm Chip LED
120° viewing angle

DWG BY: SL / GP 03-19-07
CHK BY: PL 03-20-07
QA: __ __-__-__
MFG: __ __-__-__
REVISION LTR: - 03-19-07

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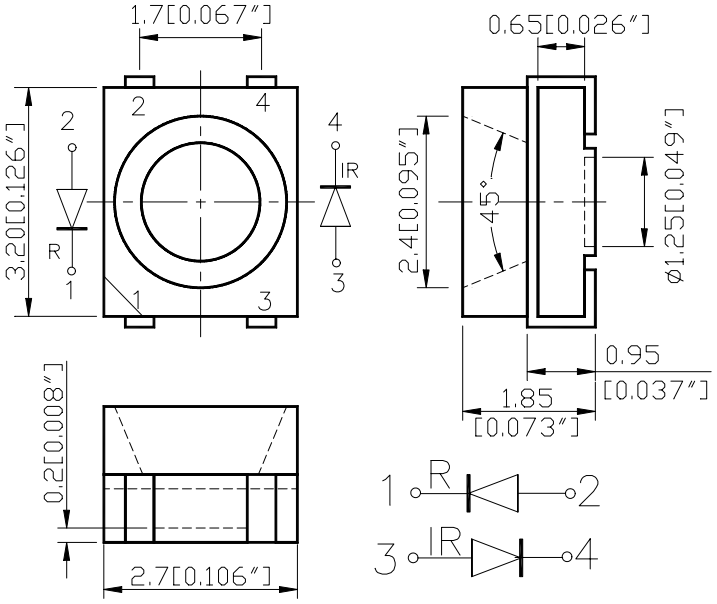
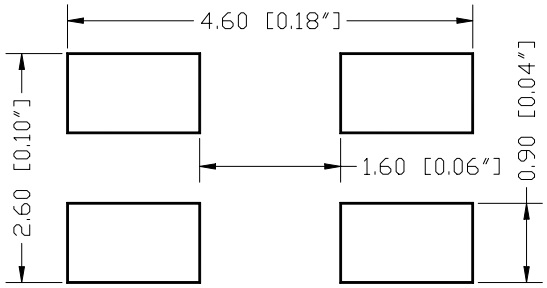
Package outlines



RECOMMEND PAD LAYOUT



ITEM	MATERIALS	
Resin (mold)	Epoxy	
Bonding Wire	Ø25μm Au	
Lens color	Water Transparent	
Dice	Red	GaAlAs
	Infrared	GaAlAs

NOTES:
1. All dimensions are in millimeters (inches);
2. Tolerance are ±0.2mm (0.008inch) unless otherwise noted.

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Absolute maximum ratings (T_A=25℃)

Parameter	Symbol	Value		Unit
		R	IR	
Power dissipation	Pd	69	90	mW
Forward current	If	30	50	mA
Reverse voltage	Vr	5		V
Operating temperature range	Top	-20 ~+80		℃
Storage temperature range	Tstg	-20~+80		℃
Peak pulsing current (1/8 duty f=1kHz)	Ifp	125		mA
Peak forward current of Infrared 1/100 duty,Pulse width 100μs	Ifp	1		A

Electro-optical characteristics (T_A=25℃)

Parameter	Test Condition	Symbol		Value			Unit
				Min	Typ	Max	
Wavelength at peak emission	If=20mA	λ peak	R	650	660	670	nm
			IR	--	940	--	
Spectral half bandwidth	If=20mA	△λ	R	--	20	--	nm
			IR	--	50	--	
Dominant wavelength	If=20mA	λ dom	R	--	640	--	nm
			IR	--	--	--	
Forward voltage	If=20mA	Vf	R	--	1.8	2.3	V
			IR	--	1.3	1.8	
Luminous intensity ＊1	If=20mA	Iv	R	35	40	--	mcd
			IR	0.5	0.6	--	
Viewing angle at 50% Iv	If=10mA	2θ 1/2		--	120	--	Deg
Reverse current	Vr=5V	Ir		--	--	10	μA
Chromaticity Coordinates	If=20mA	X		--	0.	--	Red
		Y			0.		
Chromaticity Coordinates	If=20mA	X		--	0.	--	Yellow
		Y			0.		

＊1 Note: Luminous intensity tolerance is ±10%.

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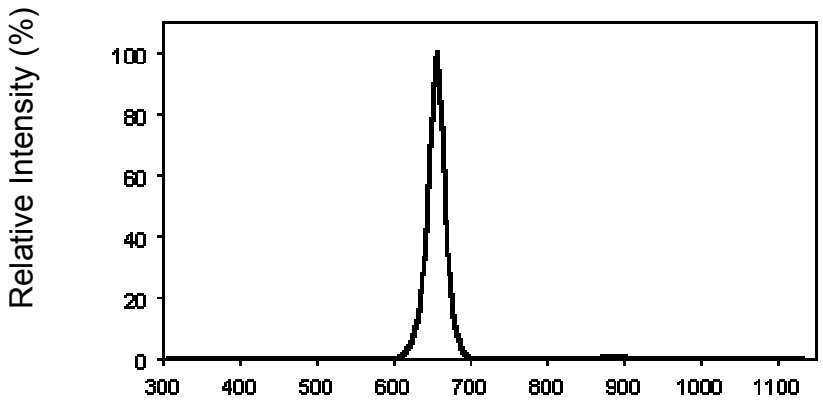
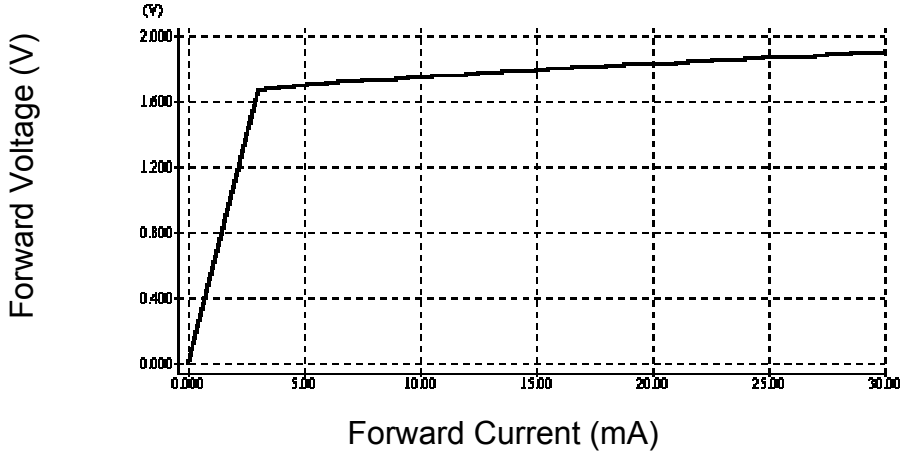
OPTICAL CHARACTERISTIC CURVES (Red)

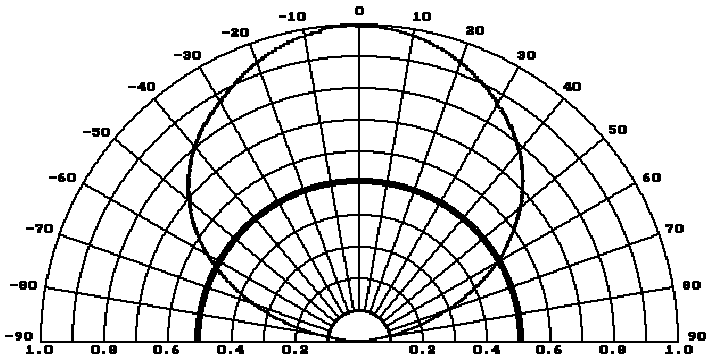
Relative Intensity vs. Wavelenght



Forward Current vs. Forward Voltage



Directive Characteristics



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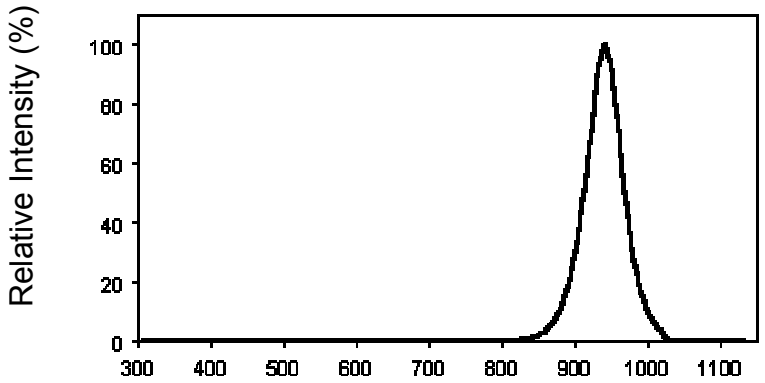
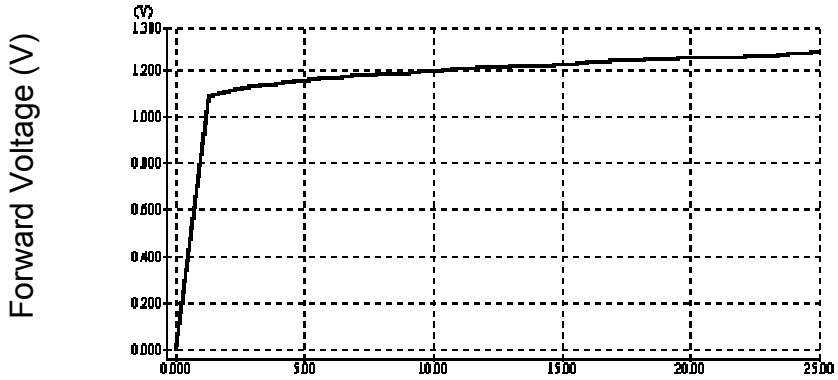
OPTICAL CHARACTERISTIC CURVES (Infrared)

Relative Intensity vs. Wavelenght



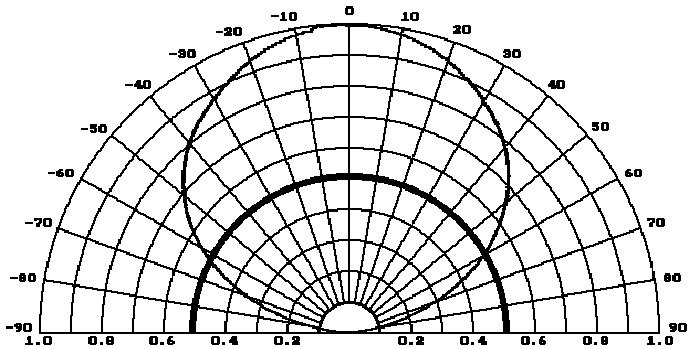
Wavelenght (nm)

Forward Current vs. Forward Voltage



Forward Current (mA)

Directive Characteristics



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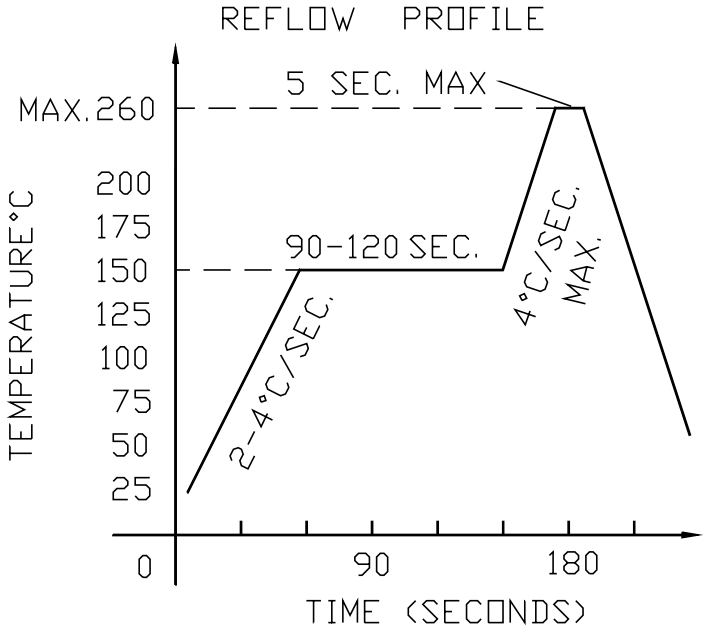
Reflow Profile

■ Reflow Temp/Time



■Soldering iron

Basic spec is ≤ 5sec when 260℃. If the temperature is higher, time should be shorter (+10℃→ -1sec).Power dissipation of iron should be smaller than 15W, and temperatures should be controllable. Surface temperature of the device should be under 230℃.

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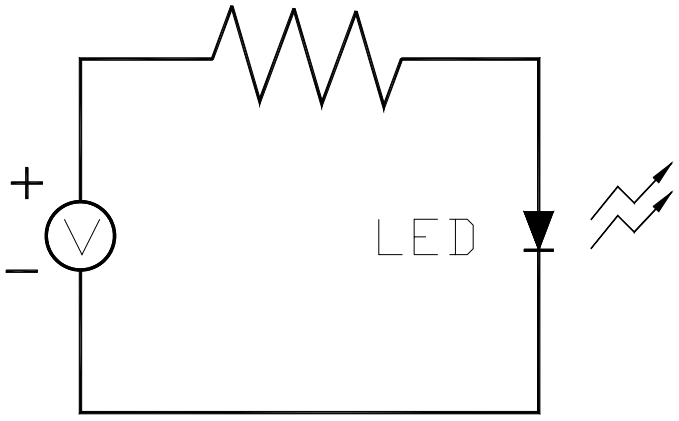
Test circuit and handling precations

■ Test circuit



■ Handling precautions

1. Over-current-proof

Customer must apply resistors for protection; otherwise slight voltage shift will cause big current change (Burn out will happen).

2. Storage

2.1 It is recommended to store the products in the following conditions:

Humidity: 60% R.H. Max.

Temperature : 5℃~30℃(41℉~86℉)

2.2 Shelf life in sealed bag: 12 month at ＜ 5℃~30℃ and ＜30% R.H. after the package is Opened, the products should be used within a week or they should be keeping to storage at ≦20 R.H. with zip-lock sealed.

3. Baking

It is recommended to backing before soldering when the pack is unsealed after 72hrs. The Conditions are as followings:

3.1 60±3℃ x(12~24hrs) and ＜5%RH, taped reel type

3.2 100±3℃ x(45min~1hr), bulk type

3.3 130±3℃ x(15~30min), bulk type

When you discover that the desiccant in the package has a pink color (normal=blue), you Should treat them in the same conditions as (3.1~3.3)

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Test items and results of reliability

Type	Test Item	Test Conditions	Note	Number of Damaged
Environmental Sequence	Temperature Cycle	-20℃ 30min ↑ ↓ 80℃ 30min	100 cycle	0/22
	Thermal Shock	-20℃ 15min ↑ ↓ 80℃ 15min	100 cycle	0/22
	High Humidity Heat Cycles	30℃⇔ 65℃ 90%RH 24hrs/1cycle	10 cycle	0/22
	High Temperature Storage	T_a=80℃	1000 hrs	0/22
	Humidity Heat Storage	T_a=60℃ RH=90%	1000 hrs	0/22
	Low Temperature Storage	T_a=-30℃	1000 hrs	0/22
Operation Sequence	Life Test	T_a=25℃ I_F=20mA	1000 hrs	0/22
	High Humidity Heat Life Test	60℃ RH=90% I_F=20mA	500 hrs	0/22
	Low Temperature Life Test	T_a=-20℃ I_F=20mA	1000 hrs	0/22

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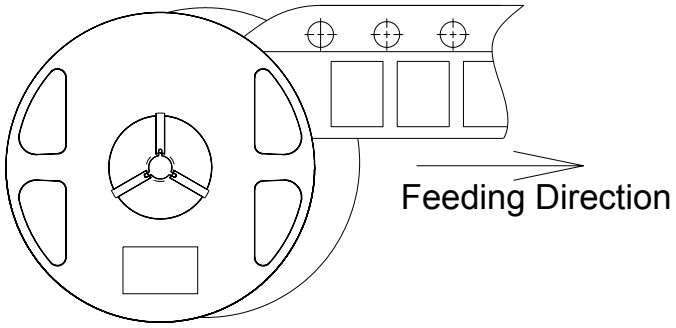
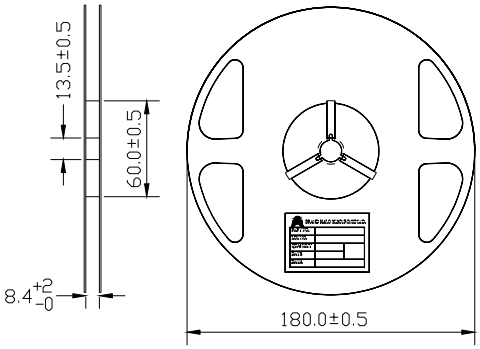
Multi-Color High Performance SMD Chip LED Lamps Packaging Specifications

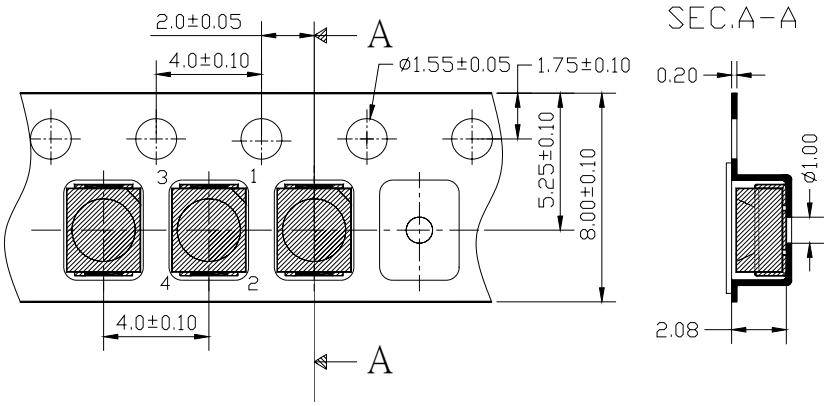
● Feeding Direction



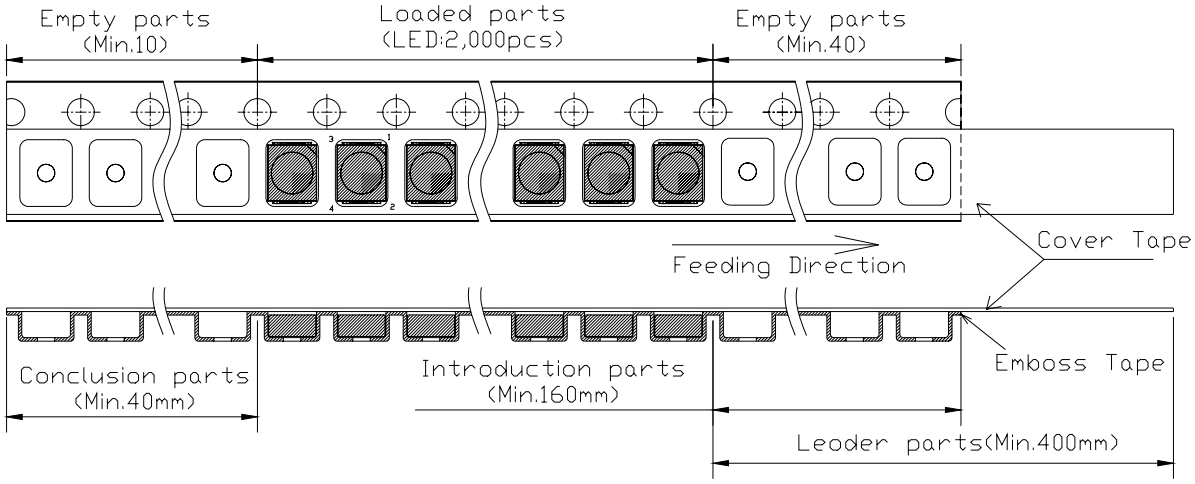
● Dimensions of Reel (Unit: mm)



● Dimensions of Tape (Unit: mm)



● Arrangement of Tape



NOTES

1. Empty component pockets are sealed with top cover tape;
2. The maximum number of missing lamps is two.
3. 2,000 pcs/Reel