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

SML10CW2KT-TR

Cool White
Surface Mount LED
3.5 x2.8 x1.9 mm Chip LED
120° viewing angle

DWG BY: KB/GP 07-24-06
CHK BY: PL 11-03-06
QA: __ 11-__-06
MFG: __ __-__-__
REVISION LTR: - 11-03-06

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

PRELIMINARY SPEC

ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

Features

- SINGLE COLOR.
- SUITABLE FOR ALL SMT ASSEMBLY AND SOLDER PROCESS.
- AVAILABLE ON TAPE AND REEL.
- IDEAL FOR BACKLIGHTING.
- PACKAGE : 1500PCS / REEL.
- MOISTURE SENSITIVITY LEVEL : LEVEL 4.
- ELECTROSTATIC DISCHARGE THRESHOLD (HBM):1000V.
- TYP. COLOR TEMPERATURE:6500K
- COLOR COORDINATES:X=0.33,Y=0.34 ACC. TO CIE1931(WHITE).
- OPTICAL EFFICIENCY:30 lm/W(TYP.)
- COLOR REPRODUCTION INDEX:80
- RoHS COMPLIANT.

Description

The source color devices are made with InGaN on SiC Light Emitting Diode.

Static electricity and surge damage the LEDS.

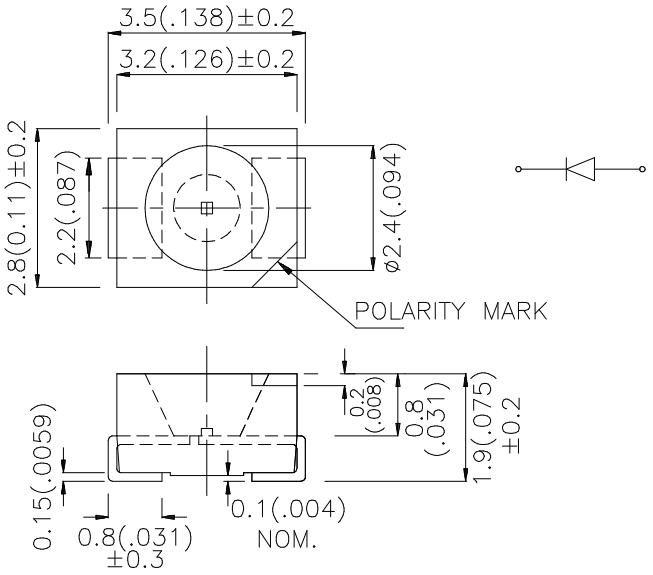
It is recommended to use a wrist band or anti-electrostatic glove when handling the LEDs.

All devices, equipment and machinery must be electrically grounded.

Applications

- traffic signaling.
- backlighting (illuminated advertising , general lighting).
- interior and exterior automotive lighting.
- substitution of micro incandescent lamps.
- reading lamps.
- signal and symbol luminaire for orientation.
- marker lights (e.g. steps, exit ways, etc).
- decorative and entertainment lighting.
- indoor and outdoor commercial and residential architectural lighting.

Package Dimensions



Notes:
1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.25(0.01") unless otherwise noted.
3. Specifications are subject to change without notice.

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

Selection Guide

Part No.	Dice	Lens Type	luminous Intensity Note2 Iv(mcd) @ 20 mA		Φv (mlm) Note2 @ 20 mA	Viewing Angle Note1
			Min.	Typ.	Typ.	2θ1/2
SML10CW2KT-TR	WHITE (InGaN)	WATER CLEAR	380	800	1900	120°

Absolute Maximum Ratings at T_A=25°C

Parameter	Symbol	Value	Unit
Power dissipation	P_t	120	mW
Reverse Voltage	V_R	5	V
Junction temperature	T_J	110	°C
Operating Temperature	Top	-40 To +85	°C
Storage Temperature	Tstg	-40 To +100	°C
DC Forward Current	I_F	30	mA
Peak Forward Current Note3	I_{FM}	100	mA

Notes:
1.θ1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.
2.Luminous intensity/ luminous flux: +/-15%.
3.1/10 Duty Cycle, 0.1ms Pulse Width.

Electrical / Optical Characteristics at T_A=25°C

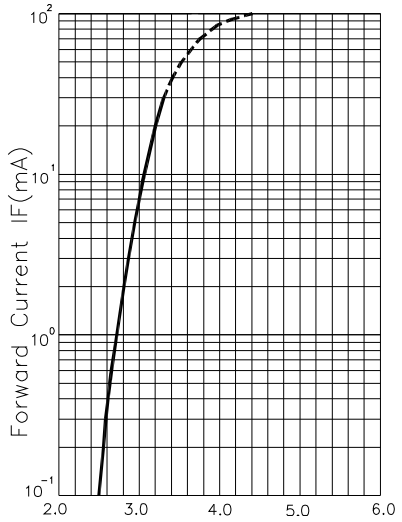
Parameter	Symbol	Value	Unit
Chromaticity coordinate x acc.to CIE1931 I_F=20mA [Typ.]	X Note1	0.33	-
Chromaticity coordinate y acc.to CIE1931 I_F=20mA [Typ.]	Y Note1	0.34	-
Forward Voltage I_F=20mA [Min.]	V_F Note2	2.6	V
Forward Voltage I_F=20mA [Typ.]		3.2	
Forward Voltage I_F=20mA [Max.]		4.0	
Reverse Current (V_R=5V) [Typ.]	I_R	0.01	μA
Reverse Current (V_R=5V) [Max.]		10	
Temperature coefficient of x I_F=20mA, -10°C≤ T≤100°C [Typ.]	TC x	-0.1	10^{-3}/°C
Temperature coefficient of y I_F=20mA, -10°C≤ T≤100°C [Typ.]	TCy	-0.2	10^{-3}/°C
Temperature coefficient of V_F I_F=20mA, -10°C≤ T≤100°C [Typ.]	TC_V	-2.5	mV/°C

Notes:
1.Chromaticity Coordinates X, Y: +/-0.01.
2.Forward Voltage: +/-0.1V.

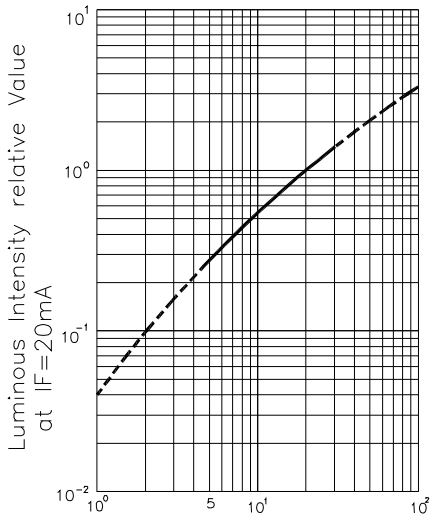
LEDTRONICS, INC.®
23105 Kashiwa Court, Torrance, CA 90505
Phone: (800) 579-4875 or (310) 534-1505 Fax: (310) 534-1424
E-mail: webmaster@ledtronics.com
Website: http://www.ledtronics.com

Brightness codes

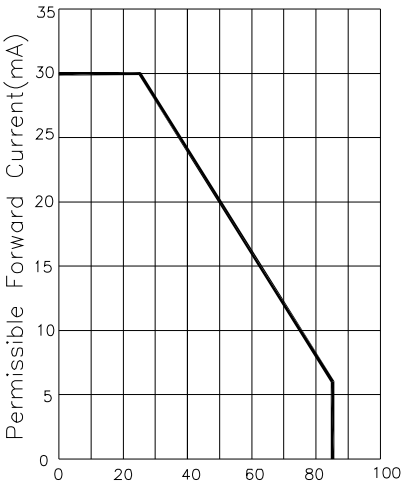
luminous Intensity Iv(mcd) @ 20 mA		
Code.	**Min.**	**Max.**
R	380	550
S	480	750
T	650	1100
U	900	1500
V	1200	1800



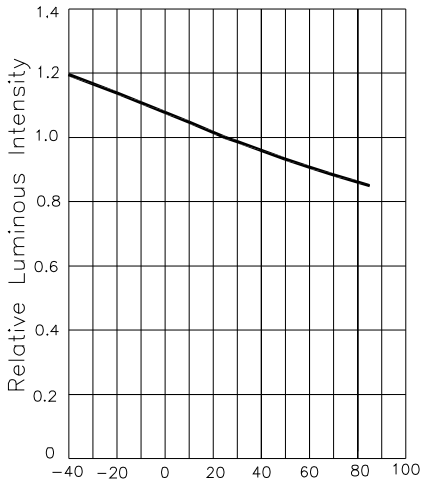
FORWARD CURRENT Vs.
FORWARD VOLTAGE



LUMINOUS INTENSITY Vs.
FORWARD CURRENT

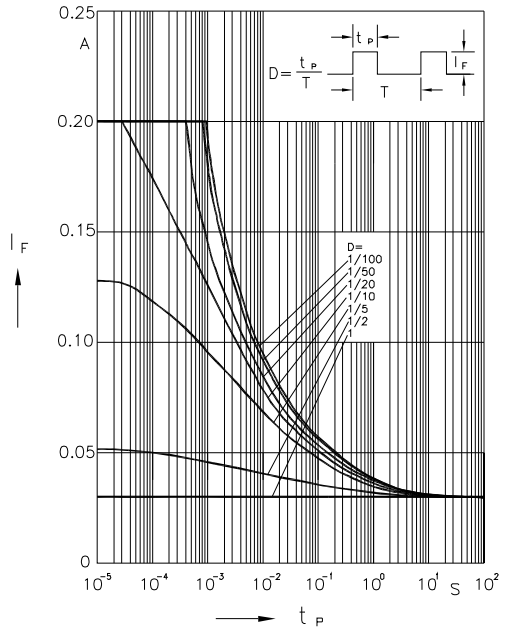


FORWARD CURRENT
DERATING CURVE

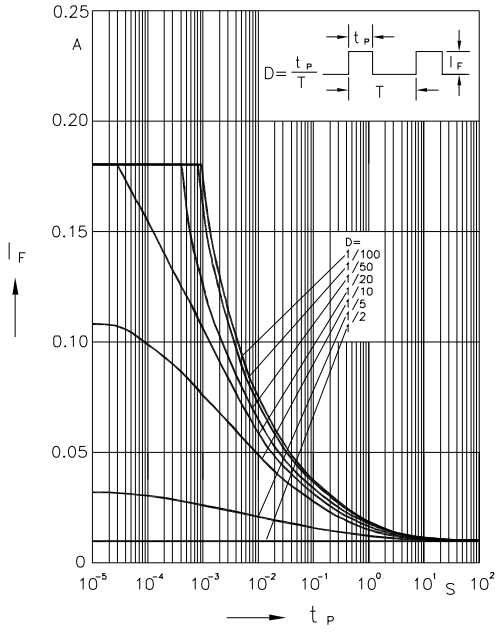


LUMINOUS INTENSITY VS.
AMBIENT TEMPERATURE

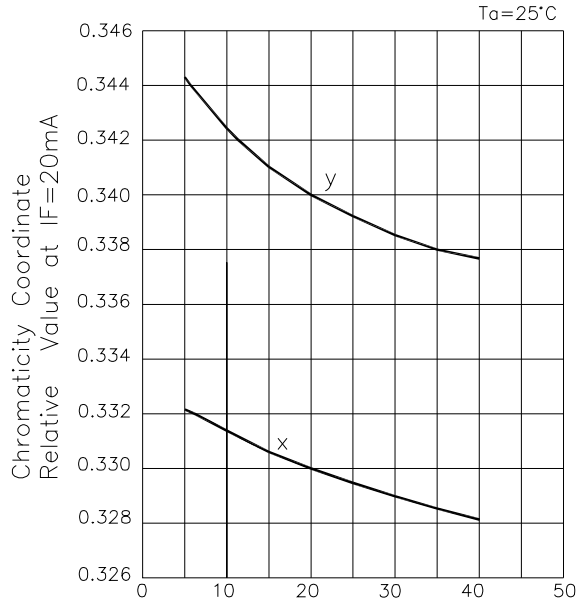
LEDTRONICS, INC.®
23105 Kashiwa Court, Torrance, CA 90505
Phone: (800) 579-4875 or (310) 534-1505 Fax: (310) 534-1424
E-mail: webmaster@ledtronics.com
Website: http://www.ledtronics.com



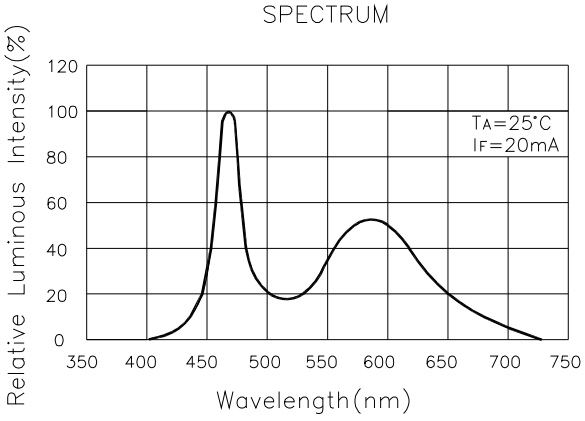
Permissible Pulse Handling Capability
Duty cycle D=parameter,TA=25°C

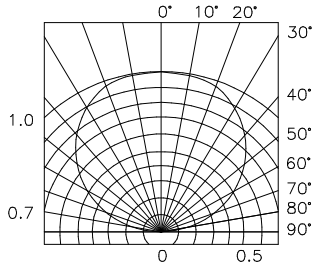


Permissible Pulse Handling Capability
Duty cycle D=parameter,TA=85°C



Forward Current(mA)
Chromaticity Coordinate Shift Vs.
Forward Current

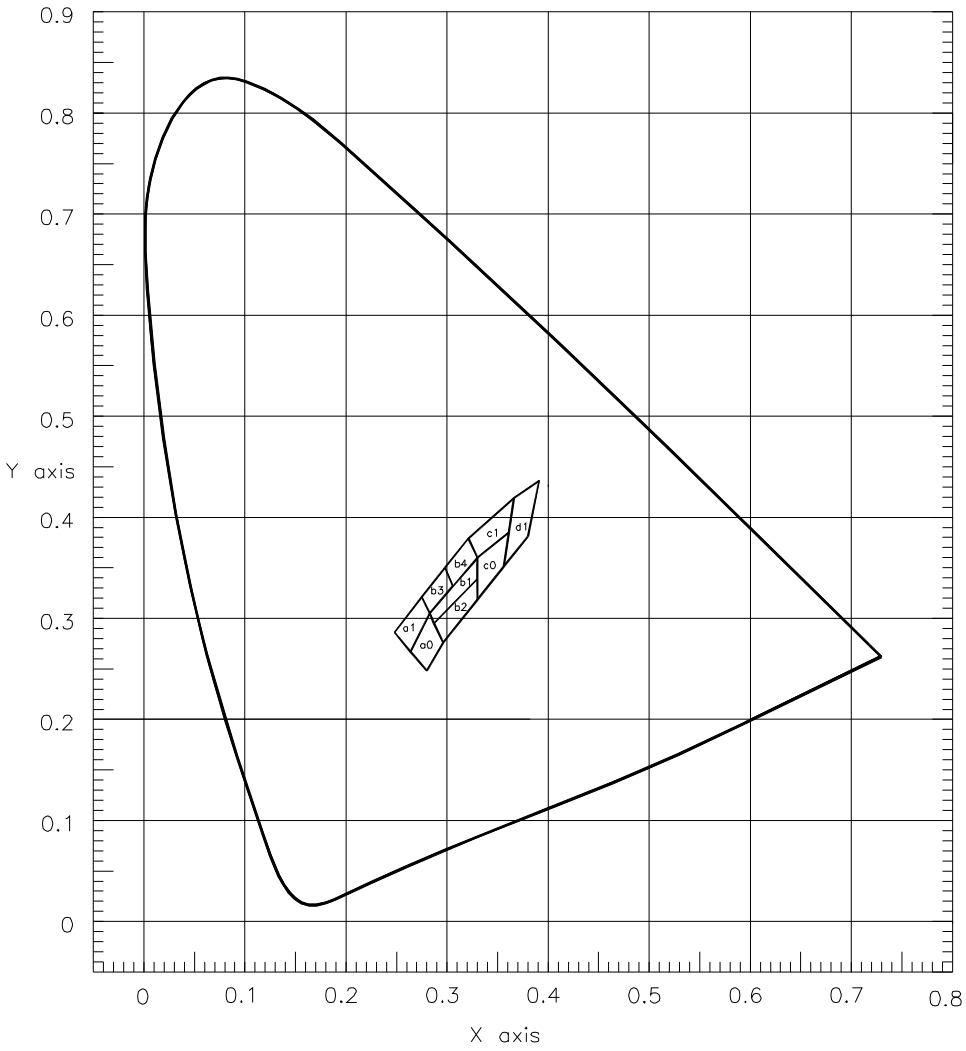




SPATIAL DISTRIBUTION

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

Color Codes



a1				
X	0.248	0.275	0.283	0.264
Y	0.286	0.321	0.305	0.267

a0				
X	0.264	0.283	0.296	0.280
Y	0.267	0.305	0.276	0.248

b3				
X	0.275	0.298	0.306	0.283
Y	0.321	0.350	0.332	0.305

b1				
X	0.283	0.330	0.330	0.287
Y	0.305	0.360	0.339	0.295

b2				
X	0.287	0.330	0.330	0.296
Y	0.295	0.339	0.318	0.276

b4				
X	0.298	0.321	0.330	0.306
Y	0.350	0.379	0.360	0.332

c1				
X	0.321	0.366	0.361	0.330
Y	0.379	0.419	0.385	0.360

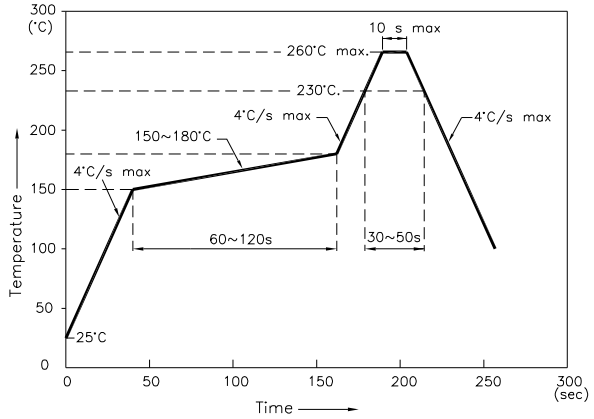
c0				
X	0.330	0.361	0.356	0.330
Y	0.360	0.385	0.351	0.318

d1				
X	0.366	0.391	0.380	0.356
Y	0.419	0.436	0.381	0.351

Ta=25°, IF=20mA Measurement Uncertainty of the Color Coordinates:+/−0.01

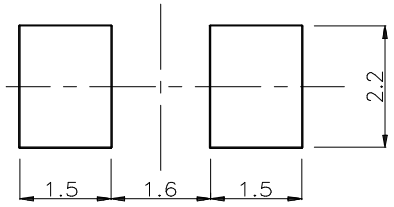
LEDTRONICS, INC.®
23105 Kashiwa Court, Torrance, CA 90505
Phone: (800) 579-4875 or (310) 534-1505 Fax: (310) 534-1424
E-mail: webmaster@ledtronics.com
Website: http://www.ledtronics.com

Reflow Soldering Profile For Lead-free SMT Process.

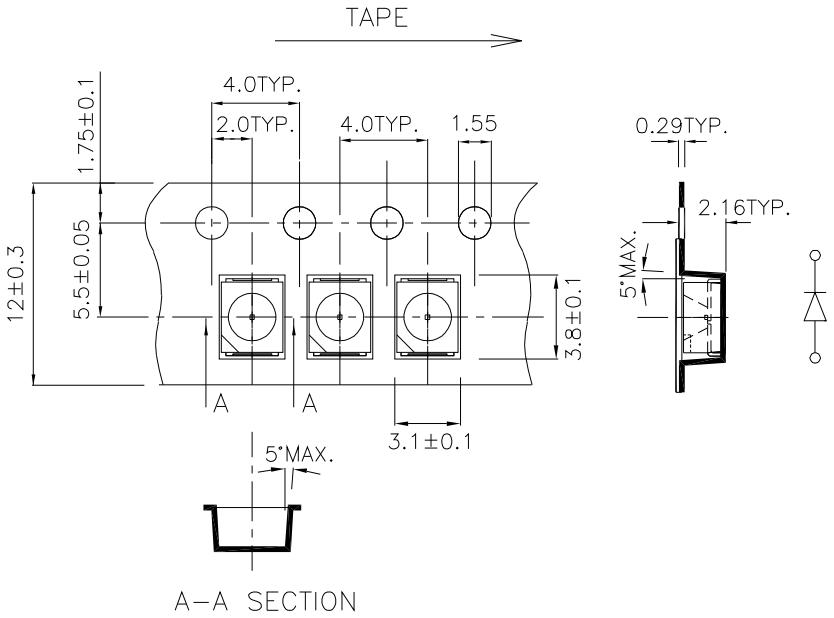


NOTES:
1. We recommend the reflow temperature 245°C(+/-5°C).The maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

Recommended Soldering Pattern
(Units : mm)



Tape Specifications
(Units : mm)



Note: Tolerance is ±0.25 unless otherwise noted.