Kingbright

2.0x1.25mm SMD CHIP LED LAMP

PRELIMINARY SPEC

ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

Part Number: APTK2012RWC/A-F01 White

Features

- 2.0mmx1.25mm SMT LED, 0.75mm thickness.
- Low power consumption.
- Wide viewing angle.
- Ideal for back light and indicator.
- Various colors and lens types available.
- Package : 2000pcs / reel.
- Moisture sensitivity level : level 4.
- Electrostatic discharge threshold (HBM):1000V.
- Typ. color temperature:6500K
- Color coordinates:x=0.31,y=0.31 acc. to CIE1931(white).
- Optical efficiency:10.94 lm/W(typ.)
- Color reproduction index:80
- RoHS compliant.

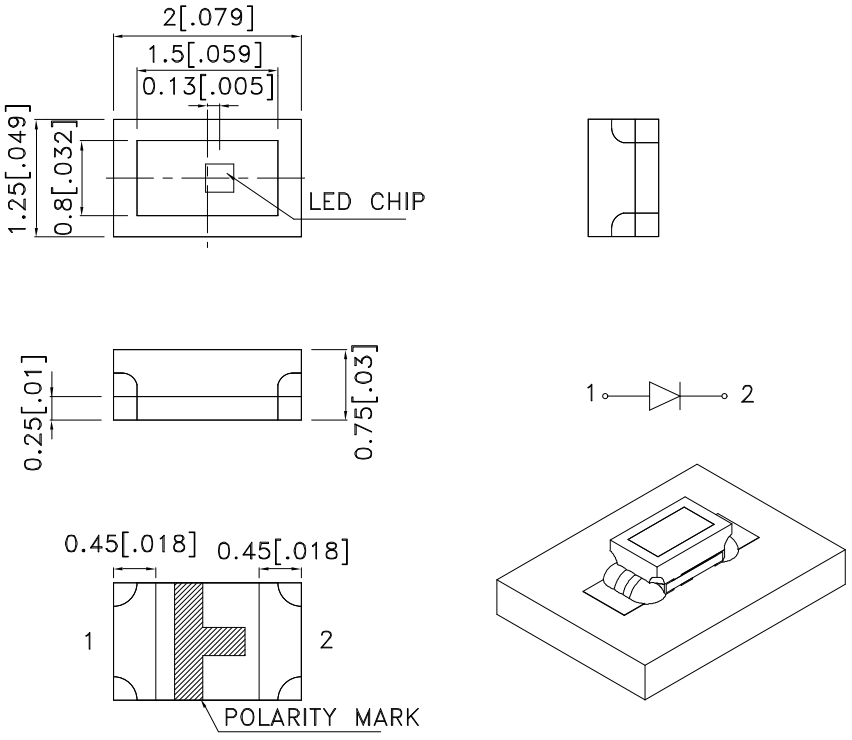
Description

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 camps.
- 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 ±0.1(0.004") unless otherwise noted.
3. Specifications are subject to change without notice.
4. The device has a single mounting surface. The device must be mounted according to the specifications.

Selection Guide

Part No.	Dice	Lens Type	luminous Intensity Note2 Iv(mcd) @ 20 mA		Φv (mlm) Note3 @ 20 mA	Viewing Angle Note1
			Min.	Typ.	Typ.	2 θ 1/2
APTK2012RWC/A-F01	WHITE (InGaN)	WATER CLEAR	70	200	700	100 °

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 Note4	I_{FM}	100	mA
Thermal resistance Junction/ambient Note5 Junction/solder point	$R_{th\ JA}$ $R_{th\ JS}$	350 130	°C/W °C/W

Notes:
1.θ 1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.
2.Luminous intensity is measured by a current pulse of 10ms at a tolerance of ±15%.
3.The typical data of Luminous Flux can only reflect statistical figures, actual parameters of individual product could differ from the typical data.
For the purpose of product enhancement, the typical data is subject to change without prior notice.
4.1/10 Duty Cycle, 0.1ms Pulse Width.
5.Rth(J-A) Results from mounting on PC board FR4 (pad size ≥ 16 mm^2 per pad),

Electrical / Optical Characteristics at T_A=25°C

Parameter	Symbol	Value	Unit
Chromaticity coordinate x acc.to CIE1931 I_F=20mA [Typ.]	X Note1	0.31	-
Chromaticity coordinate y acc.to CIE1931 I_F=20mA [Typ.]	Y Note1	0.31	-
Forward Voltage I_F=20mA [Min.]	V_F Note2	2.7	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	μ A
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

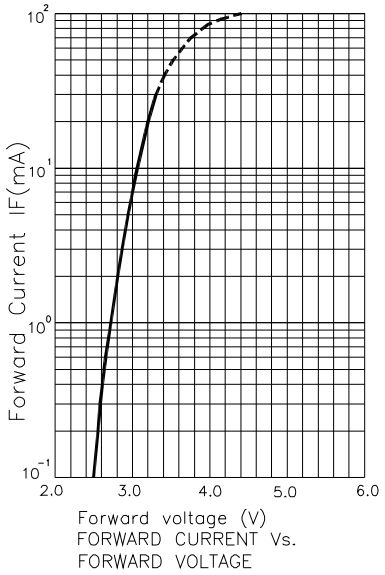
Notes:
1.Chromaticity coordinates are measured by a current pulse of 20ms with a tolerance of ±0.01 in X and Y color coordinates.
2.Forward voltage is measured with a current pulse of 10ms at a tolerance of ±0.1V.

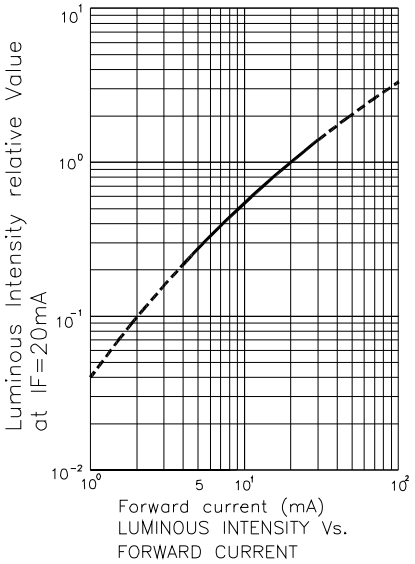
Brightness codes

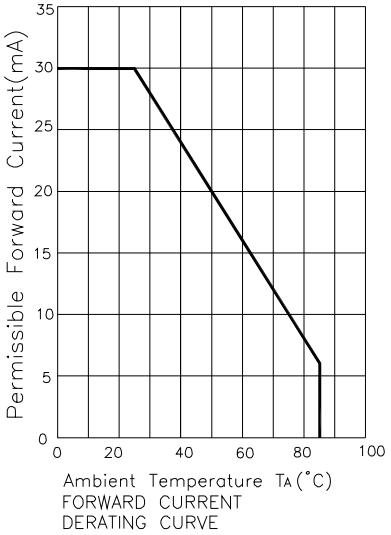
luminous Intensity[Note1] Iv(mcd) @ 20 mA			Φv(mlm)[Note2] @ 20 mA
Code.	**Min.**	**Max.**	**Typ.**
M	70	130	300
N	110	220	480
P	180	320	710
Q	280	420	960

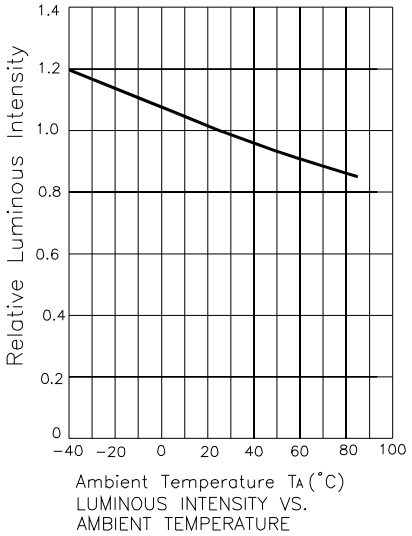
Notes:
1.Luminous intensity is measured by a current pulse of 10ms at a tolerance of ±15%.
2.The typical data of Luminous Flux can only reflect statistical figures, actual parameters of individual product could differ from the typical data. For the purpose of product enhancement, the typical data is subject to change without prior notice.

White **APTK2012RWC/A-F01**









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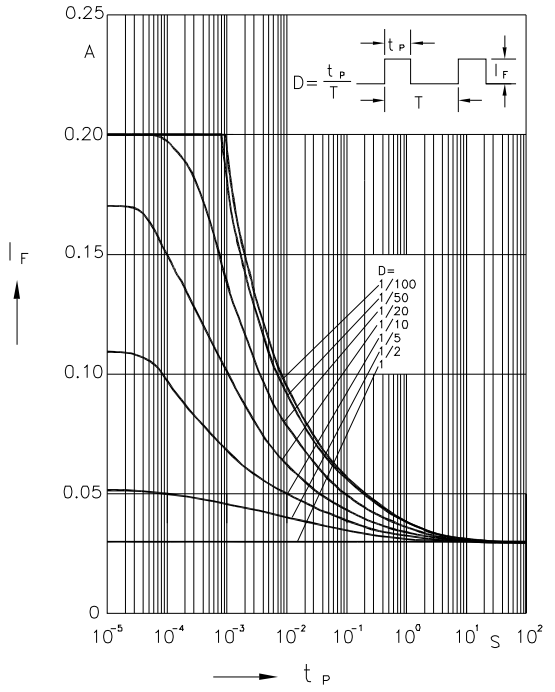
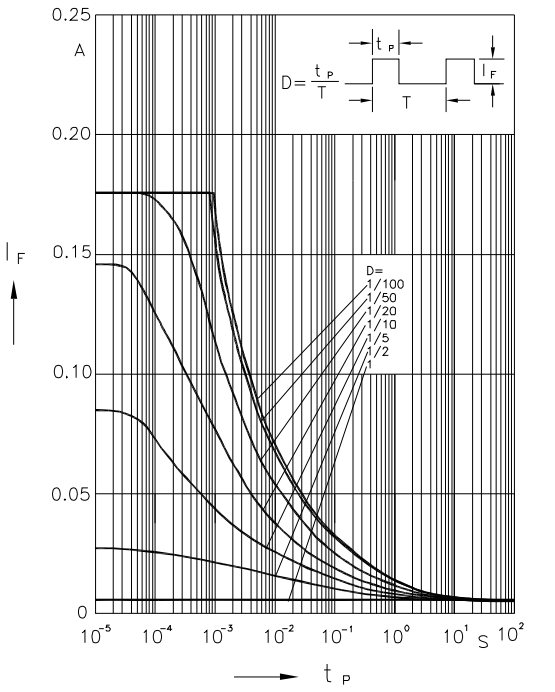
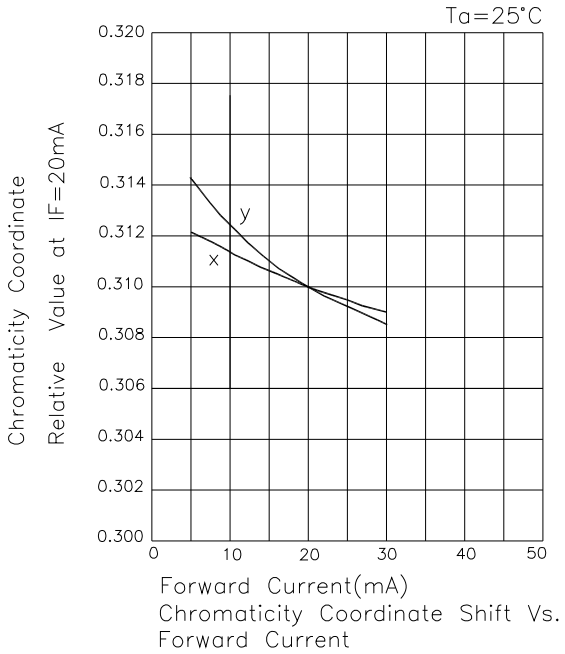


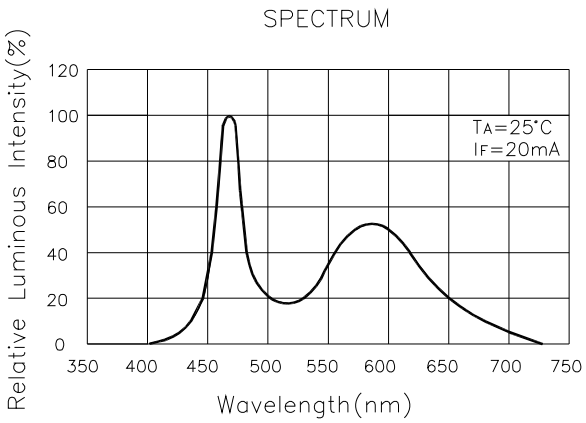
Permissible Pulse Handling Capability
Duty cycle D=parameter,TA=25°C

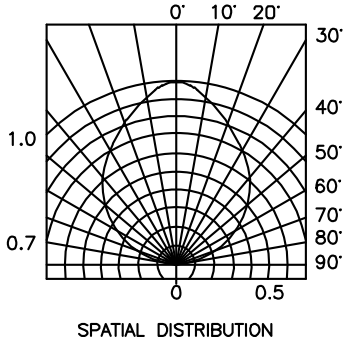


Permissible Pulse Handling Capability
Duty cycle D=parameter,TA=85°C



Chromaticity Coordinate Shift Vs.
Forward Current

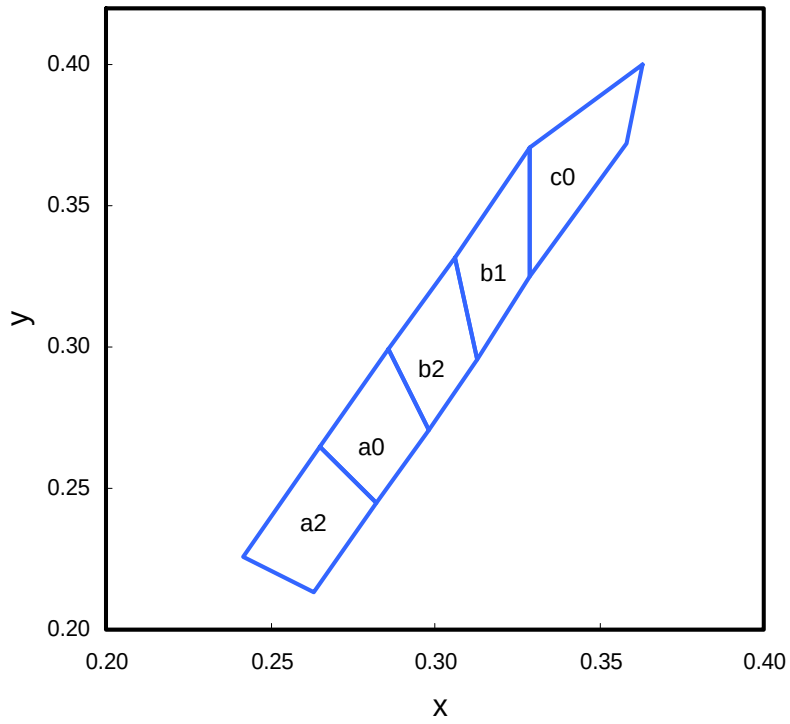




SPATIAL DISTRIBUTION

APTK2012RWC/A-F01

White CIE



Rank a2				
X	0.263	0.282	0.265	0.242
Y	0.213	0.245	0.265	0.226

Rank a0				
X	0.282	0.298	0.286	0.265
Y	0.245	0.271	0.299	0.265

Rank b2				
X	0.298	0.313	0.306	0.286
Y	0.271	0.296	0.332	0.299

Rank b1				
X	0.313	0.329	0.329	0.306
Y	0.296	0.325	0.371	0.332

Rank c0				
X	0.329	0.358	0.363	0.329
Y	0.325	0.372	0.400	0.371

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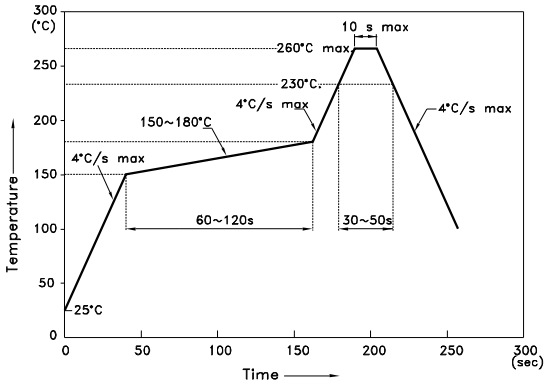
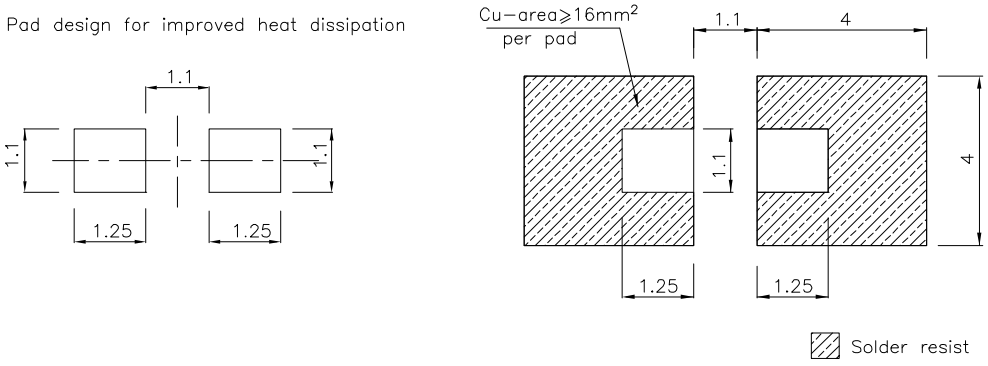
Reflow Soldering Profile For Lead-free SMT Process.

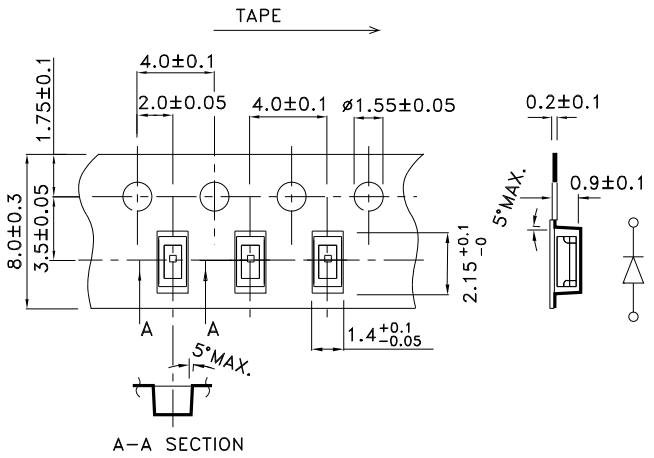


NOTES:
1. We recommend the reflow temperature 245°C(+/-5°C).The maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

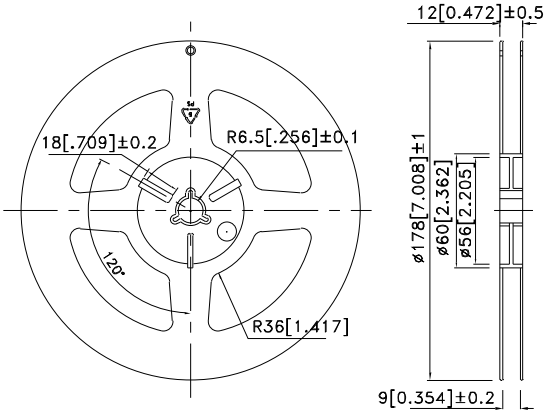
Recommended Soldering Pattern (Units : mm; Tolerance: ± 0.1)



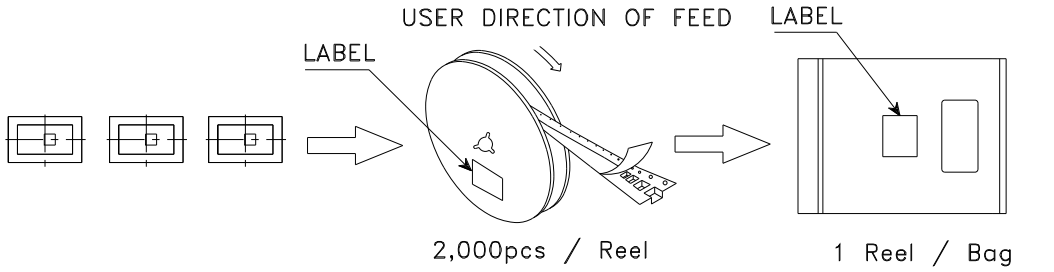
Tape Specifications (Units : mm)

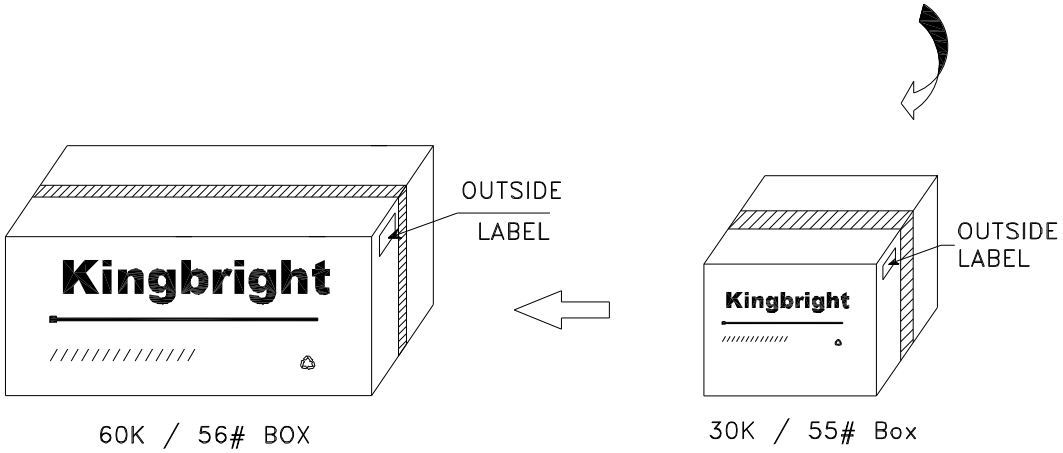


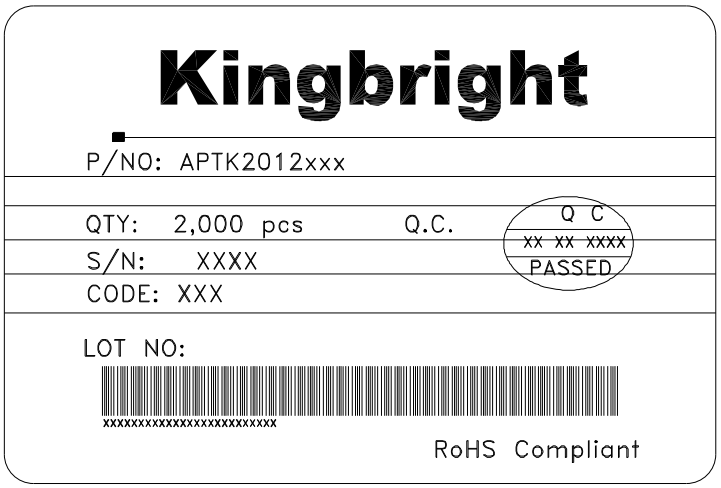
Reel Dimension



PACKING & LABEL SPECIFICATIONS **APTK2012RWC/A-F01**







LifeElectronics
Живое партнерство

ООО «ЛайфЭлектроникс» **“LifeElectronics” LLC**

ИНН 7805602321 КПП 780501001 Р/С 40702810122510004610 ФАКБ "АБСОЛЮТ БАНК" (ЗАО) в г.Санкт-Петербурге К/С 30101810900000000703 БИК 044030703

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