PRELIMINARY SPEC



ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

Part Number: APT3216RWF/A WHITE

Features

- 3.2mmx1.6mm SMT LED, 0.75mm THICKNESS.
- LOW POWER CONSUMPTION.
- WIDE VIEWING ANGLE.
- IDEAL FOR BACKLIGHT AND INDICATOR.
- VARIOUS COLORS AND LENS TYPES AVAILABLE.
- PACKAGE : 2000PCS / REEL.
- MOISTURE SENSITIVITY LEVEL : LEVEL 3.
- ELECTROSTATIC DISCHARGE THRESHOLD (HBM):1000V.
- TYP. COLOR TEMPERATURE:6500K
- COLOR COORDINATES:X=0.31,Y=0.31 ACC. TO CIE1931(WHITE).
- OPTICAL EFFICIENCY:17.2 lm/W(TYP.)
- COLOR REPRODUCTION INDEX:80
- RoHS COMPLIANT.

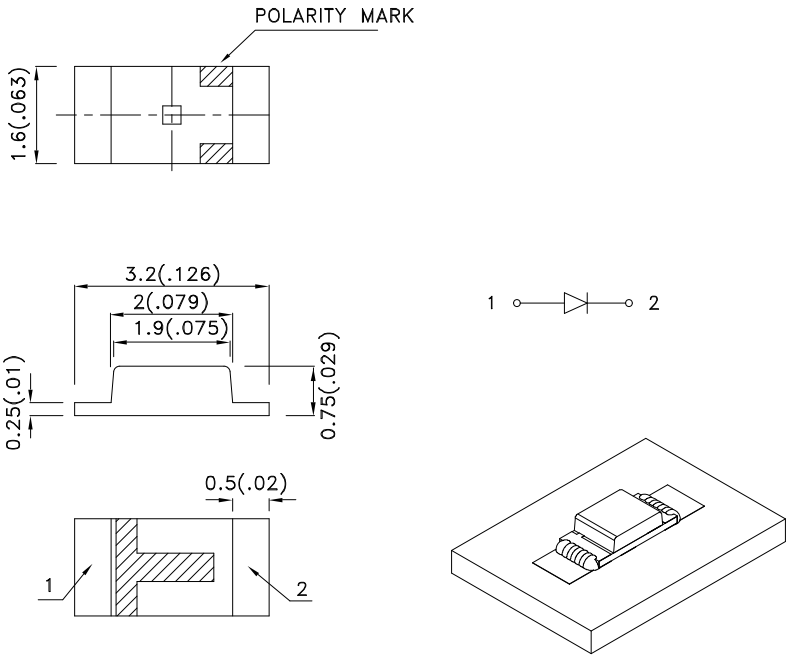
Description

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



1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.2(0.008") 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
APT3216RWF/A	WHITE (InGaN)	YELLOW FLUORESCENT	70	140	1100	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 Note4	I_{FM}	100	mA
Thermal resistance Junction/ambient Note5 Junction/solder point	$R_{th\ JA}$ $R_{th\ JS}$	300 120	°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	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

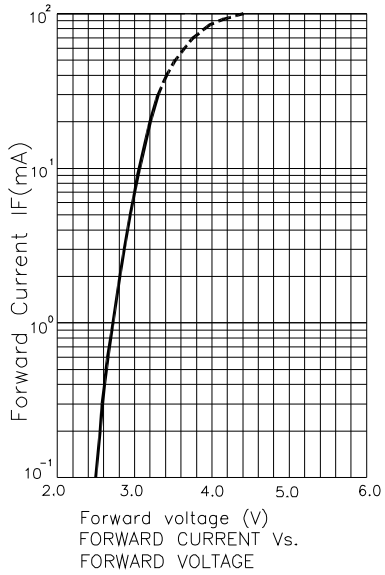
Notes:
1.Chromaticity coordinates are measured by a current pulse of 20ms with a tolerance of ±0.01 in X and Y color coordinates.
2.Forward voltage is measured with a current pulse of 10ms at a tolerance of ±0.1V.

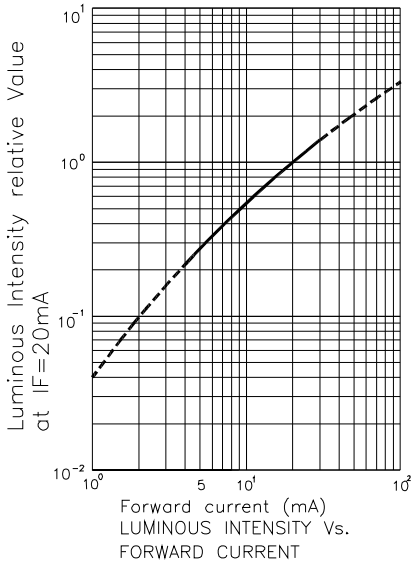
Brightness codes

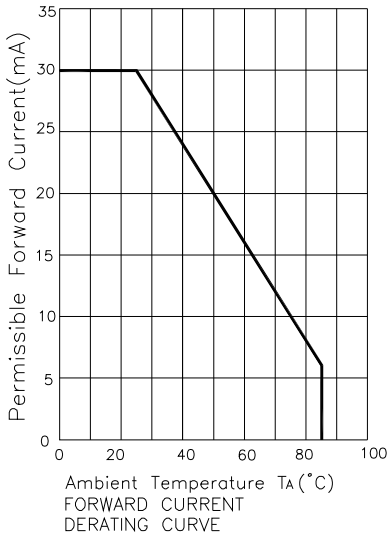
Iuminous Intensity Note1 Iv(mcd) @ 20mA			Φv (mlm) Note2 @ 20mA
Code.	**Min.**	**Max.**	**Typ.**
M	70	130	820
N	110	220	900
P	180	320	1100
Q	280	420	1200

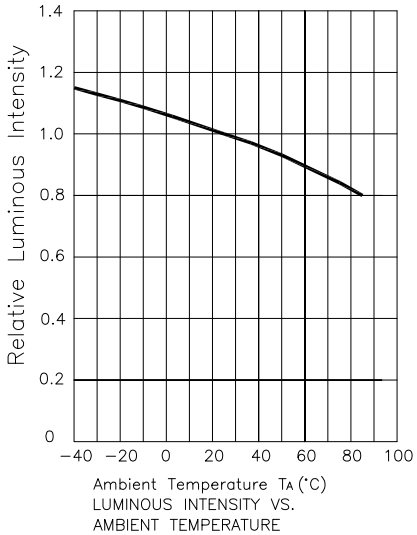
Notes:
1.Luminous intensity is measured by a current pulse of 10ms at a tolerance of ±15%.
2.The typical data of Luminous Flux can only reflect statistical figures, actual parameters of individual product could differ from the typical data. For the purpose of product enhancement, the typical data is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

White **APT3216RWF/A**

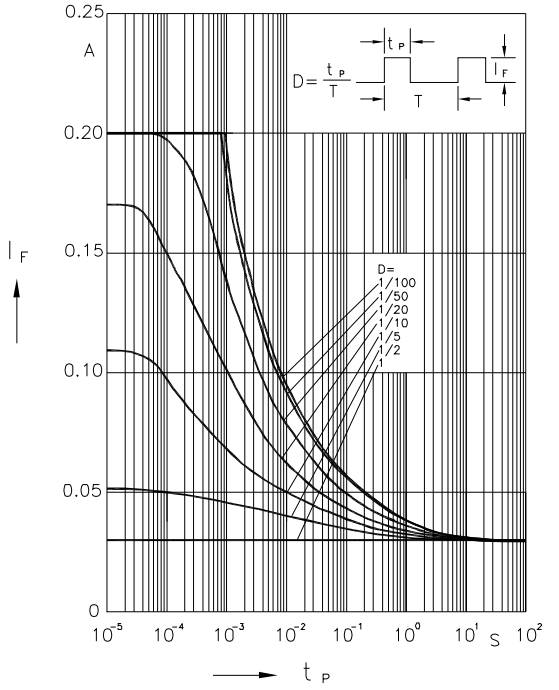




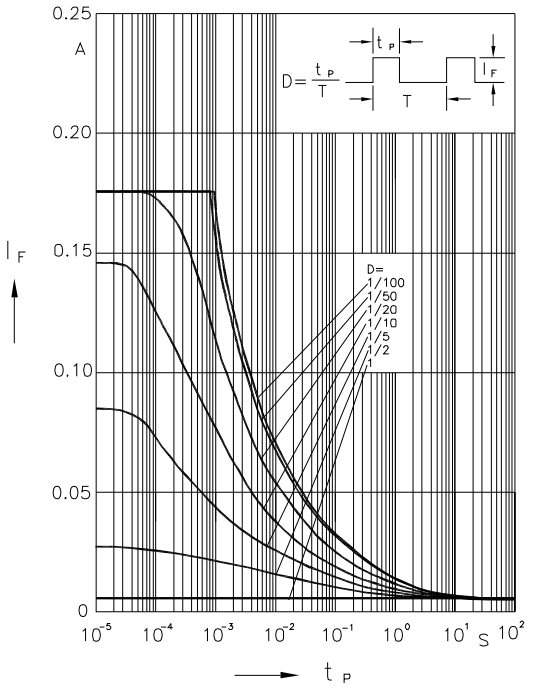




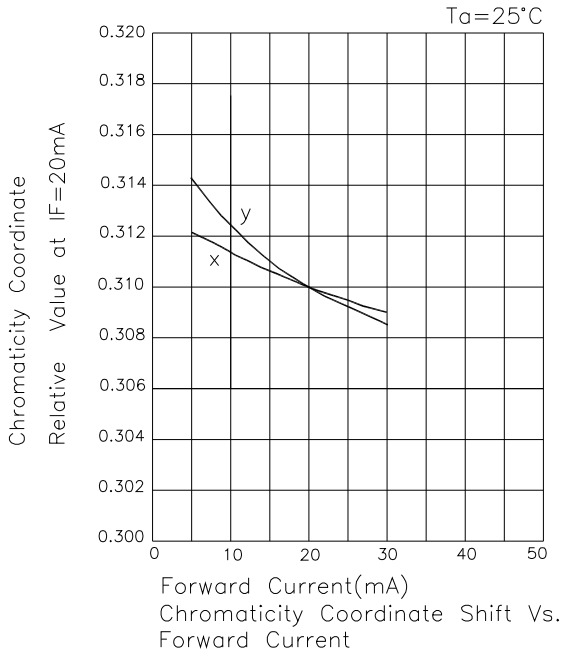
APT3216RWF/A



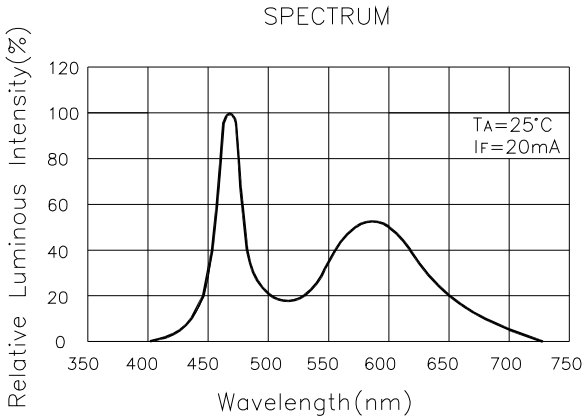
Permissible Pulse Handling Capability
Duty cycle D=parameter,TA=25°C

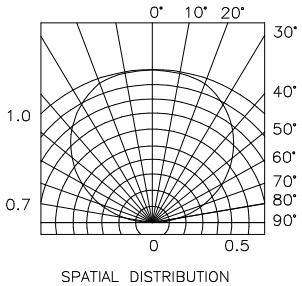


Permissible Pulse Handling Capability
Duty cycle D=parameter,TA=85°C



Chromaticity Coordinate Shift Vs.
Forward Current

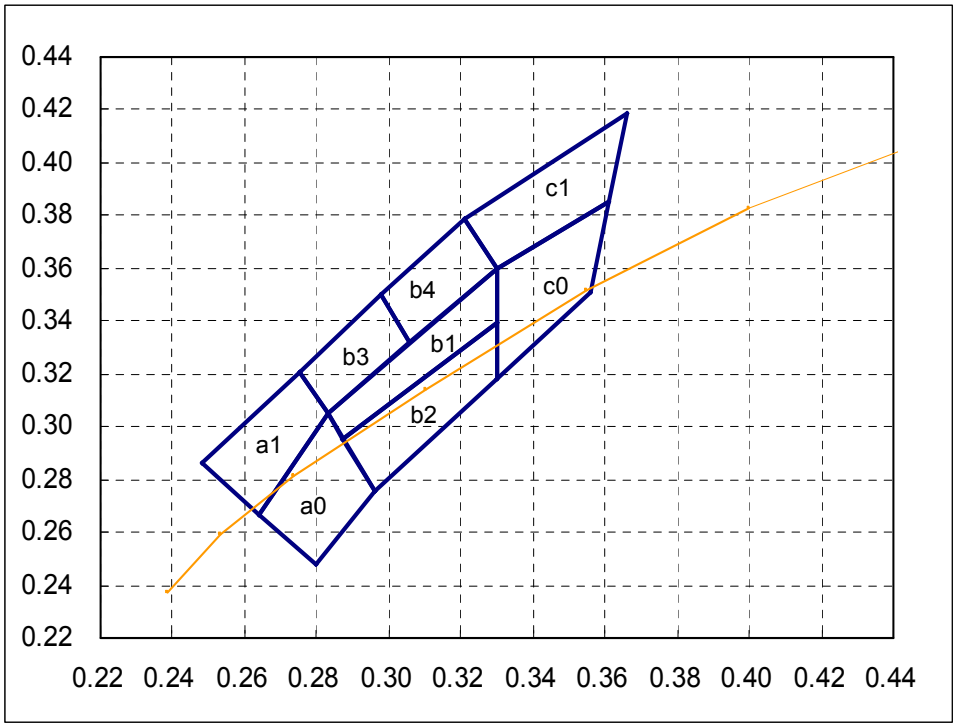




SPATIAL DISTRIBUTION

APT3216RWF/A

White CIE



a0				
X	0.264	0.283	0.296	0.280
Y	0.267	0.305	0.276	0.248
Reference CCT: 14000~9000k				

a1				
X	0.248	0.275	0.283	0.264
Y	0.286	0.321	0.305	0.267
Reference CCT: 14000~9000k				

b1				
X	0.283	0.330	0.330	0.287
Y	0.305	0.360	0.339	0.295
Reference CCT: 9000~5600k				

b2				
X	0.287	0.330	0.330	0.296
Y	0.295	0.339	0.318	0.276
Reference CCT: 9000~5600k				

b3				
X	0.275	0.298	0.306	0.283
Y	0.321	0.350	0.332	0.305
Reference CCT: 9000~7000k				

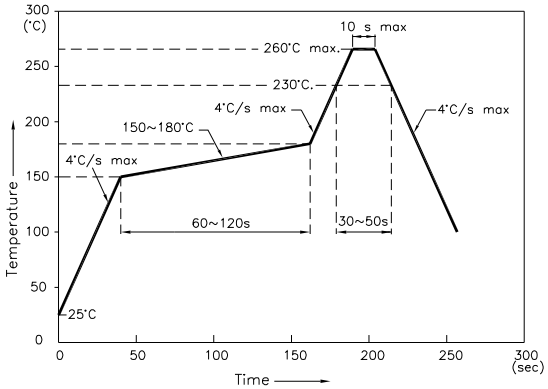
b4				
X	0.298	0.321	0.330	0.306
Y	0.350	0.379	0.360	0.332
Reference CCT: 7600~5600k				

c0				
X	0.330	0.361	0.356	0.330
Y	0.360	0.385	0.351	0.318
Reference CCT: 5600~4600k				

c1				
X	0.321	0.366	0.361	0.330
Y	0.379	0.419	0.385	0.360
Reference CCT: 6000~4600k				

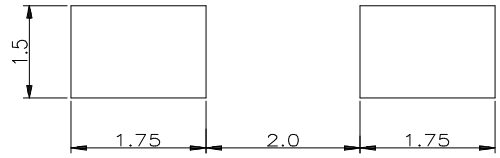
APT3216RWF/A

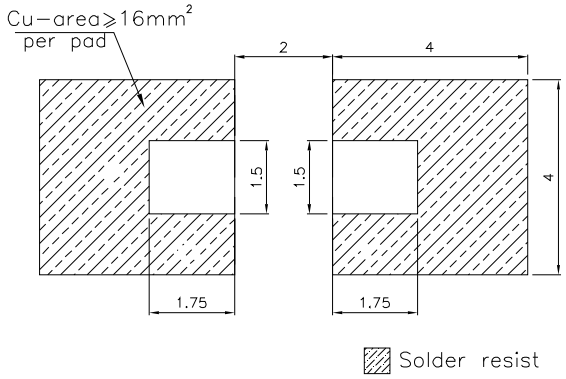
Reflow Soldering Profile For Lead-free SMT Process.



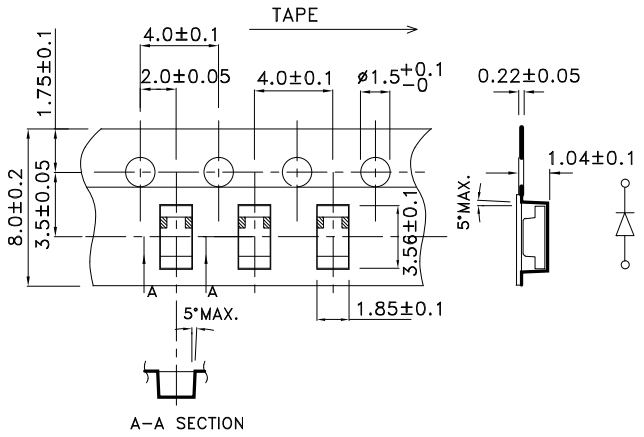
NOTES:
1. We recommend the reflow temperature 245°C(+/-5°C).The maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

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

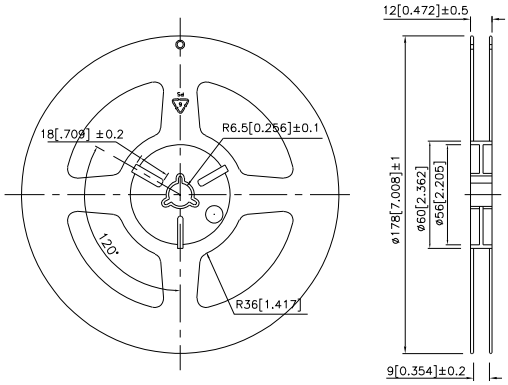




Tape Specifications (Units : mm)



Reel Dimension



PACKING & LABEL SPECIFICATIONS **APT3216RWF/A**

