



納智科技  
*Nanogy*

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(LED 國際採購交易中心)  
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## DATA SHEET

PART NO. : NA-COB-XW Series

REV: A/0

CUSTOMER'S APPROVAL: \_\_\_\_\_ DCC: \_\_\_\_\_

DOC NO. : SZO-01-10-0001

DATE: 2010-01-20



## High power LED Technical Datasheet

### ■ LAW Materials:

Items	Description	Remark
Substrate	MCPCB	
Housing white body	Heat resistant polymer	
Encapsulating Resin	Silicon resin	
Lens	Silicon/Polymer	
Electrodes	Ag plating copper alloy	
Die attach	Silver Paste	
Chip	InGaN/GaN/AlInGaP	
ZENER DIODE	Al/Au	Top Metallization

### ■ FEATURES

- High Flux per LED
- Long operating life
- No UV
- Low voltage DC operated
- ESD Protection
- Various colors
- ROHS compliance

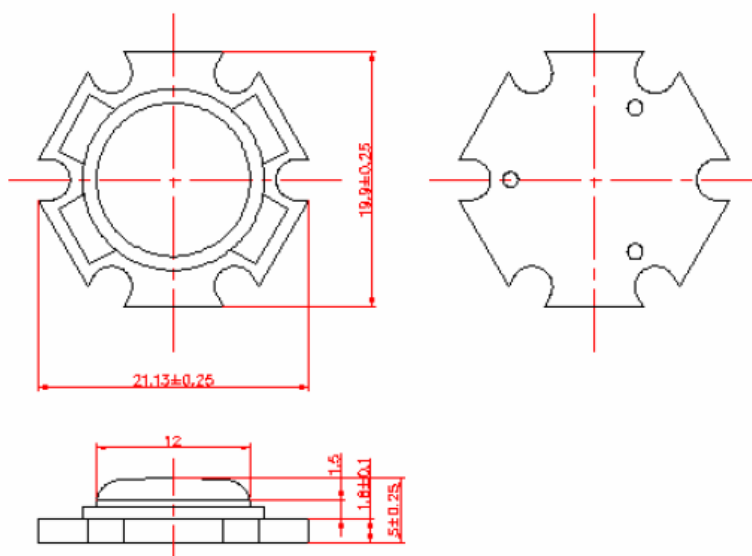
### ■ APPLICATIONS

- Signal lighting
- LCD Backlighting
- General lighting
- Reading light (car, bus, aircraft)
- Commercial and Residential Architectural lighting
- Decoration lighting
- Traffic signaling and wayside lighting



■ PACKAGE DIMENSIONS

• Pattern



**Notes:**

1. All dimensions are in mm.
2. Tolerances unless dimensions  $\pm 0.25$  mm.
3. Drawings are not to scale.
4. It is strongly recommended that the temperature of heat slug be not higher than  $55^{\circ}\text{C}$ .
5. Pd free , RoHS compliant



■ 3W (3\*1) **ABSOLUTE MAXIMUM RATINGS**

Parameter	Symbol	Rating		Unit
		White/Warm White/Blue/Green	Red/Yellow	
DC Forward Current	$I_F$	350~1500	150~350	mA
Forward Voltage	$V_F$	6.0~12	4.5~7.5	v
Operating Temperature	$T_{opr}$	-40 ~ +110		°C
Storage Temperature	$T_{stg}$	-40 ~ +110		°C
Junction temperature	$T_j$	125		°C
ESD Sensitivity	$V_B$	2000		V
Manual Soldering Time at 260 °C	$T_{sol}$	5		s

■ 5W (4\*1) **ABSOLUTE MAXIMUM RATINGS**

Parameter	Symbol	Rating		Unit
		White/Warm White/Blue/Green	Red/Yellow	
DC Forward Current	$I_F$	350~1500	150~350	mA
Forward Voltage	$V_F$	12~13.2	6~10	v
Operating Temperature	$T_{opr}$	-40 ~ +110		°C
Storage Temperature	$T_{stg}$	-40 ~ +110		°C
Junction temperature	$T_j$	125		°C
ESD Sensitivity	$V_B$	2000		V
Manual Soldering Time at 260 °C	$T_{sol}$	5		s

■ 5W (2\*2) **ABSOLUTE MAXIMUM RATINGS**

Parameter	Symbol	Rating		Unit
		White/Warm White/Blue/Green	Red/Yellow	
DC Forward Current	$I_F$	700~1500	300~700	mA
Forward Voltage	$V_F$	6.0~7.5	3.0~5.0	v
Operating Temperature	$T_{opr}$	-40 ~ +110		°C
Storage Temperature	$T_{stg}$	-40 ~ +110		°C
Junction temperature	$T_j$	125		°C
ESD Sensitivity	$V_B$	2000		V
Manual Soldering Time at 260 °C	$T_{sol}$	5		s



■ 8W (6\*1) **ABSOLUTE MAXIMUM RATINGS**

Parameter	Symbol	Rating		Unit
		White/Warm White/Blue/Green	Red/Yellow	
DC Forward Current	$I_F$	350~1500	150~350	mA
Forward Voltage	$V_F$	18~22	9~15	v
Operating Temperature	$T_{opr}$	-40 ~ +110		°C
Storage Temperature	$T_{stg}$	-40 ~ +110		°C
Junction temperature	$T_j$	125		°C
ESD Sensitivity	$V_B$	2000		V
Manual Soldering Time at 260 °C	$T_{sol}$	5		s

■ 8W (3\*2) **ABSOLUTE MAXIMUM RATINGS**

Parameter	Symbol	Rating		Unit
		White/Warm White/Blue/Green	Red/Yellow	
DC Forward Current	$I_F$	700~1500	300~700	mA
Forward Voltage	$V_F$	10.0~12	4.5~7.5	v
Operating Temperature	$T_{opr}$	-40 ~ +110		°C
Storage Temperature	$T_{stg}$	-40 ~ +110		°C
Junction temperature	$T_j$	125		°C
ESD Sensitivity	$V_B$	2000		V
Manual Soldering Time at 260 °C	$T_{sol}$	5		s

■ 10W (8\*1) **ABSOLUTE MAXIMUM RATINGS**

Parameter	Symbol	Rating		Unit
		White/Warm White/Blue/Green	Red/Yellow	
DC Forward Current	$I_F$	350~1500	150~350	mA
Forward Voltage	$V_F$	24~32	12~16	v
Operating Temperature	$T_{opr}$	-40 ~ +110		°C
Storage Temperature	$T_{stg}$	-40 ~ +110		°C
Junction temperature	$T_j$	125		°C
ESD Sensitivity	$V_B$	2000		V
Manual Soldering Time at 260 °C	$T_{sol}$	5		s



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■ 10W (4\*2) **ABSOLUTE MAXIMUM RATINGS**

Parameter	Symbol	Rating		Unit
		White/Warm White/Blue/Green	Red/Yellow	
DC Forward Current	$I_F$	700~1500	300~700	mA
Forward Voltage	$V_F$	12~16	6~10	v
Operating Temperature	$T_{opr}$	-40 ~ +110		°C
Storage Temperature	$T_{stg}$	-40 ~ +110		°C
Junction temperature	$T_j$	125		°C
ESD Sensitivity	$V_B$	2000		V
Manual Soldering Time at 260 °C	$T_{sol}$	5		s



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■ **DOMINANT WAVELENGTH OR PEAK WAVELENGTH OR COLOR TEMPERATURE**

**CHARACTERISTICS AT  $I_F=350mA$**

Lens type	Color	Min.	Typ.	Max.	Unit
	White	○	4500	7000	K
	Warm White	●	2700	4500	K
	Red	●	615	645	nm
	Yellow	●	589	599	nm
	Green	●	500	535	nm
	Blue	●	455	475	nm



■ Reliability Test

Item	Description	Stress Condition	Test Duration
RTOLC	Room Temperature Operation Life	25°C	1000 hours
WHT	Wet High Temperature	85°C / 85%RH	1000 hours
TC	Temperature Cycling	-40/+110°C 30min dwell, <5min trans	200 cycles
TS	Thermal Shock	-40/+110°C 20min dwell, <20min trans	200 cycles
HTSL	High Temperature Storage Light	120°C	1000 hours
LTOL	Low Temperature Storage Light	-40°C	1000 hours
SHR	Solder Heat Resistance	260±5°C, 5 secs	
MS	Mechanical Shock	1500G, 0.5ms pulse 5 shocks each 6 axis	
ND	Natural Drop	On concrete from 1.2m, 3*times	
RV	Random Vibration	6G RMS from 10 to 2KHz, 10mins/axis	
VVF	Variable Vibration Frequency	10-2000-10Hz, 20G 1min, 1.5min, 3times/axis	

■ Soldering Conditions

Item	Description		Remark
	Reflow Soldering	Hand Soldering	
Soldering	Lead Soldering	Lead-free Solder	Temperature Soldering time 350°C Max 3 sec Max (one time only)
Pre-heat	120~150°C	180~200°C	
Pre-heat time	120 sec Max	120 sec Max	
Peak temperature	240°C Max	260°C Max	
Soldering time	10 sec Max	10 sec Max	
Condition	Refer to Temperature- Profile (1)	Refer to Temperature- Profile (2)	