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NTE30180 Series LED, 3W, High Power 20mm x 20mm Star Base Aluminum PCB

Features:

- Water Clear Lens
- Available in White (W), Warm White (WW), Red (R), Green (G), and Blue (B) Colors

Applications:

- Decorative Lighting
- Architectural Lighting
- Residential Lighting
- Commercial Lighting
- Automotive Interiors



Absolute Maximum Ratings: ($T_A = +25^\circ\text{C}$ unless otherwise specified)

Power Dissipation (Note 1), P_D	3W
Peak Forward Current (1/10 Duty Cycle, 0.1ms Pulse Width), $I_F(\text{peak})$	1000mA
Continuous Forward Current, I_F	
NTE30180-W, NTE30180-WW, NTE30180-G, NTE30180-B	750mA
NTE30180-R	800mA
Reverse Voltage, V_R	5V
LED Junction Temperature, J_T	+120°C
Operating Temperature Range, T_{opr}	-40° to +85°C
Storage Temperature Range, T_{opr}	-20° to +60°C

**** These 3W star type LEDs are capable of producing a very high brightness. Please DO NOT look directly at them for any prolonged period of time.**

Note 1. 1W compatible if 400mA, 2.0 – 2.6V (Red) and 350mA, 3.0 – 3.6V (All other colors)

Electrical/Optical Characteristics: ($T_A = +25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Luminous Flux	Φ	$I_F = 750\text{mA}$	210	230	250	Lm
NTE30180-W			180	210	230	Lm
NTE30180-WW		$I_F = 800\text{mA}$	70	90	110	Lm
NTE30180-R			70	80	110	Lm
NTE30180-G			15	20	25	Lm
NTE30180-B		$I_F = 750\text{mA}$	70	80	110	Lm
Viewing Angle	2 Θ 1/2	$I_F = 800\text{mA}$	115	120	125	deg
NTE30180-R Only		$I_F = 750\text{mA}$	115	120	125	deg
All Others						



Electrical/Optical Characteristics: ($T_A = +25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Forward Voltage NTE30180-R Only	V_F	$I_F = 800\text{mA}$	2.2	2.5	2.8	V
All Others		$I_F = 750\text{mA}$	3.4	3.8	4.0	V
Reverse Current	I_R	$V_R = 5\text{V}$	–	–	10	μA
Color Rendering Index NTE30180-W & NTE30180-WW Only	R_a	$I_F = 750\text{mA}$	60	75	90	*
Color Temperature NTE30180-W	CCT	$I_F = 750\text{mA}$	5500	6000	6500	K
NTE30180-WW			3000	3150	3300	K
Wavelength NTE30180-R		$I_F = 800\text{mA}$	620	625	630	nm
NTE30180-G		$I_F = 750\text{mA}$	515	520	530	nm
NTE30180-B			460	465	470	nm
Junction Temperature NTE30180-R	T_J	$I_F = 800\text{mA}$	–	115	–	$^{\circ}\text{C}$
All Others		$I_F = 750\text{mA}$	–	115	–	$^{\circ}\text{C}$

CAUTION!

In high power LEDs, the maximum driving current falls in the 350 – 1000mA range. They are typically available in 1 – 5 watt packages, but can go up to 40W for multi-chip lamps. Commercially available 1W packages can produce in excess of 100 lumens/watt. Although our NTE 3W LEDs come mounted on an aluminum PCB, additional heatsinking may be required in some prolonged applications. A device can be destroyed if excess heat from the high power LED is not removed. High power LEDs are frequently used to replace incandescent bulbs in torches, or can be set in an array to form a powerful LED lamp.

