


# WESTCODE SEMICONDUCTORS



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**TN060R**  
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## Convertor Grade Stud-Base Thyristor Type N060R

63 amperes average: up to 1500 volts  $V_{RRM}$

**Ratings** (Maximum values at 125°C T<sub>J</sub> unless stated otherwise)

RATING	CONDITIONS	SYMBOL	
Average on-state current	Half sine wave, 85°C case temperature	$I_T(AV)$	63A
R.M.S on-state current		$I_T(RMS)$	100A
Continuous on-state current		$I_T$	100A
Peak one-cycle surge (non-repetitive) on-state current	8.3ms duration { 80% $V_{RRM}$ re-applied $V_A \leq 10$ volts	$I_{TSM}(1)$	1060A
		$I_{TSM}(2)$	1210A
Maximum permissible surge energy	With 80% $V_{RRM}$ re-applied { 8.3ms duration 3ms duration	$I_{ST}$	6416A <sup>2</sup> 4860A <sup>2</sup> *
Peak forward gate current	Anode positive with respect to cathode	$I_{FGM}$	5A
Peak forward gate voltage	Anode positive with respect to cathode	$V_{FGM}$	25V
Peak reverse gate voltage		$V_{RGM}$	5V
Average gate power		$P_G$	1W
Peak gate power	100µs pulse width	$P_{GM}$	20W
Rate of rise of off-state voltage	To 80% $V_{DRM}$ , gate open-circuit	$dv/dt$	*200V/µs
Rate of rise of on-state current (repetitive)	} $T_{VJ} = 125^\circ C, I_G = 3 \times I_{GT}, di/dt = 1A/\mu s$ } Anode voltage $> 80\% V_{DRM}$	$di/dt(1)$	200A/µs
Rate of rise on on-state current (non-repetitive)		$di/dt(2)$	400A/µs
Operating temperature range		T case	-30 + 125°C
Storage temperature range		T <sub>stg</sub>	-40 + 150°C

**Characteristics** (Maximum values at 125°C T<sub>J</sub> unless stated otherwise)

CHARACTERISTIC	CONDITIONS	SYMBOL	
Peak on-state voltage	At 195 A, $I_{TM}$	$V_{TM}$	2.1V
Forward conduction threshold voltage		$V_D$	0.89V
Forward conduction slope resistance		$r$	6.1mΩ
Repetitive peak off-state current	At $V_{DRM}$	$I_{DRM}$	10mA
Repetitive peak reverse current	At $V_{RRM}$	$I_{RRM}$	10mA
Maximum gate current required to fire all devices	At 25°C	$I_{GT}$	60mA
Maximum gate voltage required to fire all devices	At 25°C	$V_{GT}$	3V
Maximum gate voltage which will not trigger any device		$V_{GO}$	0.25V
Maximum holding current		$I_H$	100mA
Thermal resistance, junction to case for a device with a maximum forward volt drop characteristic	DC and 180° sine wave 120° rectangular wave	$R_{th(j-c)}$	0.35°C/W 0.40°C/W
Thermal resistance case to heatsink		$R_{th(c-hs)}$	0.1°C/W

VOLTAGE CODE		H02	H04	H06	H08	H10	H12	H15	
Repetitive peak voltages	$V_{RRM}$ $V_{DRM}$								
Non-repetitive peak off-state voltage	$V_{OSM}$	200	400	600	800	1000	1200	1500	
Non-repetitive peak reverse blocking voltage	$V_{RSM}$	300	600	700	900	1100	1300	1600	

**Ordering Information** (Please quote device code as explained below - 8 digits)

N 0 6 0 R	● ● ●	Voltage code (see ratings)	Typical code: N060RH12 = 1200 $V_{RRM}$ 1200 $V_{DRM}$ 200 V/µs, dv/dt to 80% $V_{DRM}$

\* Other values of dv/dt may be available.