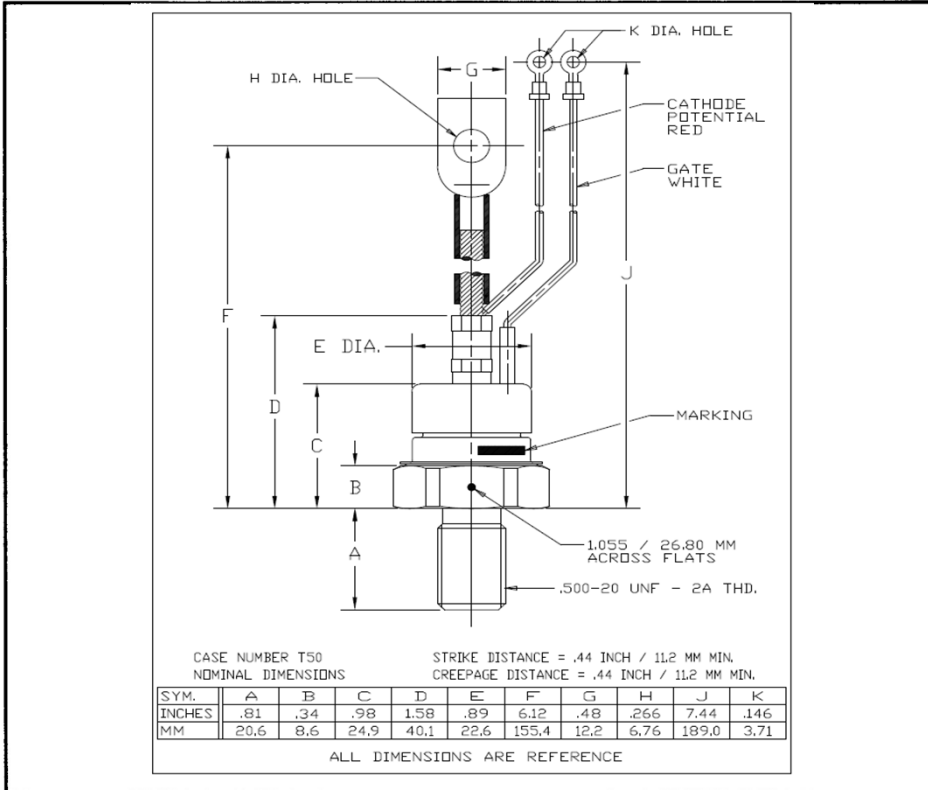


Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (412) 925-7272  
 Powerex, Europe, S.A. 428 Avenue G. Durand, BP107, 72003 Le Mans, France (43) 41.14.14

**Phase Control SCR**  
 70 Amperes Average (110 RMS)  
 600 Volts



2N1909-2N1792 (Outline Drawing)



**2N1909-2N1792**  
**Phase Control SCR**  
 70 Amperes Average (110 RMS),  
 600 Volts

### Ordering Information:

Select the complete six digit part number you desire from the table, i.e. 2N1800 is a 600 Volt, 70 Ampere Phase Control SCR.

Type	Voltage		Current
	V <sub>DRM</sub>	V <sub>RRM</sub>	
2N1909	25	70	
2N1910 2N1792	50		
2N1911 2N1793	100		
2N1912 2N1794	150		
2N1913 2N1795	200		
2N1914 2N1796	250		
2N1915 2N1797	300		
2N1916 2N1798	400		
2N1805 2N1799	500		
2N1806 2N1800	600		

### Features:

- Center Fired, di/namic Gate
- All Diffused Design
- Low Gate Current
- Compression Bonded Encapsulation
- Low V<sub>TM</sub>

### Applications:

- Phase Control
- Power Supplies
- Motor Control
- Light Dimmers



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### Absolute Maximum Ratings

Characteristics	Symbol	2N1909 - 2N1792	Units
RMS Forward Current	$I_{T(rms)}$	110	Amperes
Average Forward Current	$I_{T(av)}$	70	Amperes
One-half Cycle Surge Current	$I_{TSM}$	1000	Amperes
Minimum Rate of Rise of On-State Current (Non-Repetitive)	$di/dt$	800	A/ $\mu$ sec
$I^2t$ (for Fusing), $\geq 8.3$ milliseconds	$I^2t$	4000	A <sup>2</sup> sec
Storage Temperature	$T_{stg}$	-40 to +150	°C
Operating Temperature	$T_j$	-40 to +125	°C
Mounting Torque (Lubricated)		130	in-lb



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### Electrical and Thermal Characteristics

Characteristics	Symbol	2N1909	2N1910	2N1792	2N1911	2N1793	2N1912	2N1794	2N1913	2N1795	2N1914	2N1796	2N1915	2N1797	2N1916	2N1798	2N1805	2N1799	2N1806	2N1800	Units
<b>Current - Conducting State Maximums, <math>T_j = 125^\circ\text{C}</math></b>																					
Forward Voltage Drop at $I_{TM} = 500\text{A}$ Average, $T_j = 25^\circ\text{C}$	$V_{TM}$	2.3 (All Types)																			Volts
<b>Voltage - Blocking State Maximums</b>																					
Repetitive Peak Forward Blocking Voltage	$V_{DRM}$	25	50	100	150	200	250	300	400	500	600	600	600	600	600	600	600	600	600	600	Volts
Repetitive Peak Reverse Voltage	$V_{RRM}$	25	50	100	150	200	250	300	400	500	600	600	600	600	600	600	600	600	600	600	Volts
Non-rep. Trans. Peak Rev. Voltage	$V_{RSM}$	35	75	150	225	300	350	400	500	600	700	700	700	700	700	700	700	700	700	700	Volts
Forward Leakage Current	$I_{DRM}$	20	20	20	20	18	16	14	12	10	10	10	10	10	10	10	10	10	10	10	mA
Reverse Leakage Current	$I_{RRM}$	20	20	20	20	18	16	14	12	10	10	10	10	10	10	10	10	10	10	10	mA
<b>Switching</b>																					
Typical Turn-off Time, $I_T = 50\text{A}$ , $di_T/dt = 5\text{ A/sec}$ , reapplied $dv/dt = 20\text{V}/\mu\text{sec}$ linear to $0.8 V_{DRM}$ , $T_j = 125^\circ\text{C}$	$t_q$	100 (All Types)																			$\mu\text{sec}$
Typical Turn-on Time, $I_T = 100\text{A}$ , $V_D = 100\text{V}$	$t_{on}$	4 (All Types)																			$\mu\text{sec}$
Minimum Critical $dv/dt$ Exponential to $V_{DRM}$ , $T_j = 125^\circ\text{C}$	$dv/dt$	300 (All Types)																			$\text{V}/\mu\text{sec}$
<b>Thermal</b>																					
Maximum Resistance, Junction to Case	$R_{\theta(j-c)}$	0.40 (All Types)																			$^\circ\text{C}/\text{Watt}$
Maximum Resistance, Case to Sink (Lubricated)	$R_{\theta(c-s)}$	0.12 (All Types)																			$^\circ\text{C}/\text{Watt}$
<b>Gate - Maximim Parameters</b>																					
Gate Current to Trigger, $T_j = 25^\circ\text{C}$ , $V_D = 12\text{V}$	$I_{GT}$	70 (All Types)																			mA
Gate Voltage to Trigger, $T_j = 25^\circ\text{C}$ , $V_D = 12\text{V}$	$V_{GT}$	3 (All Types)																			Volts
Non-Triggering Gate Voltage, $T_j = 125^\circ\text{C}$ , $V_{DRM} = \text{Rated}$	$V_{GDM}$	0.25 (All Types)																			Volts
Peak Forward Gate Current	$I_{GTM}$	4 (All Types)																			Amperes
Peak Reverse Gate Voltage	$V_{GRM}$	5 (All Types)																			Volts

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