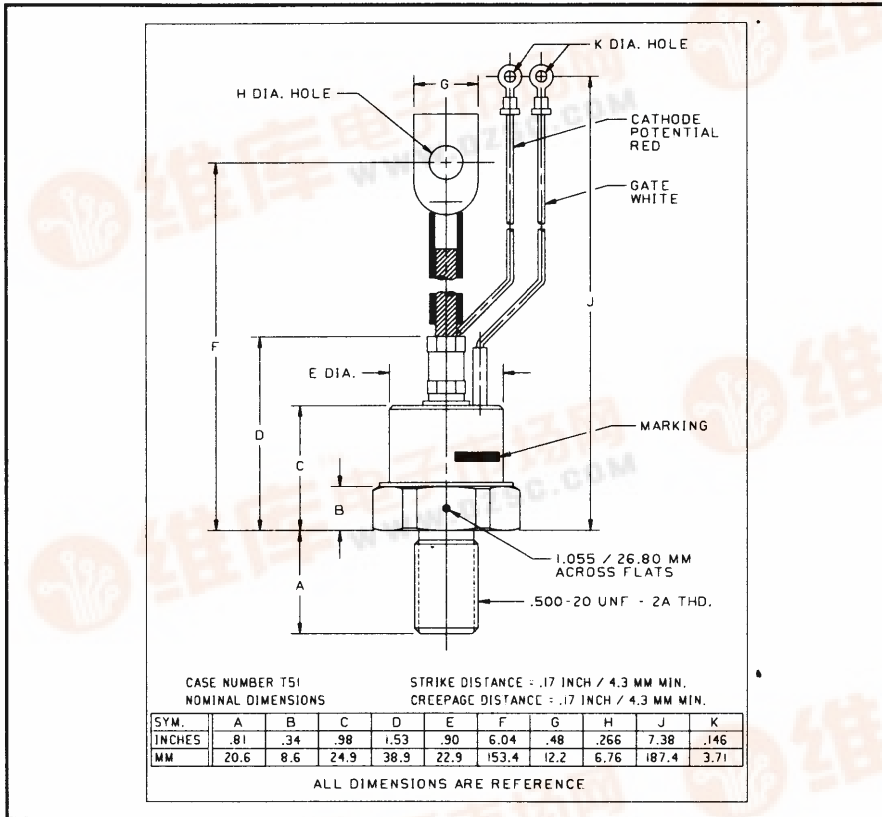


Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (412) 925-7272
 Powerex, Europe, S.A. 428 Avenue G. Durand, BP107, 72003 Le Mans, France (43) 41.14.14

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_{DRM}	V_{RRM}	$I_{T(av)}$	
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_{TM}

Applications:

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



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2N1909-2N1792

Phase Control SCR

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Absolute Maximum Ratings

Characteristics	Symbol	2N1909 - 2N1792	Units
RMS Forward Current	$I_T(\text{rms})$	110	Amperes
Average Forward Current	$I_T(\text{av})$	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/ μsec
I^2t (for Fusing), ≥ 8.3 milliseconds	I^2t	4000	A ² 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	2N1905	2N1799	2N1806	2N1800	Units
Current - Conducting State Maximums, $T_j = 125^\circ\text{C}$																					
Forward Voltage Drop at $I_{TM} = 500\text{A}$ Average, $T_j = 25^\circ\text{C}$	V_{TM}	2.3 (All Types)																			Volts
Voltage - Blocking State Maximums																					
Repetitive Peak Forward Blocking Voltage	V_{DRM}	25	50	100	150	200	250	300	400	500	600	600	500	600	700	700	600	500	600	600	Volts
Repetitive Peak Reverse Voltage	V_{RRM}	25	50	100	150	200	250	300	400	500	600	600	500	600	700	700	600	500	600	600	Volts
Non-rep. Trans. Peak Rev. Voltage	V_{RSM}	35	75	150	225	300	350	400	500	600	600	700	700	600	700	700	600	500	600	600	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
Switching																					
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)																			μsec
Typical Turn-on Time, $I_T = 100\text{A}$, $V_D = 100\text{V}$	t_{on}	4 (All Types)																			μsec
Minimum Critical dv/dt Exponential to V_{DRM} , $T_j = 125^\circ\text{C}$	dv/dt	300 (All Types)																			$\text{V}/\mu\text{sec}$
Thermal																					
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)																			$^\circ\text{C}/\text{Watt}$
Gate - Maximim Parameters																					
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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