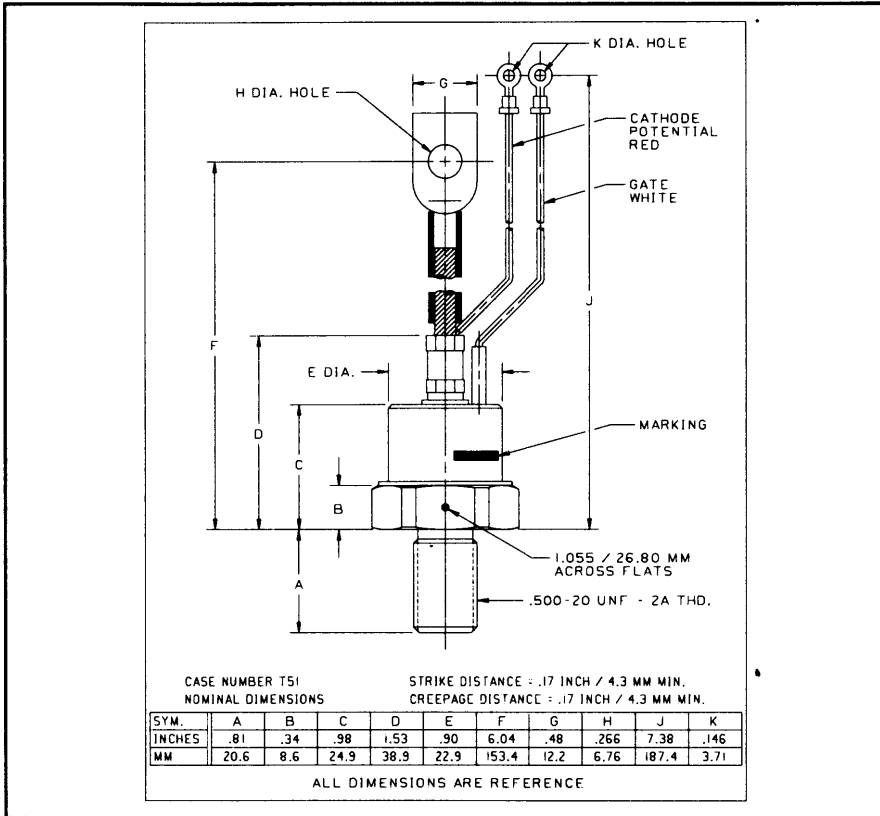
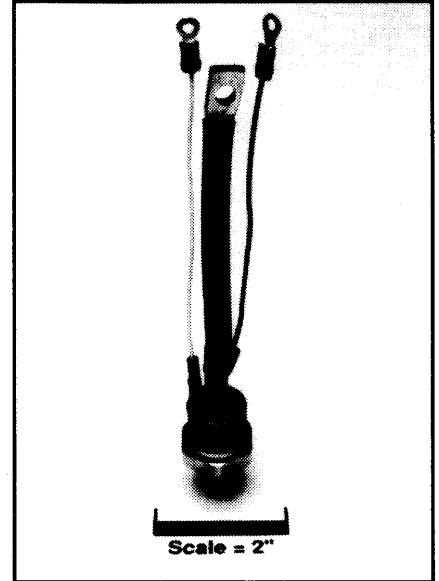


Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (412) 925-7272
 Powerex, Europe, S.A. 428 Avenue G. Durand, BP107, 72003 Le Mans, France (43) 41.14.14

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 V_{DRM} V_{RRM} | Current $I_{T(av)}$ |
|---------------|-----------------------------------|------------------------|
| 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/damic 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

70 Amperes Average (110 RMS), 600 Volts

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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2N1909-2N1792

Phase Control SCR

70 Amperes Average (110 RMS), 600 Volts

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 |
|---|-------------------|------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------------------------------|
| 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 | Volts | | | | | | | | |
| Repetitive Peak Reverse Voltage | V_{RRM} | 25 | 50 | 100 | 150 | 200 | 250 | 300 | 400 | 500 | 600 | 600 | Volts | | | | | | | | |
| Non-rep. Trans. Peak Rev. Voltage | V_{RSM} | 35 | 75 | 150 | 225 | 300 | 350 | 400 | 500 | 600 | 700 | 700 | Volts | | | | | | | | |
| Forward Leakage Current | I_{DRM} | 20 | 20 | 20 | 20 | 18 | 16 | 14 | 12 | 10 | 10 | 10 | mA | | | | | | | | |
| Reverse Leakage Current | I_{RRM} | 20 | 20 | 20 | 20 | 18 | 16 | 14 | 12 | 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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