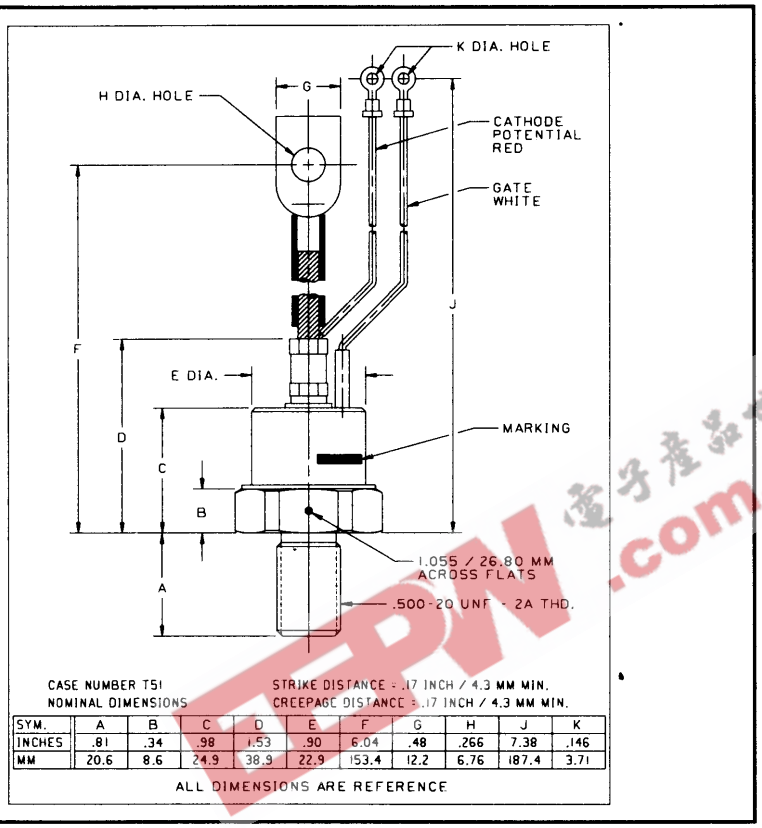
Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (412) 925-7272
Powerex, Europe, S.A. 428 Avenue G. Durand, BP107, 72003 Le Mans, France (43) 41.14.14

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



SYM.	A	B	C	D	E	F	G	H	J	K
INCHES	.81	.34	.98	1.53	.90	6.04	.48	.266	7.38	.146
MM	20.6	8.6	24.9	38.9	22.9	153.4	12.2	6.76	187.4	3.71

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/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
70 Amperes Average (110 RMS), 600 Volts

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/µsec
I^2t (for Fusing), ≥8.3 milliseconds	I^2t	4000	A^2sec
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°C												
Forward Voltage Drop at I_{TM} = 500A Average, T_j = 25°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	Volts
Repetitive Peak Reverse Voltage	V_{RRM}	25	50	100	150	200	250	300	400	500	600	Volts
Non-rep. Trans. Peak Rev. Voltage	V_{RSM}	35	75	150	225	300	350	400	500	600	700	Volts
Forward Leakage Current	I_{DRM}	20	20	20	20	18	16	14	12	10	10	mA
Reverse Leakage Current	I_{RRM}	20	20	20	20	18	16	14	12	10	10	mA
Switching												
Typical Turn-off Time, I_T = 50A, di_R/dt = 5 A/sec, reapplied dv/dt = 20V/µsec linear to 0.8 V_{DRM}, T_j = 125°C	t_q	100 (All Types)										µsec
Typical Turn-on Time, I_T = 100A, V_D = 100V	t_{on}	4 (All Types)										µsec
Minimum Critical dv/dt Exponential to V_{DRM} T_j = 125°C	dv/dt	300 (All Types)										V/µsec
Thermal												
Maximum Resistance, Junction to Case	$R_{\theta(j-c)}$	0.40 (All Types)										°C/Watt
Maximum Resistance, Case to Sink (Lubricated)	$R_{\theta(c-s)}$	0.12 (All Types)										°C/Watt
Gate - Maximim Parameters												
Gate Current to Trigger, T_j = 25°C, V_D = 12V	I_{GT}	70 (All Types)										mA
Gate Voltage to Trigger, T_j = 25°C, V_D = 12V	V_{GT}	3 (All Types)										Volts
Non-Triggering Gate Voltage, T_j = 125°C, V_{DRM} = 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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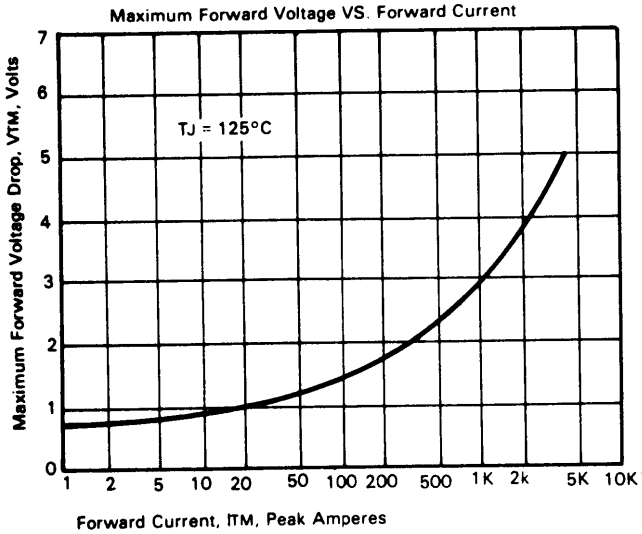
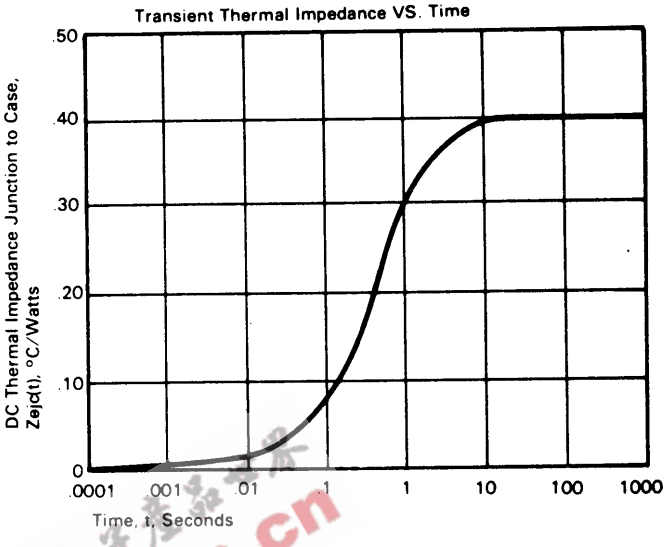
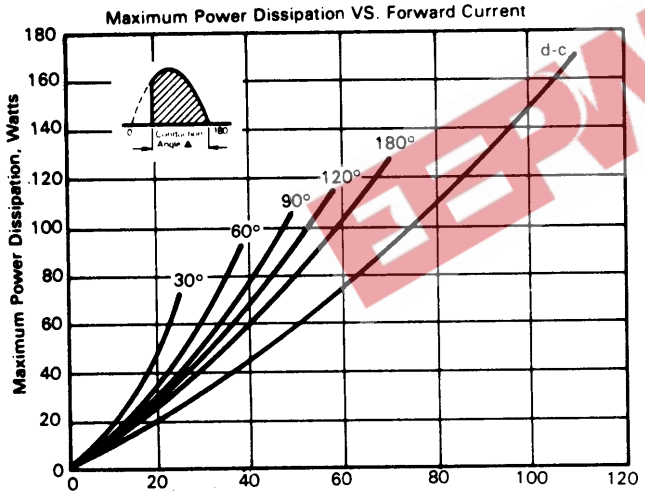
Maximum Forward Voltage VS. Forward Current



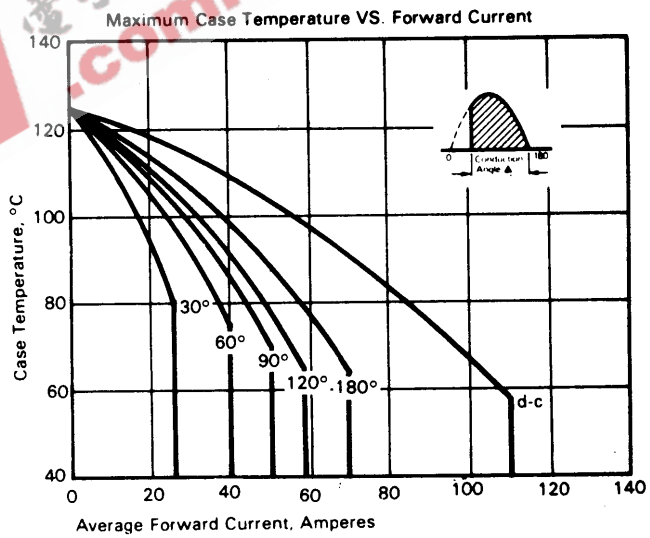
Transient Thermal Impedance VS. Time



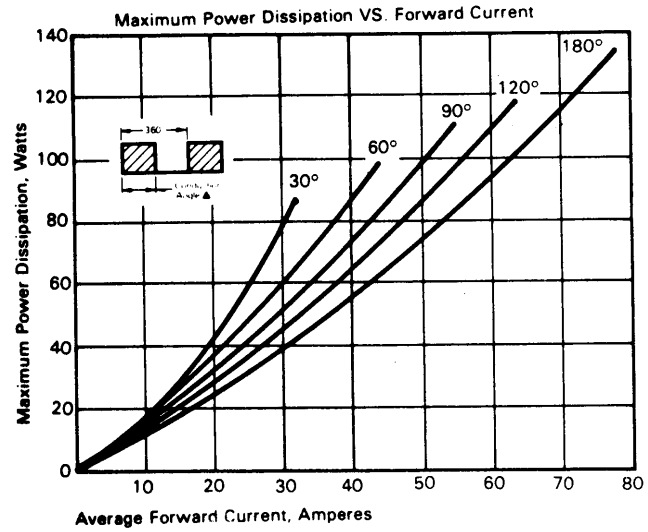
Maximum Power Dissipation VS. Forward Current



Maximum Case Temperature VS. Forward Current



Maximum Power Dissipation VS. Forward Current



Maximum Case Temperature VS. Forward Current