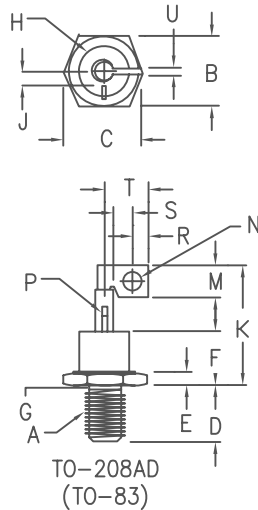


Silicon Controlled Rectifiers

2N1794–1804; 2N4371–4377



Note 1: 1/2–20 UNF–3A

Note 2: Full thread within 2 1/2 threads

Dim.	Inches		Millimeter		Notes
	Minimum	Maximum	Minimum	Maximum	
A	---	---	---	---	1
B	1.050	1.060	26.67	26.92	
C	---	1.161	---	29.49	
D	.797	.827	20.24	21.01	
E	.276	.286	.701	7.26	2
F	---	.948	---	24.08	
G	.425	.499	10.80	12.67	
H	---	.900	---	22.86	
J	.225	.275	6.48	6.99	Dia.
K	---	1.750	---	44.45	
M	.370	.380	9.40	9.65	Dia.
N	.213	.223	5.41	5.66	
P	.065	.075	1.65	1.91	Dia.
R	.215	.225	5.46	5.72	
S	.290	.315	7.37	8.00	
T	.514	.530	13.06	13.46	
U	.089	.099	2.26	2.51	

Microsemi Catalog Number	Microsemi Catalog Number	V_{DRM}/V_{RRM}
2N1794	2N4371	100
2N1795	2N4372	200
2N1796		300
2N1797	2N4373	400
2N1798		500
2N1799	2N4374	600
2N1800		720
2N1801		700
2N1802	2N4375	800
2N1803		900
2N1804	2N4376	1000
	2N4377	1200

- High dv/dt —100 V/usec.
- 1600 Amperes surge current
- Low forward on-state voltage
- Package conforming to TO–208AD outline
- Economical for general purpose phase control applications

Electrical Characteristics

Max. RMS on-state current	$I_{T(RMS)}$ 110 Amps	$T_C = 87^\circ\text{C}$
Max. average on-state cur.	$I_{T(AV)}$ 70 Amps	$T_C = 87^\circ\text{C}$
Max. peak on-state voltage	V_{TM} 1.6 Volts	$I_{TM} = 220 \text{ A(peak)}$
Max. holding current	I_H 200 mA	
Max. peak one cycle surge current	I_{TSM} 1600 A	$T_C = 87^\circ\text{C}, 60 \text{ Hz}$
Max. I^2t capability for fusing	I^2t 10,624A ² S	$t = 8.3 \text{ ms}$

Thermal and Mechanical Characteristics

Operating junction temp range	T_J	–65°C to 125°C
Storage temperature range	T_{STG}	–65°C to 150°C
Maximum thermal resistance	$R_{\theta JC}$	0.40°C/W Junction to case
Typical thermal resistance (greased)	$R_{\theta CS}$	0.20°C/W Case to sink
Mounting torque		100–130 inch pounds
Weight		3.24 ounces (91.8 grams) typical

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Switching

Critical rate of rise of on-state current (note 1)	di/dt	100A/usec.	$T_J = 125^\circ\text{C}$
Typical delay time (note 1)	t_d	3.0 usec.	
Typical circuit commuted turn-off time (note 2)	t_q	100 usec.	$T_J = 125^\circ\text{C}$

Note 1: $I_{TM} = 50\text{A}$, $V_D = V_{DRM}$, $V_{GT} = 12\text{V}$ open circuit, 20 ohm–0.1 usec. rise time

Note 2: $I_{TM} = 50\text{A}$, $di/dt = 5\text{A/usec.}$, V_R during turn-off interval = 50V min.,
reapplied $dv/dt = 20\text{V/usec.}$, linear to rated V_{DRM} , $V_{GT} = 0\text{V}$

Triggering

Max. gate voltage to trigger	V_{GT}	3.0V	$T_J = 25^\circ\text{C}$
Max. nontriggering gate voltage	V_{GD}	0.25V	$T_J = 125^\circ\text{C}$
Max. gate current to trigger	I_{GT}	100mA	$T_J = 25^\circ\text{C}$
Max. peak gate power	P_{GM}	15W	
Average gate power	$P_{G(AV)}$	3.0W	$t_p = 10 \text{ usec.}$
Max. peak gate current	I_{GM}	4.0A	
Max. peak gate voltage (forward)	V_{GM}	10V	
Max. peak gate voltage (reverse)	V_{GM}	5.0V	

Blocking

Max. leakage current	I_{DRM}, I_{RRM}	10mA	$T_J = 125^\circ\text{C} \ \& \ V_{DRM}, V_{RRM}$
Max. reverse leakage	I_{RRM}, I_{DRM}	100 μA	$T_J = 25^\circ\text{C} \ \& \ V_{RRM}, V_{RRM}$
Critical rate of rise of off-state voltage	dv/dt	100V/usec.	$T_J = 125^\circ\text{C}$

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Figure 1
Typical Forward On-State Characteristics

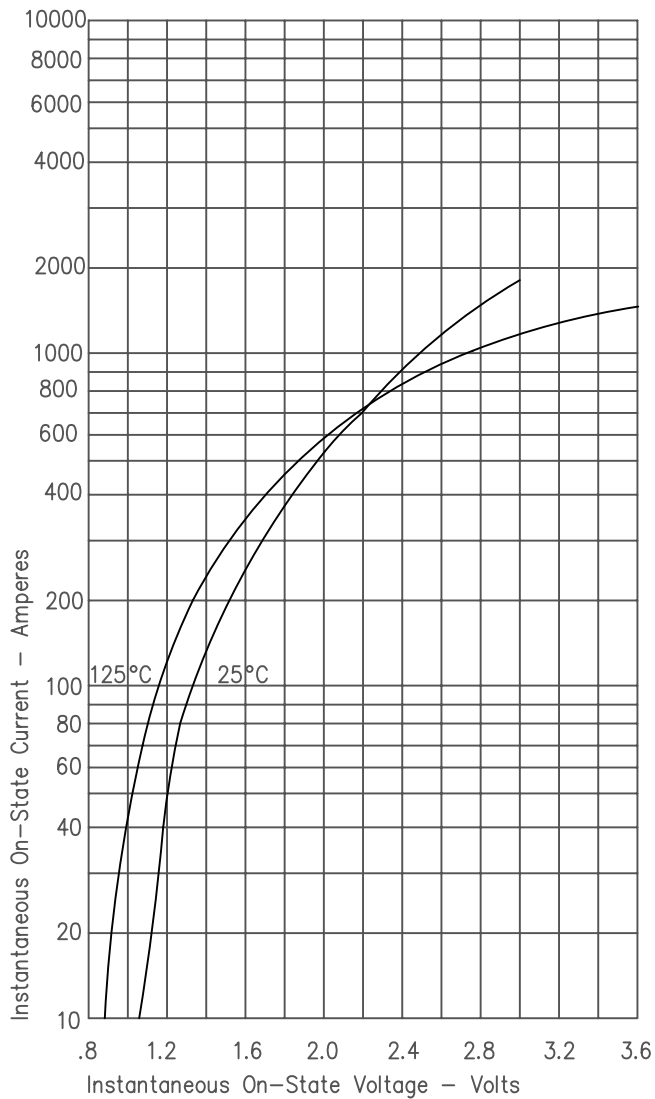


Figure 2
Forward Current Derating

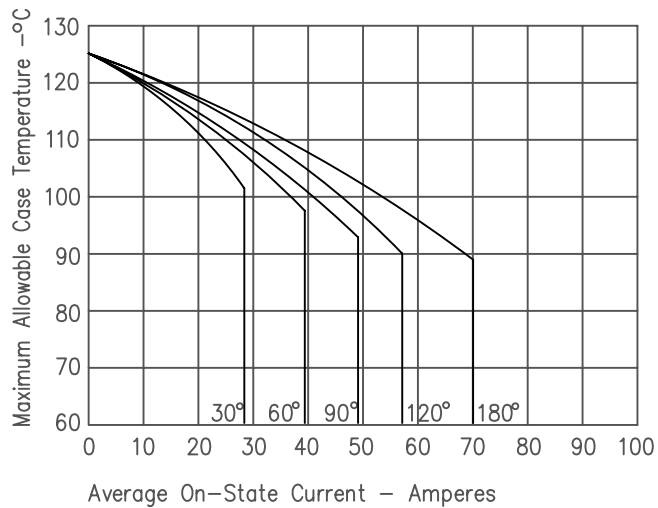


Figure 3
Maximum Power Dissipation

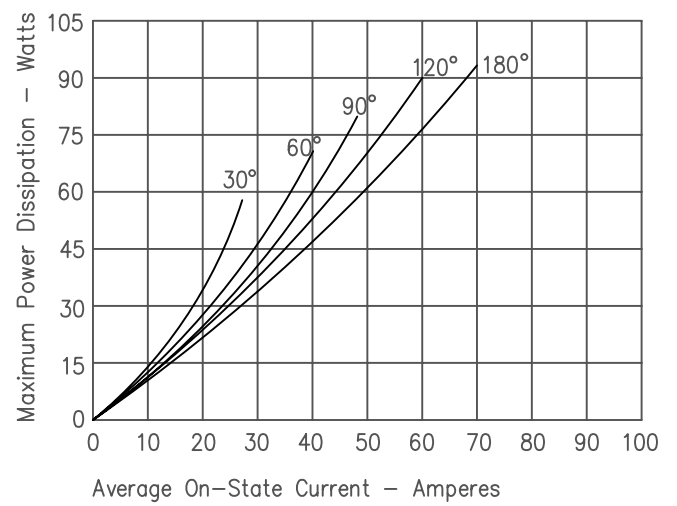


Figure 4
Transient Thermal Impedance

