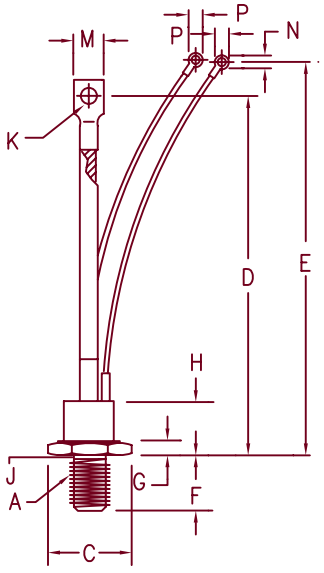
Silicon Controlled Rectifiers

2N4361 – 2N4367 & 2N1805 – 2N1807



TO–209AC
(TO–94)

Note 1: 1/2–20 UNF–3A
Note 2: Full thread within 2 1/2 threads

Dim.	Inches		Millimeter		
	Minimum	Maximum	Minimum	Maximum	Notes
A	---	---	---	---	1
B	1.050	1.060	26.67	26.92	across flats
C	---	1.161	---	29.49	
D	5.850	6.144	149.10	156.06	
E	6.850	7.375	173.99	187.33	
F	.797	.827	20.24	21.01	
G	.276	.286	.701	7.26	
H	---	.948	---	24.08	
J	.425	.499	10.80	12.67	2
K	.260	.280	6.60	7.11	Dia.
M	.500	.600	12.70	15.24	
N	.140	.150	3.56	3.81	
P	---	.295	---	7.49	

Microsemi Catalog Number		Forward & Reverse Repetitive Blocking	Reverse Transient Blocking
2N4361		100V	100V
2N4362		200V	200V
2N4363		400V	400V
	2N1805	500V	500V
2N4364	2N1806	600V	600V
	2N1807	700V	700V
2N4365		800V	800V
2N4366		1000V	1000V
2N4367		1200V	1200V

To specify dv/dt higher than 200V/usec., contact factory.

- High dv/dt–200 V/usec.
- 1600 Amperes surge current
- Low forward on–state voltage
- Package conforming to TO–209AC outline
- Economical for general purpose phase control applications

Electrical Characteristics

Max. RMS on–state current	$I_{T(RMS)}$	110 Amps	T_C = 87°C
Max. average on–state cur.	$I_{T(AV)}$	70 Amps	T_C = 87°C
Max. peak on–state voltage	V_{TM}	1.6 Volts	I_{TM} = 220 A(peak)
Max. holding current	I_H	200 mA	
Max. peak one cycle surge current	I_{TSM}	1600 A	T_C = 87°C, 60 Hz
Max. I^2t capability for fusing	I^2t	10,624A^2S	t = 8.3 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		3.6 ounces (102.0 grams) typical

LAWRENCE Microsemi

6 Lake Street
Lawrence, MA 01841
PH: (978) 620–2600
FAX: (978) 689–0803
www.microsemi.com

04–24–07 Rev. 1

2N4361 – 2N4367 & 2N1805 – 2N1807

Switching

Critical rate of rise of on-state current (note 1)	di/dt	100A/usec.	T_J = 125°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°C

Note 1: I_{TM} = 50A, V_D = V_{DRM}. V_{GT} = 12V open circuit, 20 ohm–0.1 usec. rise time
Note 2: I_{TM} = 50A, di/dt = 5A/usec., V_R during turn-off interval = 50V min., reapplied dv/dt = 20V/usec., linear to rated V_{DRM}, V_{GT} = 0V

Triggering

Max. gate voltage to trigger	V_{GT}	3.0V	T_J = 25°C
Max. nontriggering gate voltage	V_{GD}	0.25V	T_J = 125°C
Max. gate current to trigger	I_{GT}	100mA	T_J = 25°C
Max. peak gate power	P_{GM}	15W	
Average gate power	$P_{G(AV)}$	3.0W	t_p = 10 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°C & V_{DRM},V_{RRM}
Max. reverse leakage	I_{RRM}	100uA	T_J =25°C & V_{DRM},V_{RRM}
Critical rate of rise of off-state voltage	dv/dt	200V/usec.	T_J =125°C

2N4361 – 2N4367 & 2N1805 – 2N1807

Figure 1
Typical Forward On–State Characteristics

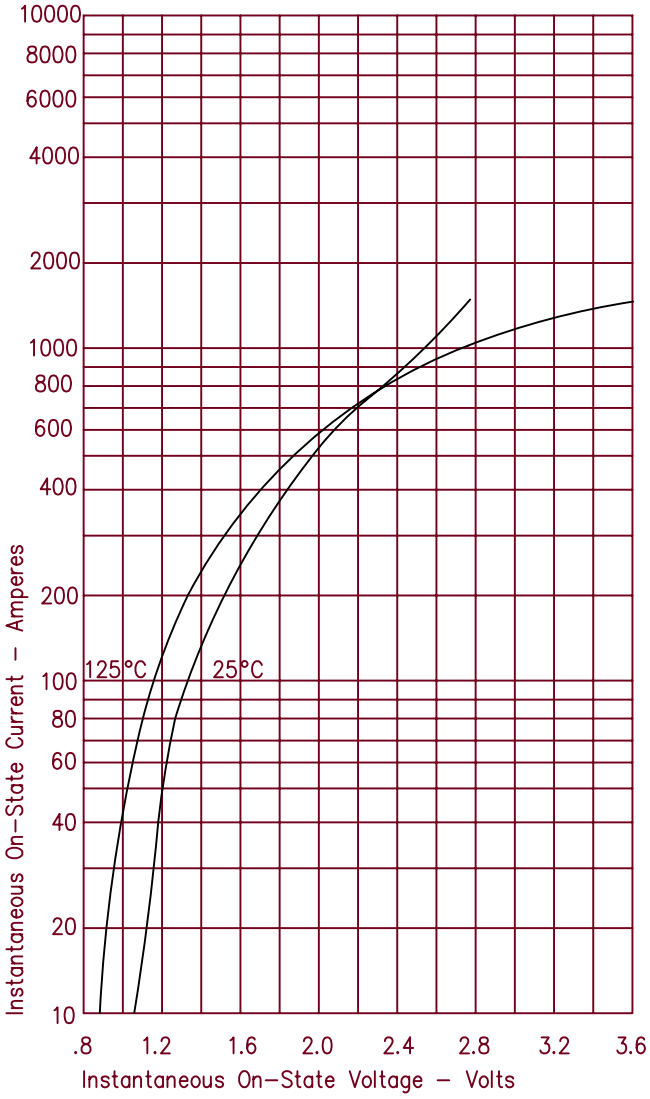


Figure 2
Forward Current Derating

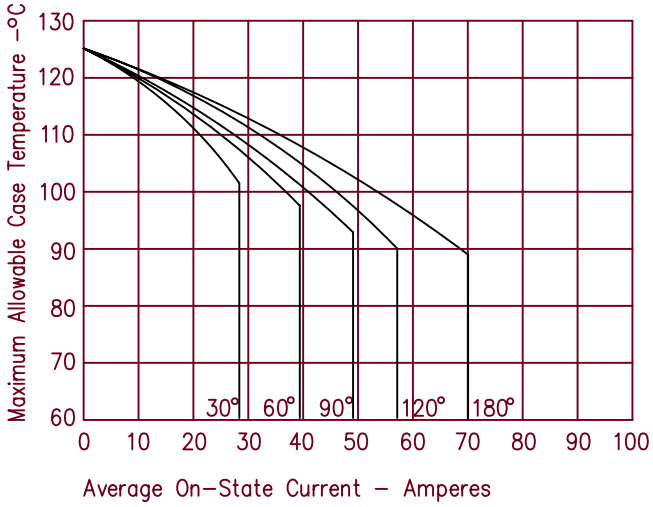


Figure 3
Maximum Power Dissipation

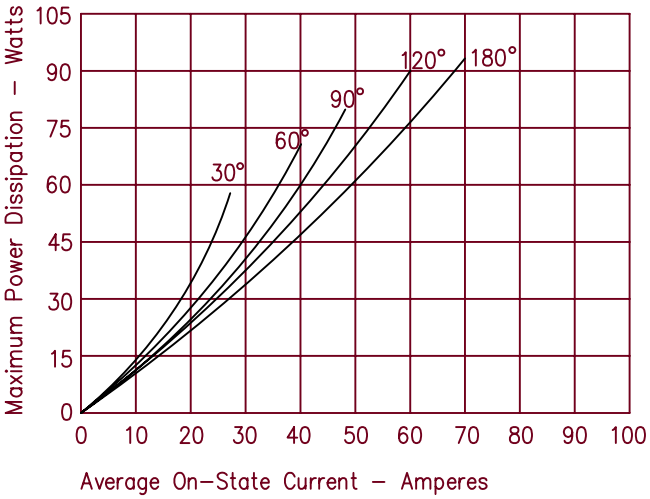


Figure 4
Transient Thermal Impedance