SCRs
1.6 Amp, Planar

ID200-ID203
ID300-ID301

FEATURES
- Voltage Rating: to 200V
- Max. Gate Trigger Current: 200μA
- Hermetically Sealed Metal Can
- Planar Passivated Construction

DESCRIPTION
This Data Sheet describes Microsemi's line of hermetically sealed industrial SCRs designed for high-voltage, medium-current control applications. The Series is packaged in a TO-39 metal case with Microsemi's unique oxide passivated junctions to ensure reliability and parameter stability.
Typical applications include relay equipment, motor controls, process controllers and pulse generators.

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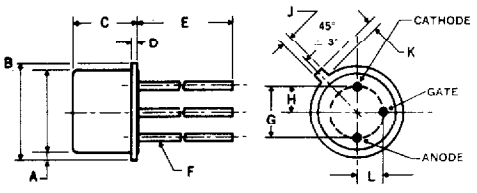
ABSOLUTE MAXIMUM RATINGS

	ID200	ID201	ID202	ID203	ID300	ID301
Repetitive Peak Off-State Voltage, V_{DRM}	50V	100V	150V	200V	300V	400V
Repetitive Peak Reverse Voltage, V_{RRM}	50V	100V	150V	200V	300V	400V
Non-Repetitive Peak Reverse Voltage, V_{RSM} (<5ms)	75V	150V	225V	300V	400V	500V

On-State Current, $I_{T(RMS)}$	
70°C Case	1.6A
75°C Ambient	450mA
Peak One Cycle Surge (Non-Repetitive) On-State Current, I_{TSM}	15A
Repetitive Peak On-State Current, I_{TRM}	up to 30A
Rate of Rise of On-State Current, di/dt	100A/μs
I^2t (for times > 1.5 ms)	0.83A^2s
Peak Gate Current, I_{GM}	250mA
Average Gate Current, $I_{G(AV)}$	25mA
Reverse Gate Voltage, V_{GR}	6V
Storage Temperature Range	−65°C to +150°C
Operating Temperature Range	−40°C to +110°C

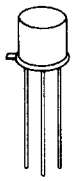
MECHANICAL SPECIFICATIONS

ID200-ID203 ID300-ID301



	ins.	mm.
A	.305-.335	7.75-8.51
B	.335-.370	8.51-9.40
C	.240-.260	6.35-6.60
D	.010-.030	.25-.76
E	.5 MIN.	12.70 MIN.
F	.017 +.002 −.001	432 +.051 −.025
G	.200	5.08
H	.100	2.54
J	.031±.003	.79±.08
K	.029-.045	.74-1.14
L	.100	2.54

TO-205AD (TO-39)



Microsemi Corp.
Watertown
The diode experts

ELECTRICAL SPECIFICATIONS (at 25°C unless noted)

Test	Symbol	Min.	Typ.	Max.	Units	Test Conditions
Off-State Current	I_{DRM}	—	—	10	μA	V_{DRM} = Rating, R_{GK} = 1K, T = 25°C
		—	5	100	μA	V_{DRM} = Rating, R_{GK} = 1K, T = 110°C
Reverse Current	I_{RRM}	—	—	10	μA	V_{RRM} = Rating, R_{GK} = 1K, T = 25°C
		—	10	100	μA	V_{RRM} = Rating, R_{GK} = 1K, T = 110°C
Gate Trigger Current	I_{GT}	—	—	200	μA	V_D = 5V, R_{GS} = 10K, T = 25°C
		—	—	500	μA	V_D = 5V, R_{GS} = 10K, T = −40°C
On-State Voltage	V_{GT}	0.4	0.52	0.8	V	V_D = 5V, R_{GS} = 100Ω, T = 25°C
		0.5	0.7	1.0	V	V_D = 5V, R_{GS} = 100Ω, T = −40°C
		0.2	—	—	V	V_D = 5V, R_{GS} = 100Ω, T = 110°C
Peak On — Voltage	V_{TM}	—	—	2.2	V	I_T = 4 Amp Pulse, T = 25°C
Holding Current	I_H	0.3	0.7	3.0	mA	R_{GK} = 1K, T = 25°C
		0.4	—	6.0	mA	R_{GK} = 1K, T = −40°C
		0.2	—	—	mA	R_{GK} = 1K, T = 110°C
Off-State Voltage — Critical Rate of Rise	dv/dt	—	20	—	V/μs	V_{DRM} = Rated, R_{GK} = 1K, T = 110°C
Turn-on Time	t_{on}	—	1.0	—	μs	I_G = 10mA, I_T = I_A, V_D = 30V, T = 25°C
Circuit Commutated Turn-off Time	t_q	—	—	40	μs	I_T = i_R = 1A, R_{GK} = 1K, T = 25°C

Note: Blocking voltage ratings apply over the full operating temperature range, provided the gate is connected to the cathode through a resistor, 1000 ohms or smaller, or other adequate bias is used.

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