DIGITRON™ Semiconductors

High-reliability discrete products
and engineering services since 1977

ID200-ID203, ID300-ID301

SILICON CONTROLLED RECTIFIERS

FEATURES

- Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.
- Available as non-RoHS (Sn/Pb plating), standard, and as RoHS by adding "-PBF" suffix.

MAXIMUM RATINGS

Ratings	Symbol	ID200	ID201	ID202	ID203	ID300	ID301	Unit
Repetitive peak off-state voltage	V_{DRM}	50	100	150	200	300	400	V
Repetitive peak reverse voltage	V_{RRM}	50	100	150	200	300	400	V
Non-repetitive peak reverse voltage (<5ms)	V_{RSM}	75	150	225	300	400	500	V
On-state current **70°C case** **75°C ambient**	$I_{T(RMS)}$	1.6 450						A mA
Peak one cycle surge (non-repetitive) on state current	I_{TSM}	15						A
Repetitive peak on state current	I_{TRM}	Up to 30						A
Rate of rise of on state current	di/dt	100						A/µs
I^2t (for times > 1.5ms)		0.83						A^2s
Peak gate current	I_{GM}	250						mA
Average gate current	$I_{G(AV)}$	25						mA
Reverse gate voltage	V_{GR}	6						V
Storage temperature range	T_{stg}	-65 to 150						°C
Operating temperature range	T_J	-40 to 110						°C

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise specified)

Test	Symbol	Min.	Typ.	Max.	Units	Test Conditions
Off-state current	I_{DRM}	-	-	10	µA	V_{DRM} = rating, R_{GK} = 1KΩ, T = 25°C
		-	5	100	µA	V_{DRM} = rating, R_{GK} = 1KΩ, T = 110°C
Reverse current	I_{RRM}	-	-	10	µA	V_{RRM} = rating, R_{GK} = 1KΩ, T = 25°C
		-	10	100	µA	V_{RRM} = rating, R_{GK} = 1KΩ, T = 110°C
Gate trigger current	I_{GT}	-	-	200	µA	V_D = 5V, R_{GS} = 10KΩ, T = 25°C
		-	-	500	µA	V_D = 5V, R_{GS} = 10KΩ, 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 = 4Amp pulse, T = 25°C
Holding current	I_H	0.3	0.7	3.0	mA	R_{GK} = 1KΩ, T = 25°C
		0.4	-	6.0	mA	R_{GK} = 1KΩ, T = -40°C
		0.2	-	-	mA	R_{GK} = 1KΩ, T = 110°C
Off-state voltage - critical rate of rise	dv/dt	-	20	-	V/µS	V_{DRM} = Rated, R_{GK} = 1KΩ, T = 110°C
Turn on time	t_{on}	-	1.0	-	µs	I_G = 10mA, I_T = 1A, V_D = 30V, T = 25°C
Circuit commutated turn off time	t_q	-	-	40	µs	I_T = I_R = 1A, R_{GK} = 1KΩ, T = 25°C

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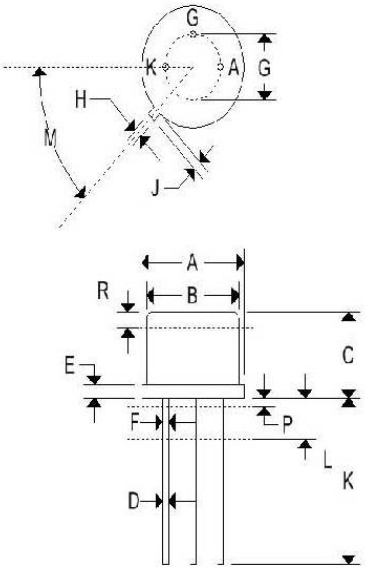
MECHANICAL CHARACTERISTICS

Case	TO-39
Marking	Alpha-numeric
Pin out	See below



	TO-39			
	Inches		Millimeters	
	Min	Max	Min	Max
A	0.335	0.370	8.510	9.390
B	0.305	0.335	7.750	8.500
C	0.240	0.260	6.100	6.600
D	0.016	0.021	0.410	0.530
E	0.009	0.041	0.230	1.040
F	0.016	0.019	0.410	0.480
G	0.200 BSC		5.080 BSC	
H	0.028	0.034	0.720	0.860
J	0.029	0.045	0.740	1.140
K	0.500	0.750	12.700	19.050
L	0.250	-	6.350	-
M	45°C BSC		45°C BSC	
P	-	0.050	-	1.270
R	0.100	-	2.540	-