DIGITRON™ Semiconductors

High-reliability discrete products
and engineering services since 1977

2N2322(A)-2N2329(A)

SILICON CONTROLLED RECTFIERS

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	2N2322 2N2322A	2N2323 2N2323A	2N2324 2N2324A	2N2325 2N2325A	2N2326 2N2326A	2N2327 2N2327A	2N2328 2N2328A	2N2329	Units
Peak repetitive forward voltage	V_{DRM}	25	50	100	150	200	250	300	400	V
Peak repetitive reverse voltage	V_{RRM}	25	50	100	150	200	250	300	400	V
Non-repetitive peak reverse voltage	V_{RSM}	40	75	150	225	300	350	400	500	V
DC on-state current **80°C ambient** **85°C case**	$I_{T(AV)}$	300 1.6								mA A
One cycle surge on-state current	I_{TSM}	15								A
Repetitive peak on-state current	I_{TM}	30								A
Gate power dissipation	P_{GM}	0.1								W
Gate power dissipation	$P_{GM(AV)}$	0.01								W
Peak gate current	I_{GM}	100								mA
Reverse gate voltage	V_{GR}	6								V
Reverse gate current	I_{GR}	3								mA
Operating temperature	T_{op}	-65 to +125								°C
Storage junction temperature	T_{stg}	-65 to +150								°C

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

Characteristics	Symbol	Min	Typ	Max	Unit	Test Condition
Off-state current	I_{DRM}	-	0.1	10	µA	V_{DRM} = rating, R_{GK} = 1K (2K for "A" types)
Reverse current	I_{RRM}	-	0.1	10	µA	V_{RRM} = rating, R_{GK} = 1K (2K for "A" types)
Gate trigger current "A" types Non "A" types	I_{GT}	- -	2 50	20 200	µA	V_D = 6V, R_L = 100Ω
Gate trigger voltage "A" types Non "A" types	V_{GT}	0.35 0.35	0.52 0.55	0.60 0.80	V	V_D = 6V, R_{GK} = 2K, R_L = 100Ω V_D = 6V, R_{GK} = 1K, R_L = 100Ω
On-state voltage	V_{TM}	-	2.0	2.2	V	I_{TM} = 4A (pulse test)
Holding current	I_H	-	0.3	2.0	mA	V_D = 6V, R_{GK} = 1K (2K for "A" types)
Reverse gate current	I_{GR}	-	1	200	µA	V_{GR} = 6V
Delay time	t_d	-	0.6	-	µs	I_G = 10mA, I_T = 1A, V_D = 30V
Rise time	t_r	-	0.4	-	µs	I_G = 10mA, I_T = 1A, V_D = 30V
Circuit commutated turn off time	t_q	-	20	-	µs	I_T = 1A, I_R = 1A, R_{GK} = 1K

ELECTRICAL CHARACTERISTICS @ 125°C

Characteristics	Symbol	Min	Typ	Max	Unit	Test Condition
Off-state current	I_{DRM}	-	1	100	µA	V_{DRM} = rating, R_{GK} = 1K (2K for "A" types)
Reverse current	I_{RRM}	-	1	100	µA	V_{RRM} = rating, R_{GK} = 1K (2K for "A" types)
Gate trigger voltage	V_{GT}	0.1	0.3	-	V	V_D = rated V_D, R_{GK} = 1K (2K for "A" types)
Holding current "A" types Non "A" types	I_H	0.1 0.15	- -	- -	mA	V_D = 6V, R_{GK} = 2K V_D = 6V, R_{GK} = 1K
Off-state voltage – critical rate of rise "A" types Non "A" types	dv/dt	0.7 1.8	- -	- -	V/µs	V_{DRM} = rating, R_{GK} = 2K V_{DRM} = rating, R_{GK} = 1K

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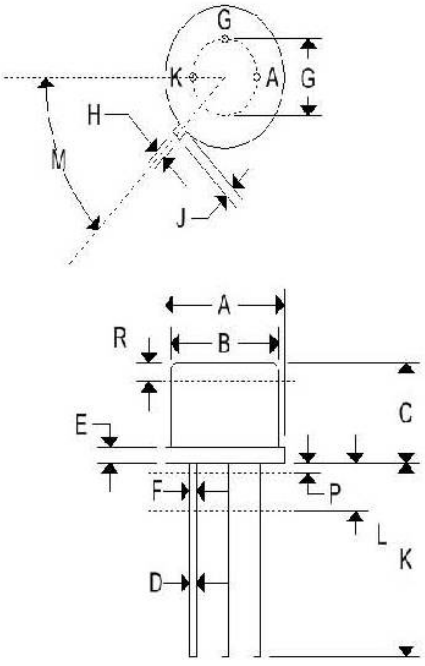
ELECTRICAL CHARACTERISTICS @ -65°C

Characteristics	Symbol	Min	Typ	Max	Unit	Test Condition
Off-state current	I_{DRM}	-	0.05	5.0	µA	V_{DRM} = rating, R_{GK} = 1K (2K for "A" types)
Reverse current	I_{RRM}	-	0.05	5.0	µA	V_{RRM} = rating, R_{GK} = 1K (2K for "A" types)
Gate trigger current						
"A" types	I_{GT}	-	50	75	µA	V_D = 6V, R_L = 100Ω
Non "A" types		-	100	350		
Gate trigger voltage						
"A" types	V_{GT}	-	0.7	0.8	V	V_D = 6V, R_{GK} = 2K, R_L = 100Ω
		-	-	0.9		V_D = 6V, R_{GK} = 2K, R_L = 100Ω
Non "A" types		-	0.75	1.0		V_D = 6V, R_{GK} = 1K, R_L = 100Ω
Holding current	I_H	-	-	3.0	mA	V_D = 6V, R_{GK} = 1K (2K for "A" types)

MECHANICAL CHARACTERISTICS

Case:	TO-39
Marking:	Body painted, 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	-

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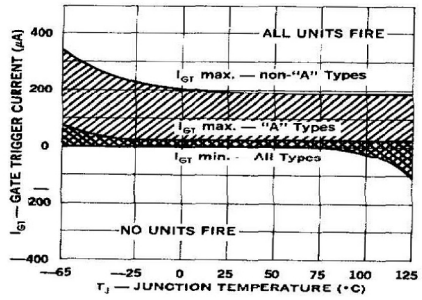
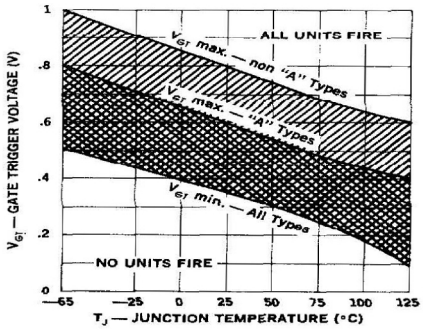
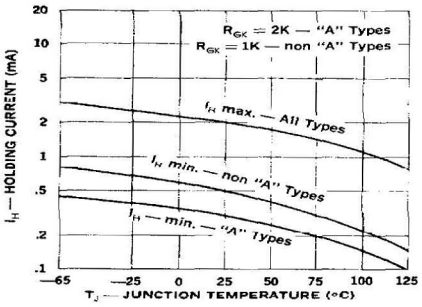
Gate Trigger Current



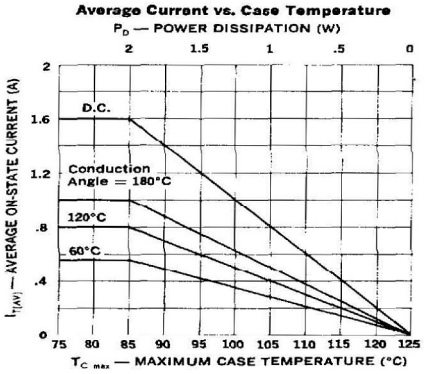
Gate Trigger Voltage



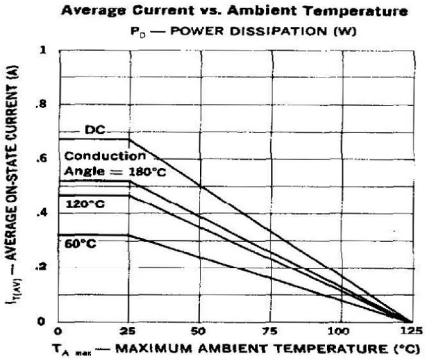
Holding Current



Average Current vs. Case Temperature



Average Current vs. Ambient Temperature



Surge Current