

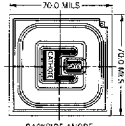
# SCRs

## 1.6 Amp, Planar

2N2323-2N2329, J, JTX, JTXV  
 2N2323A-2N2328A, J, JTX, JTXV  
 2N2323S-2N2329S, J, JTX, JTXV  
 2N2323AS-2N2328AS, J, JTX, JTXV

### FEATURES

- Available as JAN, JANTX, & JANTXV Types
- JAN Types Available in TO-5
- 1.6A D.C. Current
- Peak Currents: to 30A
- Voltage Ratings: to 400V
- 20 $\mu$ A Max. Trigger Current ("A" types)
- 0.6V Max. Trigger Voltage ("A" types)



### DESCRIPTION

These are premium thyristor switches intended for use in high performance industrial, military and space applications requiring a high degree of reliability assurance. This series is useful in a wide variety of applications including timing and programming circuits, protective and warning circuits, driving relays, driving indicator lamps, encoding and decoding circuits, replacing relays, thyatrons, and magamps, servo motor control, pulse generation, plus many others. The high surge current rating (15A - 1 cycle) makes this series particularly useful for squib firing.

The following JAN, JANTX and JANTXV types are specified under Mil-S-19500/276A and are included in Mil-STD-701 as recommended types for military usage:

2N2323 JAN2N2323S JANTX2N2323S JANTXV2N2323S	2N2324 JAN2N2324S JANTX2N2324S JANTXV2N2324S	2N2325 JAN2N2325S JANTX2N2325S JANTXV2N2325S	2N2326 JAN2N2326S JANTX2N2326S JANTXV2N2326S	2N2327 JAN2N2327A JANTX2N2327A JANTXV2N2327A	2N2328 JAN2N2328S JANTX2N2328S JANTXV2N2328S	2N2329 JAN2N2329S JANTX2N2329S JANTXV2N2329S
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### ABSOLUTE MAXIMUM RATINGS

Repetitive Peak Off-State Voltage, $V_{DRM}$	50V	100V	150V	200V	250V	300V	400V
Repetitive Peak Reverse Voltage, $V_{RRM}$	50V	100V	150V	200V	250V	300V	400V
Non-Repetitive Peak Reverse Voltage, $V_{RSM}$ (< 5ms)	75V	150V	225V	300V	350V	400V	500V
D.C. On-State Current, $I_T$							
80°C Ambient							300mA
85°C Case							1.6A
One Cycle Surge (Non-Rep.) On-State Current, $I_{TSM}$							15A
Repetitive Peak On-State Current, $I_{TM}$							30A
Gate Power Dissipation, $P_{GM}$							0.1W
Gate Power Dissipation, $P_{GM(AV)}$							0.01W
Peak Gate Current, $I_{GM}$							100mA
Reverse Gate Voltage							6V
Reverse Gate Current, $I_{GR}$							3mA
Storage Temperature Range							-65°C to +150°C
Operating Temperature Range							-65°C to +125°C

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### MECHANICAL SPECIFICATIONS

2N2323-2N2329, J, JTX, JTXV    2N2323S-2N2328S, J, JTX, JTXV  
 2N2323A-2N2328A, J, JTX, JTXV    2N2323AS-2N2328AS, J, JTX, JTXV

INCHES	MILLIMETERS
A .315-.335	8.00-8.51
B .350-.370	8.89-9.39
C .240-.260	6.35-6.60
D .010-.030	0.25-0.76
E 5 MIN	12.70 MIN
F .016-.019	406-483
G .190-.210	4.83-5.33
H .085-.105	2.16-2.67
J .028-.034	.711-.864
K .026-.045	.737-1.14
L .100	2.54

TO-205AD (TO-39)

**Microsemi Corp.**  
 Watertown  
 The diode experts

**ELECTRICAL SPECIFICATIONS**

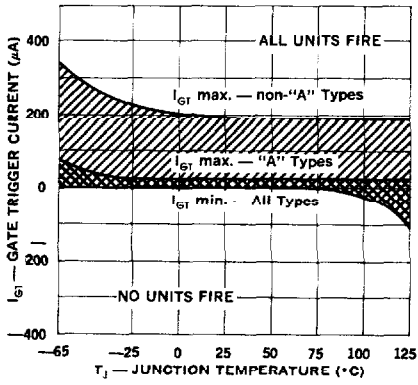
Test	Symbol	Min.	Typical	Max.	Units	Test Conditions
Visual and Mechanical						MIL-STD-750, Method 2071
25°C						
Off-State Current	$I_{DRM}$	—	0.1	10	$\mu A$	$V_{DRM} = \text{Rating}, R_{GK} = 1K (2K \text{ for "A" Types})$
Reverse Current	$I_{RRM}$	—	0.1	10	$\mu A$	$V_{RRM} = \text{Rating}, R_{GK} = 1K (2K \text{ for "A" Types})$
Gate Trigger Current	$I_{GT}$	—	2	20	$\mu A$	$V_D = 6V, R_L = 100\Omega$
"A" Types		—	50	200	$\mu A$	$V_D = 6V, R_L = 100\Omega$
Gate Trigger Voltage	$V_{GT}$	0.35	0.52	0.60	V	$V_D = 6V, R_{GK} = 2K, R_L = 100\Omega$
"A" Types		0.35	0.55	0.80	V	$V_D = 6V, R_{GK} = 1K, R_L = 100\Omega$
On-State Voltage	$V_{TM}$	—	2.0	2.2	V	$I_{TM} = 4A (pulse \text{ test})$
Holding Current	$I_H$	—	0.3	2.0	mA	$V_D = 6V, R_{GK} = 1K (2K \text{ for "A" Types})$
Reverse Gate Current	$I_{GR}$	—	1	200*	$\mu A$	$V_{GR} = 6V$
Delay Time	$t_d$	—	0.6	—	$\mu s$	$I_G = 10mA, I_T = 1A, V_D = 30V$
Rise Time	$t_r$	—	0.4	—	$\mu s$	$I_G = 10mA, I_T = 1A, V_D = 30V$
Circuit Commutated Turn-Off Time	$t_q$	—	20	—	$\mu s$	$I_T = 1A, I_R = 1A, R_{GK} = 1K$
125°C						
Off-State Current	$I_{DRM}$	—	1	100	$\mu A$	$V_{DRM} = \text{Rating}, R_{GK} = 1K (2K \text{ for "A" Types})$
Reverse Current	$I_{RRM}$	—	1	100	$\mu A$	$V_{RRM} = \text{Rating}, R_{GK} = 1K (2K \text{ for "A" Types})$
Gate Trigger Voltage	$V_{GT}$	0.1	0.3	—	V	$V_D = \text{Rated } V_D, R_{GK} = 1K (2K \text{ for "A" Types})$
Holding Current	$I_H$	0.1†	—	—	mA	$V_D = 6V, R_{GK} = 2K$
"A" Types		0.15†	—	—	mA	$V_D = 6V, R_{GK} = 1K$
Off-State Voltage — Critical Rate of Rise	dv/dt	0.7*	—	—	V/ $\mu s$	$V_D = \text{Rating}, R_{GK} = 2K$
"A" Types		1.8*	—	—	V/ $\mu s$	$V_D = \text{Rating}, R_{GK} = 1K$
non-"A" Types		—	—	—	—	—
-65°C						
Off-State Current	$I_{DRM}$	—	.05	5.0*	$\mu A$	$V_{DRM} = \text{Rating}, R_{GK} = 1K (2K \text{ for "A" Types})$
Reverse Current	$I_{RRM}$	—	.05	5.0*	$\mu A$	$V_{RRM} = \text{Rating}, R_{GK} = 1K (2K \text{ for "A" Types})$
Gate Trigger Current	$I_{GT}$	—	50	75	$\mu A$	$V_D = 6V, R_L = 100\Omega$
"A" Types		—	100	350	$\mu A$	$V_D = 6V, R_L = 100\Omega$
Gate Trigger Voltage	$V_{GT}$	—	0.7	0.8*	V	$V_D = 6V, R_{GK} = 2K, R_L = 100\Omega$
"A" Types		—	—	0.9†	V	$V_D = 6V, R_{GK} = 2K, R_L = 100\Omega$
non-"A" Types		—	0.75	1.0	V	$V_D = 6V, R_{GK} = 1K, R_L = 100\Omega$
Holding Current	$I_H$	—	—	3.0†	mA	$V_D = 6V, R_{GK} = 1K (2K \text{ for "A" Types})$

\* JAN and JANTX Types only.  
 † Industrial Types only.

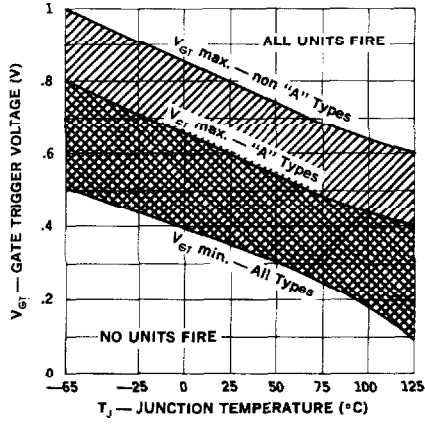
**JAN and JANTX Acceptance Tests**

100% Screening TX-Types	Group B Tests	Group C Tests
High Temperature Storage	Subgroup 1 — Reverse Gate Current	Subgroup 1 — Physical Dimensions
Temperature Cycling	Surge Current	Subgroup 2 — Shock
Constant Acceleration	Non-Repetitive Reverse Voltage	Constant Acceleration
Fine & Gross Hermetic Seal	Subgroup 2 — Low Temp. Reverse Blocking Current	Vibration, Variable Frequency
Electrical Test	Low Temp. Forward Blocking Current	Subgroup 3 — Barometric Pressure, Reduced
Burn-in	Low Temp. Gate Trigger Voltage	Subgroup 4 — Salt Atmosphere
Electrical Test	Low Temp. Gate Trigger Current	Subgroup 5 — Terminal Strength
	Subgroup 3 — Temperature Cycling	Subgroup 6 — Intermittent Operating Life Test
	Thermal Shock	
	Moisture Resistance	
	Solderability	
	Subgroup 4 — Blocking Life Test	

**Gate Trigger Current**

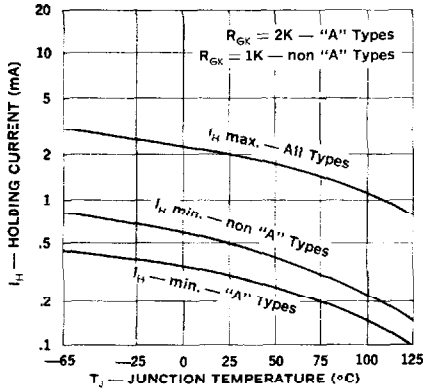


**Gate Trigger Voltage**

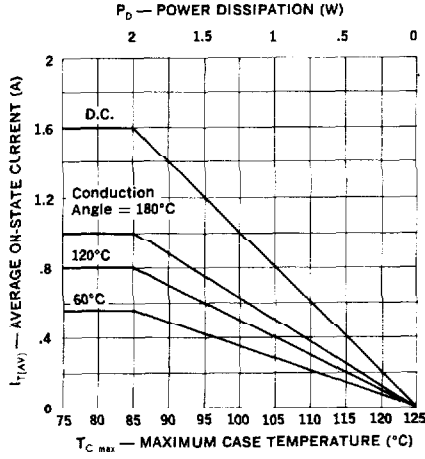


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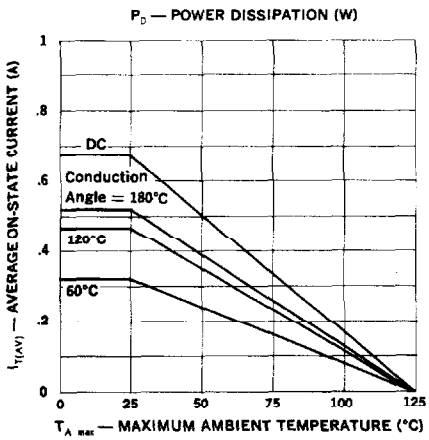
**Holding Current**



**Average Current vs. Case Temperature**



**Average Current vs. Ambient Temperature**



**Surge Current**

