

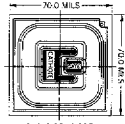
# SCRs

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
- 20μA Max. Trigger Current ("A" types)
- 0.6V Max. Trigger Voltage ("A" types)



BACKSIDE ANODE  
 METALLIZATION TOP: ANODE  
 METALLIZATION BACK: CATHODE  
 CHIP THICKNESS .007-.006

## 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**

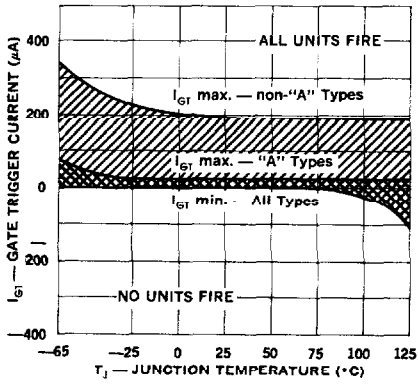
High Temperature Storage  
 Temperature Cycling  
 Constant Acceleration  
 Fine & Gross Hermetic Seal  
 Electrical Test  
 Burn-in  
 Electrical Test

Subgroup 1 — Reverse Gate Current  
     Surge Current  
     Non-Repetitive Reverse Voltage  
 Subgroup 2 — Low Temp. Reverse Blocking Current  
     Low Temp. Forward Blocking Current  
     Low Temp. Gate Trigger Voltage  
     Low Temp. Gate Trigger Current

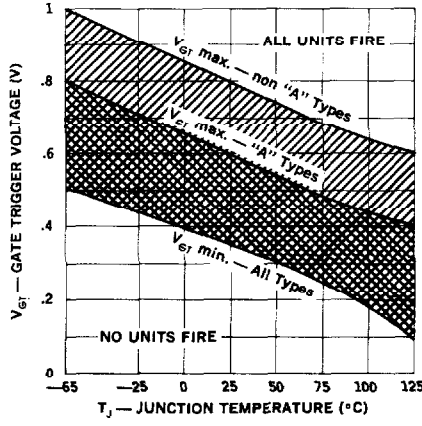
Subgroup 1 — Physical Dimensions  
 Subgroup 2 — Shock  
     Constant Acceleration  
     Vibration, Variable Frequency  
 Subgroup 3 — Barometric Pressure, Reduced  
 Subgroup 4 — Salt Atmosphere  
 Subgroup 5 — Terminal Strength  
 Subgroup 6 — Intermittent Operating Life Test

Subgroup 3 — Temperature Cycling  
     Thermal Shock  
     Moisture Resistance  
     Solderability  
 Subgroup 4 — Blocking Life Test

**Gate Trigger Current**

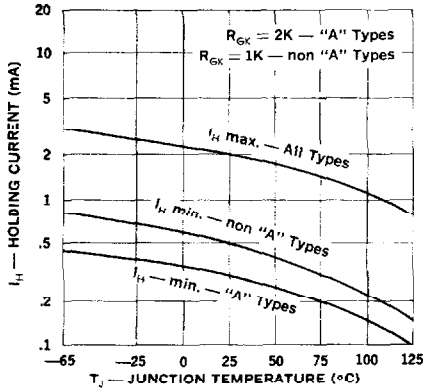


**Gate Trigger Voltage**

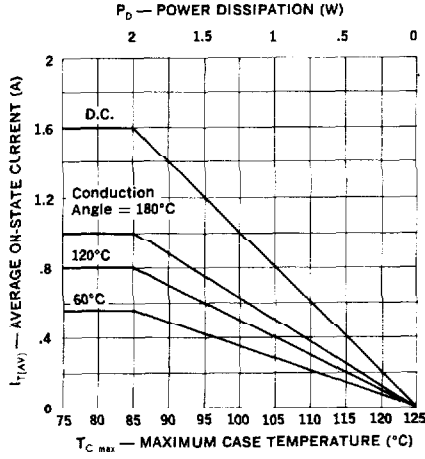


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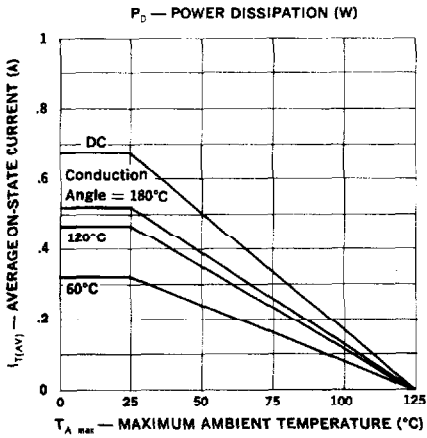
**Holding Current**



**Average Current vs. Case Temperature**



**Average Current vs. Ambient Temperature**



**Surge Current**

