

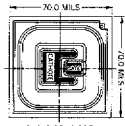
SCRs

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 μ 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 |
|---|---|---|---|---|---|---|

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

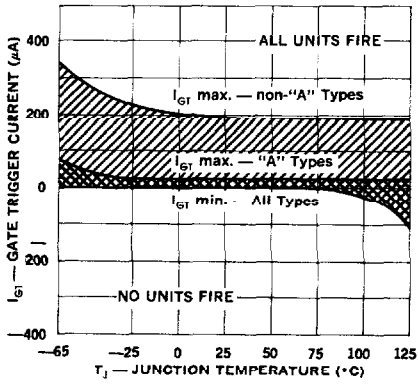
| Test | Symbol | Min. | Typical | Max. | Units | Test Conditions |
|---|-----------|-------|---------|------|------------|---|
| Visual and Mechanical | | | | | | MIL-STD-750, Method 2071 |
| 25°C | | | | | | |
| Off-State Current | I_{DRM} | — | 0.1 | 10 | μA | $V_{DRM} = \text{Rating}, R_{GK} = 1K (2K \text{ for "A" Types})$ |
| Reverse Current | I_{RRM} | — | 0.1 | 10 | μA | $V_{RRM} = \text{Rating}, R_{GK} = 1K (2K \text{ for "A" Types})$ |
| Gate Trigger Current | I_{GT} | — | 2 | 20 | μA | $V_D = 6V, R_L = 100\Omega$ |
| "A" Types | | — | 50 | 200 | μA | $V_D = 6V, R_L = 100\Omega$ |
| 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* | 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 | $I_T = 1A, I_R = 1A, R_{GK} = 1K$ |
| 125°C | | | | | | |
| Off-State Current | I_{DRM} | — | 1 | 100 | μA | $V_{DRM} = \text{Rating}, R_{GK} = 1K (2K \text{ for "A" Types})$ |
| Reverse Current | I_{RRM} | — | 1 | 100 | μA | $V_{RRM} = \text{Rating}, R_{GK} = 1K (2K \text{ for "A" Types})$ |
| 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/ μs | $V_D = \text{Rating}, R_{GK} = 2K$ |
| "A" Types | | 1.8* | — | — | V/ μs | $V_D = \text{Rating}, R_{GK} = 1K$ |
| non-"A" Types | | — | — | — | — | — |
| -65°C | | | | | | |
| Off-State Current | I_{DRM} | — | .05 | 5.0* | μA | $V_{DRM} = \text{Rating}, R_{GK} = 1K (2K \text{ for "A" Types})$ |
| Reverse Current | I_{RRM} | — | .05 | 5.0* | μA | $V_{RRM} = \text{Rating}, R_{GK} = 1K (2K \text{ for "A" Types})$ |
| Gate Trigger Current | I_{GT} | — | 50 | 75 | μA | $V_D = 6V, R_L = 100\Omega$ |
| "A" Types | | — | 100 | 350 | μA | $V_D = 6V, R_L = 100\Omega$ |
| 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.

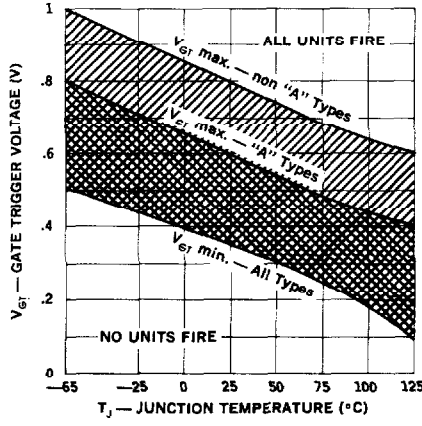
JAN and JANTX Acceptance Tests

| 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 | |

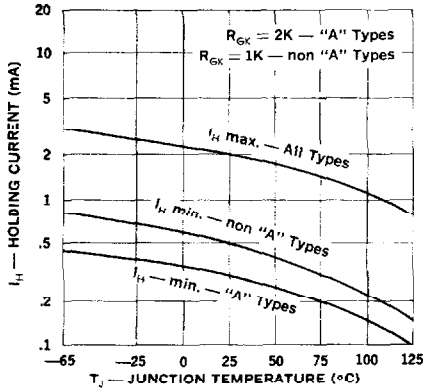
Gate Trigger Current



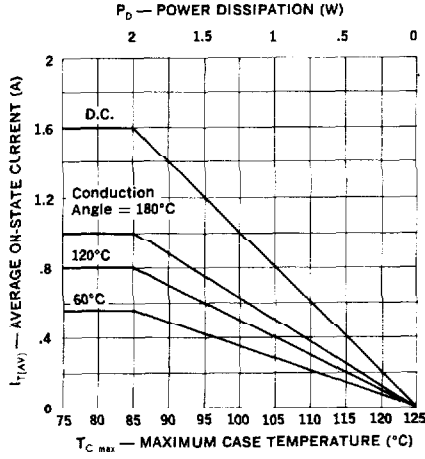
Gate Trigger Voltage



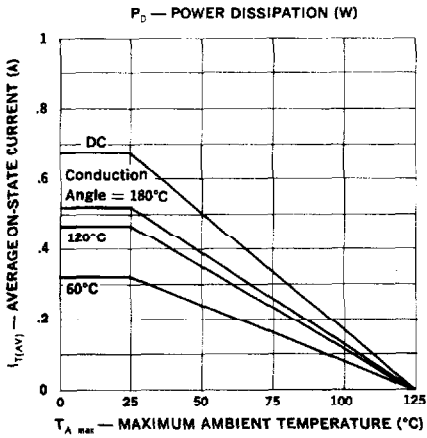
Holding Current



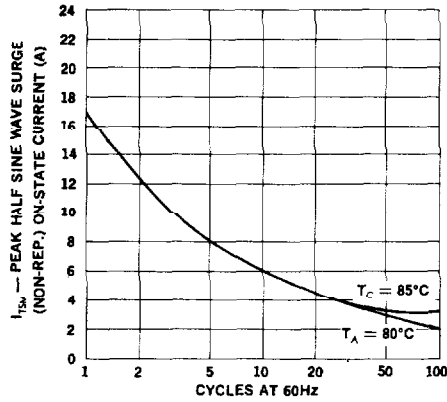
Average Current vs. Case Temperature



Average Current vs. Ambient Temperature



Surge Current



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Datasheets for electronics components.