

# TECHNICAL DATA

#### SILICON CONTROLLED RECTIFIER

Qualified per MIL-PRF-19500/276

Devices

2N2323 2N2324 2N2326 2N2328 2N2323S 2N2324S 2N2326S 2N2328S 2N2329 2N2323A 2N2324A 2N2326A 2N2328A 2N2329S 2N2323AS 2N2324AS 2N2326AS 2N2328AS

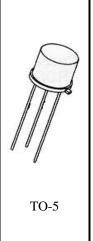
Qualified Level

JAN JANTX JANTXV

#### MAXIMUM RATINGS

Ratings	Sym	2N2323,S/ 2N2323A,S	2N2324,S/ 2N2324A,S	2N2326,S/ 2N2326A,S	2N2328,S/ 2N2328A,S	2N2329,S	Unit
Reverse Voltage	$V_{RM}$	50	100	200	300	400	Vdc
Working Peak Reverse Voltage	$V_{RM}$	75	150	300	400	500	Vpk
Forward Blocking Voltage	$V_{\text{FBXM}}$	50 <sup>(3/4)</sup>	$100^{(3/4)}$	$200^{(3/4)}$	$300^{(3/4)}$	$400^{(3)}$	Vpk
Average Forward Current (1)	$I_{O}$	0.22				Adc	
Forward Current Surge Peak <sup>(2)</sup>	$I_{FSM}$	15					Adc
Cathode-Gate Current	$V_{KGM} \\$	6				Vpk	
Operating Temperature	$T_{op}$	-65 to +125				$^{0}C$	
Storage Junction Temp	$T_{stg}$	-65 to +150				$^{0}C$	

- This average forward current is for an ambient temperature of 80°C and 180 electrical degrees of conduction.
- 2) Surge current is non-recurrent. The rate of rise of peak surge current shall not exceed 40 A during the first 5 µs after switching from the 'off' (blocking) to the 'on' (conducting) state. This is measured from the point where the thyristor voltage has decayed to 90% of its initial blocking value.
- 3) Gate connected to cathode through 1,000 ohm resistor.
- 4) Gate connected to cathode through 2,000 ohm resistor.



\*See appendix A for package outline

#### **ELECTRICAL CHARACTERISTICS**

Characteristics		Symbol	Min.	Max.	Unit
SUBGROUP 2 TESTING					
Reverse Blocking Current					
$R_2 = 1 \text{ k}\mu$	2N2323 thru 2N2329				
	2N2323S thru 2N2329S				
$R_2=2~k\mu$	2N2323A thru 2N2328A				
	2N2323AS thru 2N2328AS	т		10	u A da
$V_R = 50 \text{ Vdc}$	2N2323, S, A, AS	$I_{RBX1}$		10	μAdc
$V_R = 100 \text{ Vdc}$	2N2324, S, A, AS				
$V_R = 200 \text{ Vdc}$	2N2326, S, A, AS				
$V_R = 300 \text{ Vdc}$	2N2328, S, A, AS				
$V_R = 400 \text{ Vdc}$	2N2329, S,				

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### 2N2323, A, AS, S; 2N2324, A, AS, S; 2N2326, A, AS, S; 2N2328, A, AS, S; 2N232, S JAN SERIES

## ELECTRICAL CHARACTERISTICS (con't)

Characteristics		Symbol	Min.	Max.	Unit
Forward Blocking Current					
$R_2 = 1 k\Omega$	2N2323 thru 2N2329				
	2N2323S thru 2N2329S				
$R_2 = 2 k\Omega$	2N2323A thru 2N2328A				
	2N2323AS thru 2N2328AS	$I_{FBX1}$		10	μAdc
$V_R = 50 \text{ Vdc}$	2N2323, S, A, AS	1FBX1		10	μλας
$V_R = 100 \text{ Vdc}$	2N2324, S, A, AS				
$V_R = 200 \text{ Vdc}$	2N2326, S, A, AS				
$V_R = 300 \text{ Vdc}$	2N2328, S, A, AS				
$V_R = 400 \text{ Vdc}$	2N2329, S				
Reverse Gate Current		$I_{KG}$		200	μAdc
$V_{KG} = 6 \text{ Vdc}$		1KG		200	μΑας
Gate Trigger Voltage and Current					
$V_2 = V_{FBX} = 6 \text{ Vdc}$ ; $R_L = 100 \Omega$					
$R_e = 1 k\Omega$	2N2323 thru 2N2329 and	$V_{\mathrm{GT1}}$	0.35	0.80	Vdc
	2N2323S thru 2N2329S	$\mathbf{I}_{\mathrm{GT1}}$		200	μAdc
$R_e = 2 k\Omega$	2N2323A thru 2N2328A and	$V_{\mathrm{GT1}}$	0.35	0.60	Vdc
	2N2323AS thru 2N2328AS	$I_{\mathrm{GT1}}$		20	μAdc

#### **SUBGROUP 4 TESTING**

Exponential Rate of Voltage Rise					
$50 \Omega \le R_L \le 400 \Omega$ , C = 0.1 to 1.0 μF, repetition rate = 60 pps,					
test duration = 15 seconds					
$dv/dt = 1.8 \text{ v/}\mu\text{s}, R_3 = 1 \text{ k}\Omega$	2N2323 thru 2N2329 and				
	2N2323S thru 2N2329S				
$dv/dt = 0.7 \text{ v/}\mu\text{s}, R_3 = 2 \text{ k}\Omega$	2N2323A thru 2N2328A and	3.7			Vdc
• / •	2N2323AS thru 2N2328AS	$ m V_{FBX}$			
$V_{AA} = 50 \text{ Vdc}$	2N2323, S, A, AS		47		
$V_{AA} = 100 \text{ Vdc}$	2N2324, S, A, AS		95		
$V_{AA} = 200 \text{ Vdc}$	2N2326, S, A, AS		190		
$V_{AA} = 300 \text{ Vdc}$	2N2328, S, A, AS		285		
$V_{AA} = 400 \text{ Vdc}$	2N2329, S		380		
Forward "on" Voltage					
$i_{FM} = 4a$ (pk) (pulse), pulse width = 8.5 ms, max; duty cycle = 2% max		$V_{FM}$		2.2	V(pk)
Holding Current					
$V_{AA} = 24 \text{ Vdc max}, I_{F1} = 100 \text{ mAdc}, I_{F2} = 10 \text{ mAdc}$					
Gate trigger source voltage = 6 Vdc,					
trigger pulse width = 25 $\mu$ s min., $R_2$ = 330 $\Omega$				2.0	mAdc
$R_3 = 1 k\Omega$	2N2323 thru 2N2329 and	$I_{HOX}$		2.0	IIIAuc
	2N2323S thru 2N2329S				
$R_3 = 2 k\Omega$	2N2323A thru 2N2328A and				
	2N2323AS thru 2N2328AS				