

NPN-SWITCHING SILICON TRANSISTOR

Qualified per MIL-PRF-19500/251

DEVICES

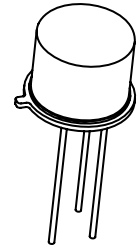
2N2218	2N2219
2N2218A	2N2219A
2N2218AL	2N2219AL

LEVELS
JAN
JANTX
JANTXV
JANS *

* Also available in Radiation Hardened versions. See datasheet for JANSR2N2218 & JANSR2N2219

ABSOLUTE MAXIMUM RATINGS ($T_C = +25^\circ\text{C}$ unless otherwise noted)

Parameters / Test Conditions	Symbol	2N2218 2N2219	2N221A; L 2N2219A; L	Unit
V_{CE}	V	30	50	V
V_{BE}	V	60	75	V
V_{EB}	V	5.0	6.0	V
I_C	I	800		mA
P_T	$I_A = +25^\circ\text{C}$	0.8		W
	$I_C = +25^\circ\text{C}$	3.0		W
T_{p, T_g}	T	-55 to +200		$^\circ\text{C}$



TO-39 (TO-205AD)
 2N2218, 2N2218A
 2N2219, 2N2219A

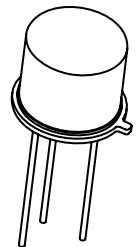
THERMAL CHARACTERISTICS

Parameters / Test Conditions	Symbol	Value	Unit
$R_{\theta JC}$	$R_{\theta JC}$	59	$^\circ\text{C/W}$

Note: (1) $I_C = 1.6 \text{ mA}$ $T_A = +25^\circ\text{C}$
 (2) $I_C = 7.0 \text{ mA}$ $T_C = +25^\circ\text{C}$

ELECTRICAL CHARACTERISTICS ($T_A = +25^\circ\text{C}$, unless otherwise noted)

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
OFF CHARACTERISTICS				
$I_E = 10 \mu\text{A}$ 2N2218; 2N2219 2N2218A; 2N2219A	$V_{(BE)}$	30	50	V
$V_B = 5.0 \text{ V}$ $V_B = 6.0 \text{ V}$ $V_B = 4.0 \text{ V}$ 2N2218; 2N2219 2N2218A; 2N2219A I_B	I_B		10	μA μA μA
$V_E = 30 \text{ V}$ $V_E = 50 \text{ V}$ 2N2218; 2N2219 2N2218A; 2N2219A	I_E		10	μA μA



TO-5
 2N2218AL
 2N2219AL

DYNAMIC CHARACTERISTICS

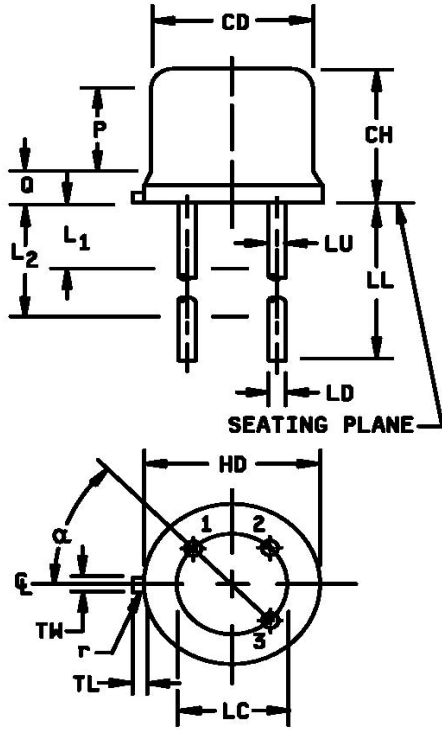
Parameters / Test Conditions	Symbol	Min.	Max.	Unit
$I_C = 20\text{mA}$ $V_E = 20\text{V}$ $V_{CE} = 100\text{V}$	h_{FE}	12		
$I_C = 1.0\text{mA}$ $V_E = 10\text{V}$ $V_{CE} = 1.0\text{kV}$ 2N218 2N219 2N218A 2N219A	h_{FE}	25 50 35 75		
$V_B = 10\text{V}$ $V_E = 0, 100\text{kV}$ $\leq f \leq 1.0\text{MHz}$	C_b		8.0	pF
$V_B = 0.5\text{V}$ $V_C = 0, 100\text{kV}$ $\leq f \leq 1.0\text{MHz}$	C_b		25	pF

SWITCHING CHARACTERISTICS

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
$V_C = 30\text{V}$ $C = 150\text{pF}$ $I_B = 15\text{mA}$				
$V_{CE} = 100\text{V}$ (S) (M) 900/251 2N218, 2N219 2N218A, 2N219A	t_0		40 35	ns
$V_{CE} = 100\text{V}$ (S) (M) 900/251 2N218, 2N219 2N218A, 2N219A	t_6		250 300	ns

(3) μs $\leq 2.0\%$.

PACKAGE DIMENSIONS



Symbol	Dimension				
	M	M	M	M	M
D	305	335	7.75	8.51	
H	240	260	6.10	6.60	
E	335	370	8.51	9.40	
C	.200 P		5.08 P		7
D	.016	.019	0.41	0.48	8, 9
L	.614				
U	.016	.019	0.41	0.48	8, 9
L ₁		.050		1.27	8, 9
L ₂	.250		6.35		8, 9
P	.100		2.54		7
Q		.030		0.76	5
ℓ	.029	.045	0.74	1.14	3, 4
W	.028	.034	0.71	0.86	3
r		.010		0.25	10
α	45° P		45° P		7

1. ~~0.10~~
2. ~~0.10~~
3. ~~0.10~~ 0.11 (0.28) m
4. ~~0.10~~
5. ~~0.10~~ 0.10
6. ~~0.10~~ 0.10 (0.25) m 0.10
7. ~~0.054 +0.001 -0.000~~ (1.37 +0.03 -0.00) m ~~0.007~~ (0.18) m
8. ~~0.10~~ 0.10 ~~0.10~~ ~~0.10~~
0.10
9. ~~0.10~~
10. ~~0.10~~ ~~0.10~~
11. ~~0.10~~ ~~0.10~~
12. ~~0.10~~ 5M ~~0.10~~ ~~0.10~~
13. ~~0.10~~ ~~0.10~~ ~~0.10~~ ~~0.10~~
14. ~~0.10~~ (5), ~~0.10~~ 1.5 (38.10) m ~~0.10~~ 1.75 (44.45) m ~~0.10~~
~~0.10~~ (9), ~~0.10~~ 5 (12.70) m ~~0.10~~ 7.50 (190.5) m

FIGURE 1. ~~0.10~~ (5)