

NPN-SWITCHIN SILICON TRANSISTOR

Qualified per MIL-PRF-19500/251

DEVICES

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

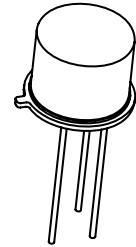
LEVELS

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
Collector-Emitter Voltage	V_{CEO}	30	50	Vdc
Collector-Base Voltage	V_{CBO}	60	75	Vdc
Emitter-Base Voltage	V_{EBO}	5.0	6.0	Vdc
Collector Current	I_C	800		mA
Total Power Dissipation	P_T	@ $T_A = +25^\circ\text{C}$	0.8	W
		@ $T_C = +25^\circ\text{C}$	3.0	W
Operating & Storage Junction Temp. Range	T_{op}, T_{stg}	-55 to +200		$^\circ\text{C}$



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

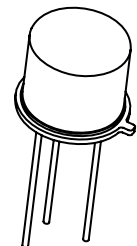
THERMAL CHARACTERISTICS

Parameters / Test Conditions	Symbol	Value	Unit
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	59	$^\circ\text{C/W}$

Note: (1) Derate linearly 4.6mW/ $^\circ\text{C}$ above $T_A > +25^\circ\text{C}$
 (2) Derate linearly 17.0mW/ $^\circ\text{C}$ above $T_C > +25^\circ\text{C}$

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

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
OFF CHARACTERISTICS				
Collector-Emitter Breakdown Voltage $I_E = 10\text{mA dc}$	$V_{(BR)CEO}$	30 50		Vdc
2N2218; 2N2219 2N2218A; 2N2219A; L				
Emitter-Base Cutoff Current $V_{EB} = 5.0\text{Vdc}$ $V_{EB} = 6.0\text{Vdc}$ $V_{EB} = 4.0\text{Vdc}$	I_{EBO}		10 10 10	$\mu\text{A dc}$ $\eta\text{A dc}$
2N2218; 2N2219				
2N2218A; 2N2219A; L All Types				
Collector-Base Cutoff Current $V_{CE} = 30\text{Vdc}$ $V_{CE} = 50\text{Vdc}$	I_{CES}		10 10	$\eta\text{A dc}$
2N2218; 2N2219 2N2218A; 2N2219A; L				



TO-5
 2N2218AL
 2N2219AL

NPN-SWITCHING SILICON TRANSISTOR

Qualified per MIL-PRF-19500/251

ELECTRICAL CHARACTERISTICS ($T_A = +25^\circ\text{C}$, unless otherwise noted) (Con't)

Parameters / Test Conditions	Symbol	Min.	Max.	Unit	
Collector-Base Cutoff Current					
$V_{CB} = 50\text{Vdc}$ 2N2218; 2N2219	I_{CBO}		10	η_{Adc} μ_{Adc}	
$V_{CB} = 60\text{Vdc}$ 2N2218A; 2N2219A; L			10		
$V_{CB} = 60\text{Vdc}$ 2N2218; 2N2219			10		
$V_{CB} = 75\text{Vdc}$ 2N2218A; 2N2219A; L			10		
ON CHARACTERISTICS (3)					
Forward-Current Transfer Ratio					
$I_C = 0.1\text{mA}_{dc}$, $V_{CE} = 10\text{Vdc}$	h_{FE}	2N2218	20		
		2N2219	35		
		2N2218A; 2N2218AL	30		
		2N2219A; 2N2219AL	50		
$I_C = 1.0\text{mA}_{dc}$, $V_{CE} = 10\text{Vdc}$		2N2218	25		150
		2N2219	50		325
	2N2218A; 2N2218AL	35	150		
	2N2219A; 2N2219AL	75	325		
$I_C = 10\text{mA}_{dc}$, $V_{CE} = 10\text{Vdc}$	2N2218	35			
	2N2219	75			
	2N2218A; 2N2218AL	40			
	2N2219A; 2N2219AL	100			
$I_C = 150\text{mA}_{dc}$, $V_{CE} = 10\text{Vdc}$	2N2218; A; AL	40	120		
	2N2219; A; AL	100	300		
$I_C = 500\text{mA}_{dc}$, $V_{CE} = 10\text{Vdc}$	2N2218; A; AL	20			
	2N2219; A; AL	30			
Collector-Emitter Saturation Voltage					
$I_C = 150\text{mA}_{dc}$, $I_B = 15\text{mA}_{dc}$	$V_{CE(sat)}$	2N2218; 2N2219	0.4	Vdc	
		2N2218A; 2N2219A; L	0.3		
$I_C = 500\text{mA}_{dc}$, $I_B = 50\text{mA}_{dc}$	2N2218; 2N2219	1.6			
	2N2218A; 2N2219A; L	1.0			
Base-Emitter Saturation Voltage					
$I_C = 150\text{mA}_{dc}$, $I_B = 15\text{mA}_{dc}$	$V_{BE(sat)}$	2N2218; 2N2219	0.6	Vdc	
		2N2218A; 2N2219A; L	0.6		1.3 1.2
$I_C = 500\text{mA}_{dc}$, $I_B = 50\text{mA}_{dc}$	2N2218; 2N2219		2.6		
	2N2218A; 2N2219A; L		2.0		