

# Central<sup>TM</sup> Semiconductor Corp.

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Manufacturers of World Class Discrete Semiconductors

2N2218  
2N2218A  
2N2219  
2N2219A

NPN Silicon Transistor  
JEDEC TO-39 Case

## DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N2218,A,2N2219,A are Silicon NPN Planar Epitaxial Transistors designed for small signal general purpose and switching applications.

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

		2N2218 2N2219	2N2218A 2N2219A	
Collector-Base Voltage	$V_{CB0}$	60	75	Vdc
Emitter-Base Voltage	$V_{EB0}$	5.0	6.0	Vdc
Collector-Emitter Voltage	$V_{CE0}$	30	40	Vdc
Collector Current-Continuous	$I_C$		800	mA
Power Dissipation	$P_T$		0.8	watts
Power Dissipation, $T_C=25^\circ\text{C}$	$P_T$		3.0	watts
Operating and Storage Junction Temperature	$T_J, T_{stg}$	-65 to +200°C		

ELECTRICAL CHARACTERISTICS ( $T_A=25^\circ\text{C}$ )

Symbol	Test Conditions	2N2218		2N2218A		Unit	
		2N2219	Min	Max	2N2219A		Min
$I_{CBO}$	$V_{CB}=50\text{V}$		10			nA	
$I_{CBO}$	$V_{CB}=60\text{V}$				10	nA	
$I_{CEV}$	$V_{CE}=60\text{V}, V_{EB}=3.0\text{V}$				10	nA	
$I_{EBO}$	$V_{EB}=3.0\text{V}$		10		10	nA	
$BVC_{BO}$	$I_C=10\mu\text{A}$	60			75	V	
$BVE_{BO}$	$I_E=10\mu\text{A}$	5.0			6.0	V	
$BV_{CE0}$	$I_C=10\text{mA}$	30			40	V	
$V_{CE}(s)$	$I_C=150\text{mA}, I_B=15\text{mA}$		0.4		0.3	V	
$V_{CE}(s)$	$I_C=500\text{mA}, I_B=50\text{mA}$		1.6		1.0	V	
$V_{BE}(s)$	$I_C=150\text{mA}, I_B=15\text{mA}$		1.3		1.2	V	
$V_{BE}(s)$	$I_C=500\text{mA}, I_B=50\text{mA}$		2.6		2.0	V	
			2N2218		2N2219		
			2N2218A		2N2219A		
			Min	Max	Min	Max	Unit
$h_{FE}$	$V_{CE}=10\text{V}, I_C=100\mu\text{A}$	20			35		-
$h_{FE}$	$V_{CE}=10\text{V}, I_C=1\text{mA}$	25			50		-
$h_{FE}$	$V_{CE}=10\text{V}, I_C=10\text{mA}$	35			75		-
$h_{FE}$	$V_{CE}=10\text{V}, I_C=150\text{mA}$	40	120		100	300	-
$h_{FE}$	$V_{CE}=1\text{V}, I_C=150\text{mA}$	20			50		-
$h_{FE}$	$V_{CE}=10\text{V}, I_C=500\text{mA}$ (2N2218, 2N2219 Only)	20			30		-
$h_{FE}$	$V_{CE}=10\text{V}, I_C=500\text{mA}$ (2N2218A, 2N2219A Only)	25			40		-
$f_T$	$V_{CE}=20\text{V}, I_C=20\text{mA}, f=100\text{MHz}$ (Except 2N2219A)	250			250		MHz
$f_T$	$V_{CE}=20\text{V}, I_C=20\text{mA}, f=100\text{MHz}$ (2N2219A Only)				300		MHz
$C_{ob}$	$V_{CB}=10\text{V}, f=100\text{kHz}$		8.0		8.0		pF
$t_{ON}$	$V_{CC}=30\text{V}, I_C=150\text{mA}, I_B=15\text{mA}$		35		35		ns
$t_{OFF}$	$V_{CC}=30\text{V}, I_C=150\text{mA}, I_{B1}=I_{B2}=15\text{mA}$		285		285		ns