

## Description

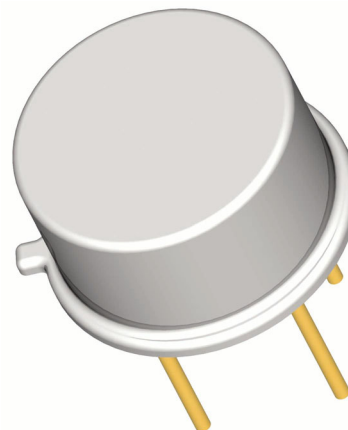
Semicoa Semiconductors offers:

- Screening and processing per MIL-PRF-19500 Appendix E
- JAN level (2N2219AJ)
- JANTX level (2N2219AJX)
- JANTXV level (2N2219AJV)
- JANS level (2N2219AJS)
- QCI to the applicable level
- 100% die visual inspection per MIL-STD-750 method 2072 for JANTXV and JANS
- Radiation testing (total dose) upon request

Please contact Semicoa for special configurations  
[www.SEMICOA.com](http://www.SEMICOA.com) or (714) 979-1900

## Applications

- General purpose
- Low power
- NPN silicon transistor



## Features

- Hermetically sealed TO-39 metal can
- Also available in chip configuration
- Chip geometry 0400
- Reference document:  
MIL-PRF-19500/251

## Benefits

- Qualification Levels: JAN, JANTX, JANTXV and JANS
- Radiation testing available

Absolute Maximum Ratings		$T_C = 25^{\circ}\text{C}$ unless otherwise specified	
Parameter	Symbol	Rating	Unit
Collector-Emitter Voltage	$V_{CEO}$	50	Volts
Collector-Base Voltage	$V_{CBO}$	75	Volts
Emitter-Base Voltage	$V_{EBO}$	6	Volts
Collector Current, Continuous	$I_C$	800	mA
Power Dissipation, $T_A = 25^{\circ}\text{C}$ Derate linearly above $25^{\circ}\text{C}$	$P_T$	0.8 4.6	W mW/ $^{\circ}\text{C}$
Power Dissipation, $T_C = 25^{\circ}\text{C}$ Derate linearly above $25^{\circ}\text{C}$	$P_T$	3.0 17.0	W mW/ $^{\circ}\text{C}$
Operating Junction Temperature	$T_J$	-55 to +200	$^{\circ}\text{C}$
Storage Temperature	$T_{STG}$	-55 to +200	$^{\circ}\text{C}$

## ELECTRICAL CHARACTERISTICS

characteristics specified at  $T_A = 25^\circ\text{C}$

Off Characteristics						
Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Collector-Emitter Breakdown Voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> = 10 mA	50			Volts
Collector-Base Cutoff Current	I <sub>CBO1</sub>	V <sub>CB</sub> = 75 Volts			10	μA
Collector-Base Cutoff Current	I <sub>CBO2</sub>	V <sub>CB</sub> = 60 Volts			10	nA
Collector-Base Cutoff Current	I <sub>CBO3</sub>	V <sub>CB</sub> = 60 Volts, T <sub>A</sub> = 150 <sup>o</sup> C			10	μA
Collector-Emitter Cutoff Current	I <sub>CES</sub>	V <sub>CE</sub> = 50 Volts			10	nA
Emitter-Base Cutoff Current	I <sub>EBO1</sub>	V <sub>EB</sub> = 6 Volts			10	μA
Emitter-Base Cutoff Current	I <sub>EBO2</sub>	V <sub>EB</sub> = 4 Volts			10	nA
On Characteristics			Pulse Test: Pulse Width = 300 μs, Duty Cycle ≤ 2.0%			
Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
DC Current Gain	h <sub>FE1</sub>	I <sub>C</sub> = 0.1 mA, V <sub>CE</sub> = 10 Volts	30		325	
	h <sub>FE2</sub>	I <sub>C</sub> = 1.0 mA, V <sub>CE</sub> = 10 Volts	75			
	h <sub>FE3</sub>	I <sub>C</sub> = 10 mA, V <sub>CE</sub> = 10 Volts	100			
	h <sub>FE4</sub>	I <sub>C</sub> = 150 mA, V <sub>CE</sub> = 10 Volts	100		300	
	h <sub>FE5</sub>	I <sub>C</sub> = 500 mA, V <sub>CE</sub> = 10 Volts	30			
	h <sub>FE6</sub>	I <sub>C</sub> = 10 mA, V <sub>CE</sub> = 10 Volts T <sub>A</sub> = -55 <sup>o</sup> C	35			
Base-Emitter Saturation Voltage	V <sub>BEsat1</sub>	I <sub>C</sub> = 150 mA, I <sub>B</sub> = 15 mA	0.6		1.2	Volts
	V <sub>BEsat2</sub>	I <sub>C</sub> = 500 mA, I <sub>B</sub> = 50 mA			2.0	
Collector-Emitter Saturation Voltage	V <sub>CEsat1</sub>	I <sub>C</sub> = 150 mA, I <sub>B</sub> = 15 mA			0.3	Volts
	V <sub>CEsat2</sub>	I <sub>C</sub> = 500 mA, I <sub>B</sub> = 50 mA			1.0	
Dynamic Characteristics						
Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Magnitude – Common Emitter, Short Circuit Forward Current Transfer Ratio	h <sub>FE</sub>	V <sub>CE</sub> = 20 Volts, I <sub>C</sub> = 20 mA, f = 100 MHz	2.5		12	
Small Signal Short Circuit Forward Current Transfer Ratio	h <sub>FE</sub>	V <sub>CE</sub> = 10 Volts, I <sub>C</sub> = 1 mA, f = 1 kHz	75			
Open Circuit Output Capacitance	C <sub>OBO</sub>	V <sub>CB</sub> = 10 Volts, I <sub>E</sub> = 0 mA, 100 kHz < f < 1 MHz			8	pF
Open Circuit Input Capacitance	C <sub>IBO</sub>	V <sub>EB</sub> = 0.5 Volts, I <sub>C</sub> = 0 mA, 100 kHz < f < 1 MHz			25	pF
Switching Characteristics						
Saturated Turn-On Time	t <sub>ON</sub>				35	ns
Saturated Turn-Off Time	t <sub>OFF</sub>				300	ns