

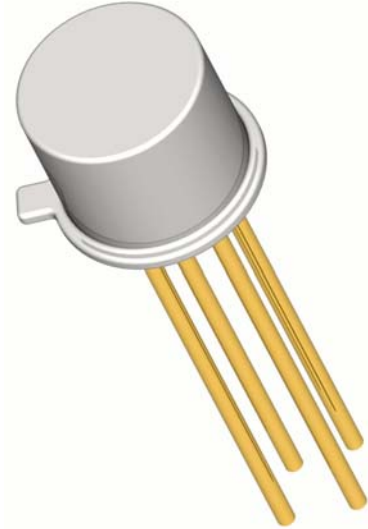
## Description

Semicoa Semiconductors offers:

- Screening and processing per MIL-PRF-19500 Appendix E
- JAN level (2N918J)
- JANTX level (2N918JX)
- JANTXV level (2N918JV)
- JANS level (2N918JS)
- 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

## Applications

- Ultra-high frequency transistor
- Low power
- NPN silicon transistor



## Features

- Hermetically sealed TO-72 metal can
- Also available in chip configuration
- Chip geometry 0003
- Reference document: MIL-PRF-19500/301

## Benefits

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

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

Absolute Maximum Ratings		T <sub>C</sub> = 25°C unless otherwise specified	
Parameter	Symbol	Rating	Unit
Collector-Emitter Voltage	V <sub>CEO</sub>	15	Volts
Collector-Base Voltage	V <sub>CBO</sub>	30	Volts
Emitter-Base Voltage	V <sub>EBO</sub>	3	Volts
Collector Current, Continuous	I <sub>C</sub>	50	mA
Power Dissipation, T <sub>A</sub> = 25°C Derate linearly above 25°C	P <sub>T</sub>	200 1.14	mW mW/°C
Operating Junction Temperature Storage Temperature	T <sub>J</sub> T <sub>STG</sub>	-65 to +200	°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	$V_{(BR)CEO}$	$I_C = 3 \text{ mA}$	15			Volts
Collector-Base Cutoff Current	$I_{CBO1}$	$V_{CB} = 25 \text{ Volts}$			10	nA
	$I_{CBO2}$	$V_{CB} = 30 \text{ Volts}$			1	$\mu\text{A}$
	$I_{CBO3}$	$V_{CB} = 25 \text{ Volts}, T_A = 150^\circ\text{C}$			1	$\mu\text{A}$
Emitter-Base Cutoff Current	$I_{EBO1}$	$V_{EB} = 2.5 \text{ Volts}$			10	nA
	$I_{EBO2}$	$V_{EB} = 3 \text{ Volts}$			10	$\mu\text{A}$

### On Characteristics

Pulse Test: Pulse Width = 300  $\mu\text{s}$ , Duty Cycle  $\leq 2.0\%$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
DC Current Gain	$h_{FE1}$	$I_C = 0.5 \text{ mA}, V_{CE} = 10 \text{ Volts}$	10		200	
	$h_{FE2}$	$I_C = 3 \text{ mA}, V_{CE} = 1 \text{ Volts}$	20			
	$h_{FE3}$	$I_C = 10 \text{ mA}, V_{CE} = 10 \text{ Volts}$	20			
	$h_{FE4}$	$I_C = 3 \text{ mA}, V_{CE} = 1 \text{ Volts}$ $T_A = -55^\circ\text{C}$	10			
Base-Emitter Saturation Voltage	$V_{BEsat}$	$I_C = 10 \text{ mA}, I_B = 1 \text{ mA}$			1.0	Volts
Collector-Emitter Saturation Voltage	$V_{CEsat}$	$I_C = 10 \text{ mA}, I_B = 1 \text{ mA}$			0.4	Volts

### Dynamic Characteristics

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Magnitude – Common Emitter, Short Circuit Forward Current Transfer Ratio	$ h_{FE} $	$V_{CE} = 10 \text{ Volts}, I_C = 4 \text{ mA}, f = 100 \text{ MHz}$	6		18	
Open Circuit Output Capacitance	$C_{OBO}$	$V_{CB} = 10 \text{ Volts}, I_E = 0 \text{ mA}, 100 \text{ kHz} < f < 1 \text{ MHz}$			1.7	pF
Noise Figure	NF	$V_{CE} = 6 \text{ Volts}, I_C = 1 \text{ mA}, f = 60 \text{ MHz}, R_g = 2.5 \text{ M}\Omega$			6	dB
Power Gain	$G_{pe}$	$V_{CB} = 12 \text{ Volts}, I_C = 6 \text{ mA}, f = 200 \text{ MHz}$	15			dB
Collector Base time constant	$r_b' C_C$	$V_{CB} = 10 \text{ Volts}, I_E = -4 \text{ mA}, f = 79.8 \text{ MHz}$			25	ps
Collector efficiency	$\eta$	$V_{CB} = 15 \text{ Volts}, I_C = 8 \text{ mA}, f = 500 \text{ MHz}$	30			mW
Oscillator Power Output	$P_O$	$V_{CB} = 15 \text{ Volts}, I_C = 8 \text{ mA}, f = 500 \text{ MHz}$			25	%