

## Description

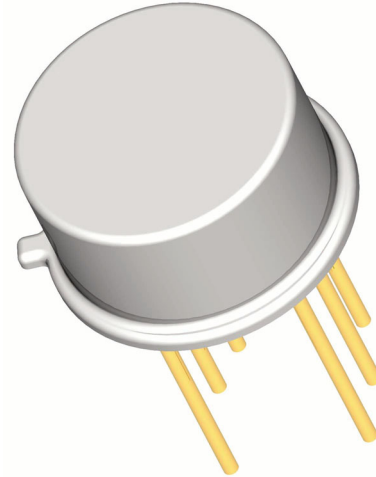
Semicoa Semiconductors offers:

- Screening and processing per MIL-PRF-19500 Appendix E
- JAN level (2N2919J)
- JANTX level (2N2919JX)
- JANTXV level (2N2919JV)
- JANS level (2N2919JS)
- 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
- Matched Dual transistors
- NPN silicon transistor



## Features

- Hermetically sealed TO-78 metal can
- Also available in chip configuration
- Chip geometry 0307
- Reference document:  
MIL-PRF-19500/355

## 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	$V_{CEO}$	60	Volts
Collector-Base Voltage	$V_{CBO}$	70	Volts
Emitter-Base Voltage	$V_{EBO}$	5	Volts
Collector Current, Continuous	$I_C$	50	mA
Power Dissipation, $T_A = 25^\circ\text{C}$ Derate linearly above $25^\circ\text{C}$	$P_T$	300 one section 600 both sections 1.71 one section 3.43 both sections	mW mW/°C
Power Dissipation, $T_C = 25^\circ\text{C}$ Derate linearly above $25^\circ\text{C}$	$P_T$	750 one section 1.5 both sections 4.286 one section 7.14 both sections	MW W mW/°C
Operating Junction Temperature	$T_J$	-65 to +200	°C
Storage Temperature	$T_{STG}$		

## 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	$V_{(BR)CEO}$	$I_C = 10 \text{ mA}$	60			Volts
Collector-Base Cutoff Current	$I_{CBO1}$	$V_{CB} = 70 \text{ Volts}$			10	$\mu\text{A}$
	$I_{CBO2}$	$V_{CB} = 45 \text{ Volts}$			2	nA
	$I_{CBO3}$	$V_{CB} = 45 \text{ Volts}, T_A = 150^\circ\text{C}$			2.5	$\mu\text{A}$
Collector-Emitter Cutoff Current	$I_{CEO}$	$V_{CE} = 5 \text{ Volts}$			2	nA
Emitter-Base Cutoff Current	$I_{EBO1}$	$V_{EB} = 6 \text{ Volts}$			10	$\mu\text{A}$
	$I_{EBO2}$	$V_{EB} = 5 \text{ Volts}$			2	nA

### 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	$h_{FE1}$	$I_C = 10 \mu\text{A}, V_{CE} = 5 \text{ Volts}$	60		240	
	$h_{FE2}$	$I_C = 100 \mu\text{A}, V_{CE} = 5 \text{ Volts}$	100		325	
	$h_{FE3}$	$I_C = 1 \text{ mA}, V_{CE} = 5 \text{ Volts}$	150		600	
	$h_{FE4}$	$I_C = 10 \mu\text{A}, V_{CE} = 5 \text{ Volts}$ $T_A = -55^\circ\text{C}$	20			
	$h_{FE2-1}/h_{FE2-2}$	$I_C = 100 \mu\text{A}, V_{CE} = 5 \text{ Volts}$	0.9		1.0	
Base-Emitter Voltage differential	$ V_{BE1} - V_{BE2} _1$	$V_{CE} = 5 \text{ Volts}, I_C = 10 \mu\text{A}$			5	mVolts
	$ V_{BE1} - V_{BE2} _2$	$V_{CE} = 5 \text{ Volts}, I_C = 100 \mu\text{A}$			3	
	$ V_{BE1} - V_{BE2} _3$	$V_{CE} = 5 \text{ Volts}, I_C = 1 \text{ mA}$			5	
Base-Emitter Voltage differential at temperature	$ V_{BE1} - V_{BE2} _1$ $ V_{BE1} - V_{BE2} _2$	$V_{CE} = 5 \text{ Volts}, I_C = 100 \mu\text{A}$ $T_A = 25^\circ\text{C}$ and $-55^\circ\text{C}$ $T_A = 25^\circ\text{C}$ and $+125^\circ\text{C}$			0.8 1	mVolts
Base-Emitter Saturation Voltage	$V_{BEsat1}$	$I_C = 1 \text{ mA}, I_B = 100 \mu\text{A}$	0.5		1.0	Volts
Collector-Emitter Saturation Voltage	$V_{CEsat1}$	$I_C = 1 \text{ mA}, I_B = 100 \mu\text{A}$			0.3	Volts

### Dynamic Characteristics

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Magnitude – Common Emitter, Short Circuit Forward Current Transfer Ratio	$ h_{FE1} $	$V_{CE} = 5 \text{ Volts}, I_C = 500 \mu\text{A}, f = 20 \text{ MHz}$	3		20	
Small Signal Short Circuit Forward Current Transfer Ratio	$h_{FE}$	$V_{CE} = 10 \text{ Volts}, I_C = 1 \text{ mA}, f = 1 \text{ kHz}$	150		600	
Open Circuit Output Capacitance	$C_{OBO}$	$V_{CB} = 5 \text{ Volts}, I_E = 0 \text{ mA}, 100 \text{ kHz} < f < 1 \text{ MHz}$			5	pF
Noise Figure	$NF_1$	$V_{CE} = 5 \text{ Volts}, I_C = 10 \mu\text{A}, R_g = 10 \text{ k}\Omega, f = 100 \text{ Hz}$			5	dB
	$NF_2$	$f = 1 \text{ kHz}$			3	
	$NF_3$	$f = 10 \text{ kHz}$			3	
Short Circuit Input Impedance	$h_{ie}$	$V_{CB} = 5\text{V}, I_C = 1\text{mA}, f = 1\text{kHz}$	3		30	$\text{k}\Omega$
Open Circuit Output Admittance	$h_{oe}$	$V_{CB} = 5\text{V}, I_C = 1\text{mA}, f = 1\text{kHz}$			60	$\mu\text{mhos}$
Open Circuit reverse Voltage Transfer Ratio	$h_{re}$	$V_{CB} = 5\text{V}, I_C = 100\mu\text{A}, f = 1\text{kHz}$			$1 \times 10^{-3}$	