

**Description**

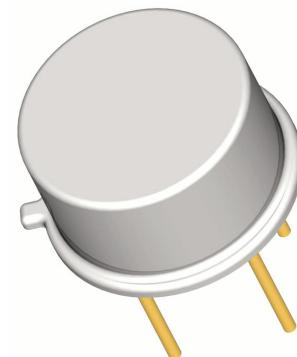
Semicoa Semiconductors offers:

- Screening and processing per MIL-PRF-19500 Appendix E
- JAN level (2N5339J)
- JANTX level (2N5339JX)
- JANTXV level (2N5339JV)
- QCI to the applicable level
- 100% die visual inspection per MIL-STD-750 method 2072 for JANTXV
- 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 switching transistor
- Low power
- NPN silicon transistor

**Features**

- Hermetically sealed TO-39 metal can
- Also available in chip configuration
- Chip geometry 9201
- Reference document: MIL-PRF-19500/560

**Benefits**

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

<b>Absolute Maximum Ratings</b>		<b>T<sub>c</sub> = 25°C unless otherwise specified</b>	
<b>Parameter</b>	<b>Symbol</b>	<b>Rating</b>	<b>Unit</b>
Collector-Emitter Voltage	V <sub>CEO</sub>	100	Volts
Collector-Base Voltage	V <sub>CBO</sub>	100	Volts
Emitter-Base Voltage	V <sub>EBO</sub>	6	Volts
Collector Current, Continuous	I <sub>C</sub>	5	A
Power Dissipation, T <sub>A</sub> = 25°C Derate linearly above 25°C	P <sub>T</sub>	1 5.71	W mW/°C
Thermal Resistance	R <sub>θJC</sub>	17.5	°C/W
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	$V_{(\text{BR})\text{CEO}}$	$I_C = 50 \text{ mA}$	100			Volts
Collector-Base Cutoff Current	$I_{\text{CBO}}$	$V_{\text{CB}} = 100 \text{ Volts}$			10	$\mu\text{A}$
Collector-Emitter Cutoff Current	$I_{\text{CEO}}$	$V_{\text{CE}} = 100 \text{ Volts}$			100	$\mu\text{A}$
Collector-Emitter Cutoff Current	$I_{\text{CEX1}}$ $I_{\text{CEX2}}$	$V_{\text{CE}} = 90 \text{ Volts}, V_{\text{BE}} = 1.5 \text{ Volts}$ $V_{\text{CE}} = 90 \text{ Volts}, V_{\text{BE}} = 1.5 \text{ Volts}, T_A = 150^\circ\text{C}$			10 10	$\mu\text{A}$ mA
Emitter-Base Cutoff Current	$I_{\text{EBO}}$	$V_{\text{EB}} = 6 \text{ Volts}$			100	$\mu\text{A}$

## 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	$h_{FE1}$ $h_{FE2}$ $h_{FE3}$ $h_{FE4}$	$I_C = 0.5 \text{ A}, V_{\text{CE}} = 2 \text{ Volts}$ $I_C = 2 \text{ A}, V_{\text{CE}} = 2 \text{ Volts}$ $I_C = 5 \text{ A}, V_{\text{CE}} = 2 \text{ Volts}$ $I_C = 2 \text{ A}, V_{\text{CE}} = 2 \text{ Volts}$ $T_A = -55^\circ\text{C}$	60 60 40 12		240	
Base-Emitter Saturation Voltage	$V_{\text{BEsat1}}$ $V_{\text{BEsat2}}$	$I_C = 2 \text{ A}, I_B = 200 \text{ mA}$ $I_C = 5 \text{ A}, I_B = 500 \text{ mA}$			1.2 1.8	Volts
Collector-Emitter Saturation Voltage	$V_{\text{CESat1}}$ $V_{\text{CESat2}}$	$I_C = 2 \text{ A}, I_B = 200 \text{ mA}$ $I_C = 5 \text{ A}, I_B = 500 \text{ mA}$			0.7 1.2	Volts

## Dynamic Characteristics

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Magnitude – Common Emitter, Short Circuit Forward Current Transfer Ratio	$ h_{FE} $	$V_{\text{CE}} = 10 \text{ Volts}, I_C = 500 \text{ mA}, f = 10 \text{ MHz}$	3		15	
Open Circuit Output Capacitance	$C_{\text{OBO}}$	$V_{\text{CB}} = 10 \text{ Volts}, I_E = 0 \text{ mA}, 100 \text{ kHz} < f < 1 \text{ MHz}$			250	pF
Open Circuit Input Capacitance	$C_{\text{IBO}}$	$V_{\text{EB}} = 2 \text{ Volts}, I_C = 0 \text{ mA}, 100 \text{ kHz} < f < 1 \text{ MHz}$			1,000	pF

## Switching Characteristics

Delay Time	$t_d$	$I_C = 2 \text{ A}, I_{B1} = 200 \text{ mA}$			100	ns
Rise Time	$t_r$				100	
Storage Time	$t_s$	$I_C = 2 \text{ mA}, I_{B1}=I_{B2} = 200 \text{ mA}$			2	$\mu\text{s}$
Fall Time	$t_f$				200	ns