

## Description

Semicoa Semiconductors offers:

- Screening and processing per MIL-PRF-19500 Appendix E
- JAN level (2N2484J)
- JANTX level (2N2484JX)
- JANTXV level (2N2484JV)
- JANS level (2N2484JS)
- 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-18 metal can
- Also available in chip configuration
- Chip geometry 0307
- Reference document:  
MIL-PRF-19500/376

## Benefits

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

Absolute Maximum Ratings		T <sub>C</sub> = 25°C unless otherwise specified	
Parameter	Symbol	Rating	Unit
Collector-Emitter Voltage	V <sub>CEO</sub>	60	Volts
Collector-Base Voltage	V <sub>CBO</sub>	60	Volts
Emitter-Base Voltage	V <sub>EBO</sub>	6	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>	360 2.06	mW mW/°C
Thermal Resistance	R <sub>θJA</sub>	325	°C/W
Operating Junction Temperature	T <sub>J</sub>	-65 to +200	°C
Storage Temperature	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	$V_{(BR)CEO}$	$I_C = 10 \text{ mA}$	60			Volts
Collector-Base Cutoff Current	$I_{CBO1}$	$V_{CB} = 60 \text{ Volts}$			10	$\mu\text{A}$
	$I_{CBO2}$	$V_{CB} = 45 \text{ Volts}$			5	nA
	$I_{CBO3}$	$V_{CB} = 45 \text{ Volts}, T_A = 150^\circ\text{C}$			10	$\mu\text{A}$
Collector-Emitter Cutoff Current	$I_{CEO}$	$V_{CE} = 5 \text{ Volts}$			2	nA
Collector-Emitter Cutoff Current	$I_{CES}$	$V_{CE} = 45 \text{ Volts}$			5	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	$h_{FE1}$	$I_C = 1 \mu\text{A}, V_{CE} = 5 \text{ Volts}$	45			
	$h_{FE2}$	$I_C = 10 \mu\text{A}, V_{CE} = 5 \text{ Volts}$	200		500	
	$h_{FE3}$	$I_C = 100 \mu\text{A}, V_{CE} = 5 \text{ Volts}$	225		675	
	$h_{FE4}$	$I_C = 500 \mu\text{A}, V_{CE} = 5 \text{ Volts}$	250		800	
	$h_{FE5}$	$I_C = 1 \text{ mA}, V_{CE} = 5 \text{ Volts}$	250		800	
	$h_{FE6}$	$I_C = 10 \text{ mA}, V_{CE} = 5 \text{ Volts}$	225		800	
	$h_{FE7}$	$I_C = 10 \mu\text{A}, V_{CE} = 5 \text{ Volts}$ $T_A = -55^\circ\text{C}$	35			
Base-Emitter Voltage	$V_{BE}$	$V_{CE} = 5 \text{ Volts}, I_B = 100 \mu\text{A}$	0.5		0.7	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_{FE} _1$	$V_{CE} = 5 \text{ Volts}, I_C = 50 \mu\text{A}, f = 5 \text{ MHz}$	3			
	$ h_{FE} _2$	$V_{CE} = 5 \text{ Volts}, I_C = 500 \mu\text{A}, f = 30 \text{ MHz}$	2		7	
Small Signal Short Circuit Forward Current Transfer Ratio	$h_{FE}$	$V_{CE} = 5 \text{ Volts}, I_C = 1 \text{ mA}, f = 1 \text{ kHz}$	250		900	
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
Open Circuit Input Capacitance	$C_{IBO}$	$V_{EB} = 0.5 \text{ Volts}, I_C = 0 \text{ mA}, 100 \text{ kHz} < f < 1 \text{ MHz}$			6	pF
Noise Figure	$NF_1$	$V_{CE} = 5 \text{ Volts}, I_C = 10 \mu\text{A}, R_g = 10 \text{ k}\Omega, f = 100 \text{ Hz}$			7.5	dB
	$NF_2$	$f = 1 \text{ kHz}$			3	
	$NF_3$	$f = 10 \text{ kHz}$			2	
Noise Figure (wideband)	$NF_4$	$V_{CE} = 5 \text{ Volts}, I_C = 10 \mu\text{A}, R_g = 10 \text{ k}\Omega, 10\text{Hz} < \text{Noise BW} < 15.7\text{kHz}$			3	dB
Short Circuit Input Impedance	$h_{ie}$	$V_{CB} = 5\text{V}, I_C = 1\text{mA}, f = 1\text{kHz}$	3.5		24	k $\Omega$
Open Circuit Output Admittance	$h_{oe}$				40	$\mu\text{mos}$
Open Circuit Rev Volt Transfer Ratio	$h_{re}$				$8 \times 10^{-4}$	