

## Description

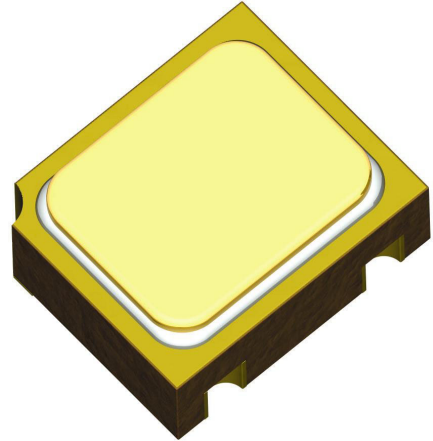
Semicoa Semiconductors offers:

- Screening and processing per MIL-PRF-19500 Appendix E
- JAN level (2N2857UBJ)
- JANTX level (2N2857UBJX)
- JANTXV level (2N2857UBJV)
- JANS level (2N2857UBJS)
- 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

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



## Features

- Hermetically sealed Cersot ceramic
- Also available in chip configuration
- Chip geometry 0011
- Reference document: MIL-PRF-19500/343

## 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>	15	Volts
Collector-Base Voltage	V <sub>CB0</sub>	30	Volts
Emitter-Base Voltage	V <sub>EBO</sub>	3	Volts
Collector Current, Continuous	I <sub>C</sub>	40	mA
Power Dissipation, T <sub>A</sub> = 25°C Derate linearly above 25°C	P <sub>T</sub>	200 1.14	mW mW/°C
Power Dissipation, T <sub>C</sub> = 25°C Derate linearly above 25°C	P <sub>T</sub>	300 1.71	mW mW/°C
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	$V_{(BR)CEO}$	$I_C = 3 \text{ mA}$	15			Volts
Collector-Base Cutoff Current	$I_{CBO1}$	$V_{CB} = 15 \text{ Volts}$			10	nA
Collector-Base Cutoff Current	$I_{CBO3}$	$V_{CB} = 30 \text{ Volts}$			1	$\mu\text{A}$
Collector-Base Cutoff Current	$I_{CBO2}$	$V_{CB} = 15 \text{ Volts}, T_A = 150^\circ\text{C}$			1	$\mu\text{A}$
Collector-Emitter Cutoff Current	$I_{CES}$	$V_{CE} = 16 \text{ Volts}$			100	nA
Emitter-Base Cutoff Current	$I_{EBO1}$	$V_{EB} = 3 \text{ Volts}$			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	$h_{FE1}$	$I_C = 3 \text{ mA}, V_{CE} = 1 \text{ Volts}$	30		150	
	$h_{FE2}$	$I_C = 3 \text{ mA}, V_{CE} = 1 \text{ Volts}$	10			
		$T_A = -55^\circ\text{C}$				
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} $	$V_{CE} = 6 \text{ Volts}, I_C = 5 \text{ mA}, f = 100 \text{ MHz}$	10		21	
Small Signal Short Circuit Forward Current Transfer Ratio	$h_{FE}$	$V_{CE} = 6 \text{ Volts}, I_C = 2 \text{ mA}, f = 1 \text{ kHz}$	50		220	
Collector to Base Feedback Capacitance	$C_{CB}$	$V_{CB} = 10 \text{ Volts}, I_E = 0 \text{ mA}, 100 \text{ kHz} < f < 1 \text{ MHz}$			1	pF
Collector Base time constant	$\tau_b' C_C$	$V_{CB} = 6 \text{ Volts}, I_E = 2 \text{ mA}, f = 31.9 \text{ MHz}$	4		15	ps
Small Signal Power Gain	$G_{pe}$	$V_{CE} = 6 \text{ Volts}, I_E = 1.5 \text{ mA}, f = 450 \text{ MHz}$	12.5		21	MHz
Noise Figure	F	$V_{CE} = 6 \text{ Volts}, I_C = 1.5 \text{ mA}, f < 450 \text{ MHz}, R_g = 50 \Omega$			4.5	dB