

Description

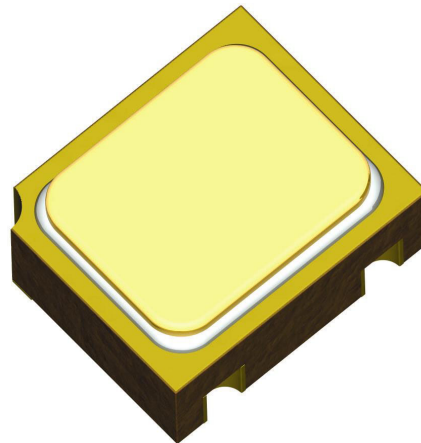
Semicoa Semiconductors offers:

- 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 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		$T_C = 25^{\circ}\text{C}$ unless otherwise specified	
Parameter	Symbol	Rating	Unit
Collector-Emitter Voltage	V_{CEO}	15	Volts
Collector-Base Voltage	V_{CBO}	30	Volts
Emitter-Base Voltage	V_{EBO}	3	Volts
Collector Current, Continuous	I_C	40	mA
Power Dissipation, $T_A = 25^{\circ}\text{C}$ Derate linearly above 25°C	P_T	200 1.14	mW mW/ $^{\circ}\text{C}$
Power Dissipation, $T_C = 25^{\circ}\text{C}$ Derate linearly above 25°C	P_T	300 1.71	mW mW/ $^{\circ}\text{C}$
Operating Junction Temperature	T_J	-65 to +200	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-65 to +200	$^{\circ}\text{C}$

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	μA
Collector-Base Cutoff Current	I_{CBO2}	$V_{CB} = 15\text{ Volts}, T_A = 150^\circ\text{C}$			1	μA
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	μA

On Characteristics

Pulse Test: Pulse Width = 300 μs , 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	$r_b'C_C$	$V_{CB} = 6\text{ Volts}, I_E = 2\text{ mA}, f = 31.9\text{ MHz}$	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