

Description

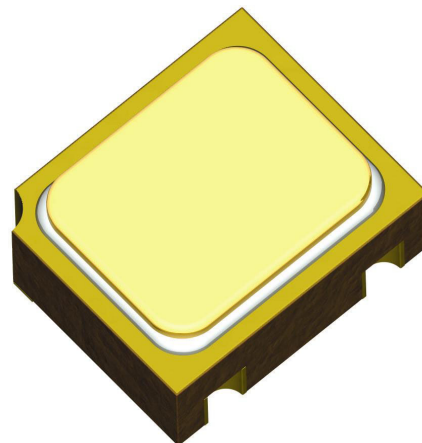
Semicoa Semiconductors offers:

- Screening and processing per MIL-PRF-19500 Appendix E
- JAN level (2N4957UBJ)
- JANTX level (2N4957UBJX)
- JANTXV level (2N4957UBJV)
- 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 or (714) 979-1900

Applications

- General purpose
- VHF-UHF amplifier transistor
- PNP silicon transistor



Features

- Hermetically sealed TO-72 metal can
- Also available in chip configuration
- Chip geometry 0006
- Reference document:
MIL-PRF-19500/426

Benefits

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

Absolute Maximum Ratings		$T_C = 25^\circ\text{C}$ unless otherwise specified	
Parameter	Symbol	Rating	Unit
Collector-Emitter Voltage	V_{CEO}	30	Volts
Collector-Base Voltage	V_{CBO}	30	Volts
Emitter-Base Voltage	V_{EBO}	3	Volts
Collector Current, Continuous	I_C	30	mA
Power Dissipation, $T_A = 25^\circ\text{C}$ Derate linearly above 25°C	P_T	200 1.14	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	$V_{(BR)CEO}$	$I_C = 1\text{ mA}$	30			Volts
Collector-Base Cutoff Current	I_{CBO1}	$V_{CB} = 20\text{ Volts}$			100	nA
	I_{CBO2}	$V_{CB} = 30\text{ Volts}$			100	μA
	I_{CBO3}	$V_{CB} = 20\text{ Volts}, T_A = 150^\circ\text{C}$			100	μA
Emitter-Base Cutoff Current	I_{EBO1}	$V_{EB} = 3\text{ Volts}$			100	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}	$I_C = 0.5\text{ mA}, V_{CE} = 10\text{ Volts}$	15			
	h_{FE2}	$I_C = 2\text{ mA}, V_{CE} = 10\text{ Volts}$	20			
	h_{FE3}	$I_C = 5\text{ mA}, V_{CE} = 10\text{ Volts}$	30		165	
	h_{FE4}	$I_C = 5\text{ mA}, V_{CE} = 10\text{ Volts}$ $T_A = -55^\circ\text{C}$	10			

Dynamic Characteristics

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Magnitude – Common Emitter, Short Circuit Forward Current Transfer Ratio	$ h_{FE} $	$V_{CE} = 10\text{ Volts}, I_C = 2\text{ mA}, f = 100\text{ MHz}$	12		36	
Common-Emitter small signal power gain	G_{PE}	$I_C = 2\text{ mA}, V_{CE} = 10\text{ Volts}, f = 450\text{ MHz}$	17		25	dB
Noise Figure	NF	$V_{CE} = 10\text{ Volts}, I_C = 2\text{ mA}, f = 450\text{ MHz}, R_L = 50\ \Omega$			3.5	dB
Collector Base time constant	$r_b'C_C$	$V_{CB} = 10\text{ Volts}, I_E = 2\text{ mA}, f = 63.6\text{ MHz}$	1		8	ps
Collector Base feedback capacitance	C_{cb}	$V_{CB} = 10\text{ Volts}, I_E = 0\text{ mA}, 100\text{ kHz} < f < 1\text{ MHz}$			0.8	pF