

Description

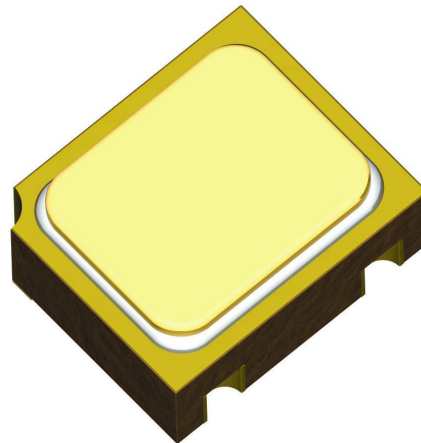
Semicoa Semiconductors offers:

- Screening and processing per MIL-PRF-19500 Appendix E
- JAN level (2N3866AUBJ)
- JANTX level (2N3866AUBJX)
- JANTXV level (2N3866AUBJV)
- JANS level (2N3866AUBJS)
- 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

- General purpose high frequency
- VHF-UHF amplifier transistor
- NPN silicon transistor



Features

- Hermetically sealed Cersot ceramic
- Also available in chip configuration
- Chip geometry 1008
- Reference document: MIL-PRF-19500/398

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}	30	Volts
Collector-Base Voltage	V_{CBO}	60	Volts
Emitter-Base Voltage	V_{EBO}	3.5	Volts
Collector Current, Continuous	I_C	400	mA
Power Dissipation, $T_A = 25^\circ\text{C}$ Derate linearly above 25°C	P_T	0.5 2.86	W mW/ $^\circ\text{C}$
Thermal Resistance	$R_{\theta JA}$	325	$^\circ\text{C}/\text{W}$
Operating Junction Temperature Storage Temperature	T_J 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-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 100\ \mu\text{A}$	60			Volts
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 5\ \text{mA}$	30			Volts
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 100\ \mu\text{A}$	3.5			Volts
Collector-Emitter Cutoff Current	I_{CEO}	$V_{CE} = 28\ \text{Volts}$			20	μA
Collector-Emitter Cutoff Current	I_{CES1}	$V_{CE} = 55\ \text{Volts}$			100	μA
	I_{CES2}	$V_{CE} = 55\ \text{Volts}, T_A = 150^\circ\text{C}$			2	mA

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}	$I_C = 50\ \text{mA}, V_{CE} = 5\ \text{Volts}$	25		200	
	h_{FE2}	$I_C = 360\ \text{mA}, V_{CE} = 5\ \text{Volts}$	8			
	h_{FE3}	$I_C = 50\ \text{mA}, V_{CE} = 5\ \text{Volts}$	12			
		$T_A = -55^\circ\text{C}$				
Collector-Emitter Saturation Voltage	V_{CEsat1}	$I_C = 100\ \text{mA}, I_B = 10\ \text{mA}$			1	Volts

Dynamic Characteristics

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Magnitude – Common Emitter, Short Circuit Forward Current Transfer Ratio	$ h_{FE} $	$V_{CE} = 15\ \text{Volts}, I_C = 50\ \text{mA}, f = 200\ \text{MHz}$	4		7.5	
Open Circuit Output Capacitance	C_{OBO}	$V_{CB} = 28\ \text{Volts}, I_E = 0\ \text{mA},$			3.5	pF
Collector Efficiency	η_1	$V_{CC} = 28\ \text{Volts}, f = 400\ \text{MHz}$ $P_{in} = 0.15\ \text{W}$	45			%
	η_2	$P_{in} = 0.075\ \text{W}$	40			
Power Output	P_{1out}	$V_{CC} = 28\ \text{Volts}, f = 400\ \text{MHz}$ $P_{in} = 0.15\ \text{W}$	1.0		2	Watts
	P_{1out}	$P_{in} = 0.075\ \text{W}$	0.5			