

Description

Semicoa Semiconductors offers:

- Screening and processing per MIL-PRF-19500 Appendix E
- JAN level (2N2906AJ)
- JANTX level (2N2906AJX)
- JANTXV level (2N2906AJV)
- JANS level (2N2906AJS)
- 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

Applications

- General purpose
- Low power
- PNP silicon transistor



Features

- Hermetically sealed TO-18 metal can
- Also available in chip configuration
- Chip geometry 0600
- Reference document: MIL-PRF-19500/291

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}	60	Volts
Collector-Base Voltage	V_{CBO}	60	Volts
Emitter-Base Voltage	V_{EBO}	5	Volts
Collector Current, Continuous	I_C	600	mA
Power Dissipation, $T_A = 25^\circ\text{C}$ Derate linearly above 37.5°C	P_T	0.5 3.08	W mW/ $^\circ\text{C}$
Thermal Resistance	$R_{\theta JA}$	325	$^\circ\text{C/W}$
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	$V_{(\text{BR})\text{CEO}}$	$I_C = 10 \text{ mA}$	60			Volts
Collector-Base Cutoff Current	$I_{\text{CBO}1}$	$V_{\text{CB}} = 60 \text{ Volts}$			10	μA
Collector-Base Cutoff Current	$I_{\text{CBO}2}$	$V_{\text{CB}} = 50 \text{ Volts}$			10	nA
Collector-Base Cutoff Current	$I_{\text{CBO}3}$	$V_{\text{CB}} = 50 \text{ Volts}, T_A = 150^\circ\text{C}$			10	μA
Collector-Emitter Cutoff Current	I_{CES}	$V_{\text{CE}} = 50 \text{ Volts}$			50	nA
Emitter-Base Cutoff Current	$I_{\text{EBO}1}$	$V_{\text{EB}} = 5 \text{ Volts}$			10	μA
Emitter-Base Cutoff Current	$I_{\text{EBO}2}$	$V_{\text{EB}} = 4 \text{ Volts}$			50	nA

On Characteristics						
Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
DC Current Gain	h_{FE1}	$I_C = 0.1 \text{ mA}, V_{\text{CE}} = 10 \text{ Volts}$	40			
	h_{FE2}	$I_C = 1.0 \text{ mA}, V_{\text{CE}} = 10 \text{ Volts}$	40		175	
	h_{FE3}	$I_C = 10 \text{ mA}, V_{\text{CE}} = 10 \text{ Volts}$	40			
	h_{FE4}	$I_C = 150 \text{ mA}, V_{\text{CE}} = 10 \text{ Volts}$	40		120	
	h_{FE5}	$I_C = 500 \text{ mA}, V_{\text{CE}} = 10 \text{ Volts}$	40			
	h_{FE6}	$I_C = 10 \text{ mA}, V_{\text{CE}} = 10 \text{ Volts}$ $T_A = -55^\circ\text{C}$	20			
Base-Emitter Saturation Voltage	$V_{\text{BEsat}1}$ $V_{\text{BEsat}2}$	$I_C = 150 \text{ mA}, I_B = 15 \text{ mA}$ $I_C = 500 \text{ mA}, I_B = 50 \text{ mA}$	0.6		1.3 2.6	Volts
Collector-Emitter Saturation Voltage	$V_{\text{CESat}1}$ $V_{\text{CESat}2}$	$I_C = 150 \text{ mA}, I_B = 15 \text{ mA}$ $I_C = 500 \text{ mA}, I_B = 50 \text{ mA}$			0.4 1.6	Volts

Dynamic Characteristics						
Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Magnitude – Common Emitter, Short Circuit Forward Current Transfer Ratio	$ h_{FE} $	$V_{\text{CE}} = 20 \text{ Volts}, I_C = 20 \text{ mA}, f = 100 \text{ MHz}$	2.0			
Small Signal Short Circuit Forward Current Transfer Ratio	h_{FE}	$V_{\text{CE}} = 10 \text{ Volts}, I_C = 1 \text{ mA}, f = 1 \text{ kHz}$	40			
Open Circuit Output Capacitance	C_{OBO}	$V_{\text{CB}} = 10 \text{ Volts}, I_E = 0 \text{ mA}, 100 \text{ kHz} < f < 1 \text{ MHz}$			8	pF
Open Circuit Input Capacitance	C_{IBO}	$V_{\text{EB}} = 0.5 \text{ Volts}, I_C = 0 \text{ mA}, 100 \text{ kHz} < f < 1 \text{ MHz}$			30	pF

Switching Characteristics						
Saturated Turn-On Time	t_{on}				45	ns
Saturated Turn-Off Time	t_{off}				300	ns