

Description

Semicoa Corporation offers:

- Screening and processing per MIL-PRF-19500 Appendix E
- JAN level (2N930J)
- JANTX level (2N930JX)
- JANTXV level (2N930JV)
- 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
- Low power
- NPN silicon transistor



Features

- Hermetically sealed TO-18 metal can
- Also available in chip configuration
- Chip geometry 0307
- Reference document: MIL-PRF-19500/253

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}	45	Volts
Collector-Base Voltage	V_{CBO}	60	Volts
Emitter-Base Voltage	V_{EBO}	6	Volts
Collector Current, Continuous	I_C	30	mA
Power Dissipation, $T_A = 25^\circ\text{C}$ Derate linearly above 25°C	P_T	360 2.06	mW mW/ $^\circ\text{C}$
Thermal Resistance	$R_{\theta JA}$	485	$^\circ\text{C}/\text{W}$
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	$V_{(BR)CEO}$	$I_C = 10\text{ mA}$	45			Volts
Collector-Base Cutoff Current	I_{CBO1}	$V_{CB} = 60\text{ Volts}$			10	μA
	I_{CBO2}	$V_{CB} = 45\text{ Volts}$			10	nA
Collector-Emitter Cutoff Current	I_{CEO}	$V_{CE} = 5\text{ Volts}$			2	nA
Collector-Emitter Cutoff Current	I_{CES1}	$V_{CE} = 45\text{ Volts}$			2	nA
	I_{CES2}	$V_{CE} = 45\text{ Volts}, T_A = 150^\circ\text{C}$			10	μA
Emitter-Base Cutoff Current	I_{EBO1}	$V_{EB} = 6\text{ Volts}$			10	μA
	I_{EBO2}	$V_{EB} = 5\text{ Volts}$			5	nA

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}	$I_C = 10\text{ }\mu\text{A}, V_{CE} = 5\text{ Volts}$	100		300	
	h_{FE2}	$I_C = 500\text{ }\mu\text{A}, V_{CE} = 5\text{ Volts}$	150			
	h_{FE3}	$I_C = 10\text{ mA}, V_{CE} = 5\text{ Volts}$			600	
	h_{FE4}	$I_C = 10\text{ }\mu\text{A}, V_{CE} = 5\text{ Volts}$ $T_A = -55^\circ\text{C}$	20			
Base-Emitter Saturation Voltage	V_{BEsat1}	$I_C = 10\text{ mA}, I_B = 0.5\text{ mA}$	0.6		1	Volts
Collector-Emitter Saturation Voltage	V_{CEsat1}	$I_C = 10\text{ mA}, I_B = 0.5\text{ mA}$			1	Volts

Dynamic Characteristics

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Magnitude – Common Emitter, Short Circuit Forward Current Transfer Ratio	$ h_{FE} $	$V_{CE} = 5\text{ Volts}, I_C = 500\text{ }\mu\text{A}, f = 30\text{ MHz}$	1.5		6	
Small Signal Short Circuit Forward Current Transfer Ratio	h_{FE}	$V_{CE} = 5\text{ Volts}, I_C = 1\text{ mA}, f = 1\text{ kHz}$	150		600	
Open Circuit Output Capacitance	C_{OBO}	$V_{CB} = 5\text{ Volts}, I_E = 0\text{ mA}, 100\text{ kHz} < f < 1\text{ MHz}$			8	pF
Noise Figure	NF_1	$V_{CE} = 5\text{ Volts}, I_C = 10\text{ }\mu\text{A}, R_g = 10\text{ k}\Omega, f = 100\text{ Hz}$			5	dB
	NF_2	$f = 1\text{ kHz}$			3	
	NF_3	$f = 10\text{ kHz}$			3	
Short Circuit Input Impedance	h_{ie}	$V_{CB} = 5\text{ V}, I_C = 1\text{ mA}, f = 1\text{ kHz}$	25		32	Ω
Open Circuit Output Admittance	h_{oe}	$V_{CB} = 5\text{ V}, I_C = 1\text{ mA}, f = 1\text{ kHz}$			1	mho
Open Circuit reverse Voltage Transfer Ratio	h_{re}	$V_{CB} = 5\text{ V}, I_C = 1\text{ mA}, f = 1\text{ kHz}$			6×10^{-4}	