

Description

SEMICOA Corporation offers:

- Screening and processing per MIL-PRF-19500 Appendix E
- JAN level (2N2946AJ)
- JANTX level (2N2946AJX)
- JANTXV level (2N2946AJV)
- JANS level (2N2946AJS)
- 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
- Low power
- PNP silicon transistor



Features

- Hermetically sealed TO-46 metal can
- Also available in chip configuration
- Chip geometry 1317
- Reference document: MIL-PRF-19500/382

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}	35	Volts
Emitter-Collector Voltage	V_{ECO}	35	Volts
Collector-Base Voltage	V_{CBO}	40	Volts
Emitter-Base Voltage	V_{EBO}	40	Volts
Collector Current, Continuous	I_C	100	mA
Power Dissipation, $T_C = 25^\circ\text{C}$	P_T	400	mW
Thermal Resistance	$R_{\theta JA}$	435	$^\circ\text{C}/\text{W}$
Operating Junction and 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-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 10 \mu\text{A}$	35			Volts
Emitter-Collector Breakdown Voltage	$V_{(BR)ECO}$	$I_E = 10 \mu\text{A}, I_B = 0 \text{A}$	35			Volts
Collector-Base Cutoff Current	I_{CBO1}	$V_{CB} = 40 \text{Volts}$			10	μA
	I_{CBO2}	$V_{CB} = 32 \text{Volts}$			0.5	nA
	I_{CBO3}	$V_{CB} = 40 \text{Volts}, T_A = 100^\circ\text{C}$			2.5	nA
Emitter-Base Cutoff Current	I_{EBO1}	$V_{EB} = 40 \text{Volts}$			10	μA
	I_{EBO2}	$V_{EB} = 32 \text{Volts}$			0.5	nA
	I_{EBO3}	$V_{EB} = 40 \text{Volts}, T_A = 100^\circ\text{C}$			2.0	nA

On Characteristics

Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2.0\%$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Forward Current transfer ratio	h_{FE1}	$I_C = 1.0 \text{mA}, V_{CE} = 0.5 \text{Volts}$	50			
	h_{FE2}	$I_C = 1.0 \text{mA}, V_{CE} = 0.5 \text{Volts}, T_A = -55^\circ\text{C}$	20			
Forward Current transfer ratio (inverted connection)	$h_{FE(inv)1}$	$I_E = 200 \mu\text{A}, V_{EC} = 0.5 \text{Volts}$	20			
	$h_{FE(inv)2}$	$I_E = 200 \mu\text{A}, V_{EC} = 0.5 \text{Volts}, T_A = -55^\circ\text{C}$	10			
Emitter-Collector Offset Voltage	$V_{EC(ofs)1}$	$I_E = 0 \text{A}, I_B = 200 \mu\text{A}$			0.8	mVolts
	$V_{EC(ofs)2}$	$I_E = 0 \text{A}, I_B = 1.0 \text{mA}$			2.0	
	$V_{EC(ofs)3}$	$I_E = 0 \text{A}, I_B = 2.0 \text{mA}$			2.5	

Dynamic Characteristics

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Magnitude of Common-Emitter Small-Signal Short-Circuit Forward-Current Transfer Ratio	$ h_{FE} $	$V_{CE} = 6 \text{Volts}, I_C = 1.0 \text{mA}, f = 1 \text{MHz}$	5		55	
Open Circuit Output Capacitance	C_{OBO}	$V_{CB} = 6 \text{Volts}, I_E = 0 \text{mA}, 100 \text{kHz} < f < 1 \text{MHz}$			10	pF
Open Circuit Input Capacitance	C_{IBO}	$V_{EB} = 6 \text{Volts}, I_C = 0 \text{mA}, 100 \text{kHz} < f < 1 \text{MHz}$			6.0	pF
Small Signal Emitter-Collector On-State Resistance	$r_{ec(ON)1}$	$I_B = 100 \mu\text{A}, I_E = 0 \text{A}, I_e = 100 \mu\text{A ac (rms)}, f = 1 \text{kHz}$			14	Ω
Small Signal Emitter-Collector On-State Resistance	$r_{ec(ON)2}$	$I_B = 1.0 \text{mA}, I_E = 0 \text{A}, I_e = 100 \mu\text{A ac (rms)}, f = 1 \text{kHz}$			8	Ω

Switching Characteristics

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Delay Time	t_d				50	ns
Rise Time	t_r				100	ns
Storage Time	t_s				350	ns
Fall Time	t_f				100	ns