

## Description

SEMICOA Corporation offers:

- Screening and processing per MIL-PRF-19500 Appendix E
- JAN level (2N2906AJ)
- JANTX level (2N2906AJX)
- JANTXV level (2N2906AJV)
- JANS level (2N2906AJS)
- JANSR level (2N2906AJSR)
- JANSF level (2N2906AJSF)
- 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](http://www.SEMICOA.com) or (714) 979-1900

## 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, JANS, JANSR and JANSF
- Radiation testing available

| Absolute Maximum Ratings   |                  | T <sub>c</sub> = 25°C unless otherwise specified |            |
|--|------------------|--|------------|
| Parameter  | Symbol           | Rating   | Unit       |
| Collector-Emitter Voltage  | V <sub>CEO</sub> | 60   | Volts      |
| Collector-Base Voltage   | V <sub>CBO</sub> | 60   | Volts      |
| Emitter-Base Voltage   | V <sub>EBO</sub> | 5  | Volts      |
| Collector Current, Continuous  | I <sub>C</sub>   | 600  | mA         |
| Power Dissipation, T <sub>A</sub> = 25°C<br>Derate linearly above 37.5°C | P <sub>T</sub>   | 0.5<br>3.08                                      | W<br>mW/°C |
| Thermal Resistance   | R <sub>θJA</sub> | 325  | °C/W       |
| Operating Junction Temperature   | T <sub>J</sub>   | -65 to +200                                      | °C         |
| Storage Temperature  | T <sub>STG</sub> | -65 to +200                                      | °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 | $V_{(BR)CEO}$ | $I_C = 10\text{ mA}$                                | 60  |     |     | Volts         |
| Collector-Base Cutoff Current       | $I_{CBO1}$    | $V_{CB} = 60\text{ Volts}$                          |     |     | 10  | $\mu\text{A}$ |
| Collector-Base Cutoff Current       | $I_{CBO2}$    | $V_{CB} = 50\text{ Volts}$                          |     |     | 10  | nA            |
| Collector-Base Cutoff Current       | $I_{CBO3}$    | $V_{CB} = 50\text{ Volts}, T_A = 150^\circ\text{C}$ |     |     | 10  | $\mu\text{A}$ |
| Collector-Emitter Cutoff Current    | $I_{CES}$     | $V_{CE} = 50\text{ Volts}$                          |     |     | 50  | nA            |
| Emitter-Base Cutoff Current         | $I_{EBO1}$    | $V_{EB} = 5\text{ Volts}$                           |     |     | 10  | $\mu\text{A}$ |
| Emitter-Base Cutoff Current         | $I_{EBO2}$    | $V_{EB} = 4\text{ Volts}$                           |     |     | 50  | nA            |

### On Characteristics

Pulse Test: Pulse Width = 300  $\mu\text{s}$ , Duty Cycle  $\leq 2.0\%$

| Parameter                            | Symbol       | Test Conditions   | Min | Typ | Max | Units |
|--------------------------------------|--------------|---|-----|-----|-----|-------|
| DC Current Gain                      | $h_{FE1}$    | $I_C = 0.1\text{ mA}, V_{CE} = 10\text{ Volts}$                             | 40  |     | 175 |       |
|                                      | $h_{FE2}$    | $I_C = 1.0\text{ mA}, V_{CE} = 10\text{ Volts}$                             | 40  |     |     |       |
|                                      | $h_{FE3}$    | $I_C = 10\text{ mA}, V_{CE} = 10\text{ Volts}$                              | 40  |     |     |       |
|                                      | $h_{FE4}$    | $I_C = 150\text{ mA}, V_{CE} = 10\text{ Volts}$                             | 40  |     |     |       |
|                                      | $h_{FE5}$    | $I_C = 500\text{ mA}, V_{CE} = 10\text{ Volts}$                             | 40  |     |     |       |
|                                      | $h_{FE6}$    | $I_C = 10\text{ mA}, V_{CE} = 10\text{ Volts}$<br>$T_A = -55^\circ\text{C}$ | 20  |     |     |       |
| Base-Emitter Saturation Voltage      | $V_{BEsat1}$ | $I_C = 150\text{ mA}, I_B = 15\text{ mA}$                                   | 0.6 |     | 1.3 | Volts |
|                                      | $V_{BEsat2}$ | $I_C = 500\text{ mA}, I_B = 50\text{ mA}$                                   |     |     | 2.6 |       |
| Collector-Emitter Saturation Voltage | $V_{CEsat1}$ | $I_C = 150\text{ mA}, I_B = 15\text{ mA}$                                   |     |     | 0.4 | Volts |
|                                      | $V_{CEsat2}$ | $I_C = 500\text{ mA}, I_B = 50\text{ mA}$                                   |     |     | 1.6 |       |

### Dynamic Characteristics

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

### Switching Characteristics

|                         |           |  |  |  |     |    |
|-------------------------|-----------|--|--|--|-----|----|
| Saturated Turn-On Time  | $t_{on}$  |  |  |  | 45  | ns |
| Saturated Turn-Off Time | $t_{off}$ |  |  |  | 300 | ns |