

Description

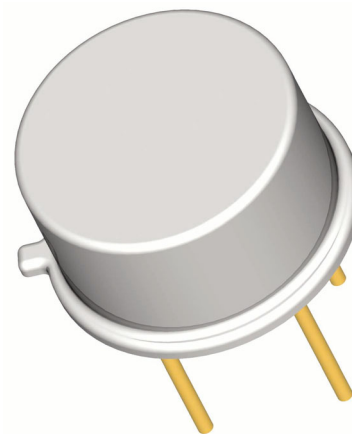
Semicoa Semiconductors offers:

- Screening and processing per MIL-PRF-19500 Appendix E
- JAN level (2N2218J)
- JANTX level (2N2218JX)
- JANTXV level (2N2218JV)
- 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-39 metal can
- Also available in chip configuration
- Chip geometry 0400
- Reference document:
MIL-PRF-19500/251

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} | 30 | Volts |
| Collector-Base Voltage | V_{CBO} | 60 | Volts |
| Emitter-Base Voltage | V_{EBO} | 5 | Volts |
| Collector Current, Continuous | I_C | 800 | mA |
| Power Dissipation, $T_A = 25^{\circ}\text{C}$ Derate linearly above 25°C | P_T | 0.8 4.6 | W mW/ $^{\circ}\text{C}$ |
| Power Dissipation, $T_C = 25^{\circ}\text{C}$ Derate linearly above 25°C | P_T | 3.0 17.0 | W mW/ $^{\circ}\text{C}$ |
| Operating Junction Temperature | T_J | -55 to +200 | $^{\circ}\text{C}$ |
| Storage Temperature | T_{STG} | -55 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 mA | 30 | | | Volts |
| Collector-Base Cutoff Current | I _{CBO1} | V _{CB} = 60 Volts | | | 10 | μA |
| Collector-Base Cutoff Current | I _{CBO2} | V _{CB} = 50 Volts | | | 10 | nA |
| Collector-Base Cutoff Current | I _{CBO3} | V _{CB} = 50 Volts, T _A = 150 ⁰ C | | | 10 | μA |
| Collector-Emitter Cutoff Current | I _{CES} | V _{CE} = 30 Volts | | | 10 | nA |
| Emitter-Base Cutoff Current | I _{EBO1} | V _{EB} = 5 Volts | | | 10 | μA |
| Emitter-Base Cutoff Current | I _{EBO2} | V _{EB} = 4 Volts | | | 10 | nA |
| On Characteristics | | | Pulse Test: Pulse Width = 300 μs, Duty Cycle ≤ 2.0% | | | |
| Parameter | Symbol | Test Conditions | Min | Typ | Max | Units |
| DC Current Gain | h _{FE1} | I _C = 0.1 mA, V _{CE} = 10 Volts | 35 | | 325 | |
| | h _{FE2} | I _C = 1.0 mA, V _{CE} = 10 Volts | 50 | | | |
| | h _{FE3} | I _C = 10 mA, V _{CE} = 10 Volts | 75 | | | |
| | h _{FE4} | I _C = 150 mA, V _{CE} = 10 Volts | 100 | | 300 | |
| | h _{FE5} | I _C = 500 mA, V _{CE} = 10 Volts | 30 | | | |
| | h _{FE6} | I _C = 10 mA, V _{CE} = 10 Volts T _A = -55 ⁰ C | 15 | | | |
| Base-Emitter Saturation Voltage | V _{BEsat1} | I _C = 150 mA, I _B = 15 mA | 0.6 | | 1.3 | Volts |
| | V _{BEsat2} | I _C = 500 mA, I _B = 50 mA | | | 2.6 | |
| Collector-Emitter Saturation Voltage | V _{CEsat1} | I _C = 150 mA, I _B = 15 mA | | | 0.4 | Volts |
| | V _{CEsat2} | I _C = 500 mA, I _B = 50 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 Volts, I _C = 20 mA, f = 100 MHz | 2.5 | | 12 | |
| Small Signal Short Circuit Forward Current Transfer Ratio | h _{FE} | V _{CE} = 10 Volts, I _C = 1 mA, f = 1 kHz | 50 | | | |
| Open Circuit Output Capacitance | C _{OBO} | V _{CB} = 10 Volts, I _E = 0 mA, 100 kHz < f < 1 MHz | | | 8 | pF |
| Open Circuit Input Capacitance | C _{IBO} | V _{EB} = 0.5 Volts, I _C = 0 mA, 100 kHz < f < 1 MHz | | | 25 | pF |
| Pulse Characteristics | | | | | | |
| Saturated Turn-On Time | t _{ON} | | | | 40 | ns |
| Saturated Turn-Off Time | t _{OFF} | | | | 250 | ns |