

Description

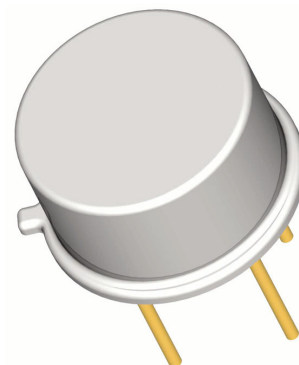
SEMICOA Corporation offers:

- Screening and processing per MIL-PRF-19500 Appendix E
- JAN level (2N3735J)
- JANTX level (2N3735JX)
- JANTXV level (2N3735JV)
- JANS level (2N3735JS)
- 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 switching transistor
- Low power
- NPN silicon transistor



Features

- Hermetically sealed TO-39 metal can
- Also available in chip configuration
- Chip geometry 0806
- Reference document: MIL-PRF-19500/395

Benefits

- Qualification Levels: JAN, JANTX, JANTXV, JANS and JANSR
- Radiation testing available

| Absolute Maximum Ratings | | T _C = 25°C unless otherwise specified | |
|--|--------------------------------------|--|------------|
| Parameter | Symbol | Rating | Unit |
| Collector-Emitter Voltage | V _{CEO} | 40 | Volts |
| Collector-Base Voltage | V _{CBO} | 75 | Volts |
| Emitter-Base Voltage | V _{EBO} | 5 | Volts |
| Collector Current, Continuous | I _C | 1.5 | A |
| Power Dissipation, T _A = 25°C Derate linearly above 25°C | P _T | 1 5.71 | W mW/°C |
| Power Dissipation, T _C = 25°C Derate linearly above 25°C | P _T | 2.9 16.6 | W mW/°C |
| Thermal Resistance | R _{θJA} R _{θJC} | 175 .06 | °C/W |
| Operating Junction Temperature | T _J | -65 to +200 | °C |
| Storage Temperature | T _{STG} | -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 | $V_{(BR)CEO}$ | $I_C = 10\text{ mA}$ | 40 | | | Volts |
| Collector-Base Cutoff Current | I_{CBO1} | $V_{CB} = 75\text{ Volts}$ | | 10 | | μA |
| | I_{CBO2} | $V_{CB} = 30\text{ Volts}$ | | 250 | | nA |
| Collector-Emitter Cutoff Current | I_{CEX1} | $V_{CE} = 30\text{ Volts}, V_{EB} = 2\text{ Volts}$ | | | 200 | nA |
| | I_{CEX2} | $V_{CE} = 30\text{ Volts}, V_{EB} = 2\text{ Volts}, T_A = 150^\circ\text{C}$ | | | 250 | μA |
| Emitter-Base Cutoff Current | I_{EBO1} | $V_{EB} = 5\text{ Volts}$ | | | 10 | μA |
| | I_{EBO2} | $V_{EB} = 4\text{ Volts}$ | | | 100 | 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} | $I_C = 10\text{ mA}, V_{CE} = 1\text{ Volts}$ | 35 | | | |
| | h_{FE2} | $I_C = 150\text{ mA}, V_{CE} = 1\text{ Volts}$ | 40 | | | |
| | h_{FE3} | $I_C = 500\text{ mA}, V_{CE} = 1\text{ Volts}$ | 40 | | 140 | |
| | h_{FE4} | $I_C = 1\text{ A}, V_{CE} = 1.5\text{ Volts}$ | 20 | | 80 | |
| | h_{FE5} | $I_C = 1.5\text{ A}, V_{CE} = 5\text{ Volts}$ | 20 | | | |
| | h_{FE6} | $I_C = 500\text{ mA}, V_{CE} = 1\text{ Volts}, T_A = -55^\circ\text{C}$ | 15 | | | |
| Base-Emitter Saturation Voltage | V_{BEsat1} | $I_C = 10\text{ mA}, I_B = 1\text{ mA}$ | | | 0.8 | Volts |
| | V_{BEsat2} | $I_C = 150\text{ mA}, I_B = 15\text{ mA}$ | | | 1.0 | |
| | V_{BEsat3} | $I_C = 500\text{ mA}, I_B = 50\text{ mA}$ | | | 1.2 | |
| | V_{BEsat4} | $I_C = 1\text{ A}, I_B = 100\text{ mA}$ | 0.9 | | 1.4 | |
| Collector-Emitter Saturation Voltage | V_{CEsat1} | $I_C = 10\text{ mA}, I_B = 1\text{ mA}$ | | | 0.2 | Volts |
| | V_{CEsat2} | $I_C = 150\text{ mA}, I_B = 15\text{ mA}$ | | | 0.3 | |
| | V_{CEsat3} | $I_C = 500\text{ mA}, I_B = 50\text{ mA}$ | | | 0.5 | |
| | V_{CEsat4} | $I_C = 1\text{ A}, I_B = 100\text{ mA}$ | | | 0.9 | |

Dynamic Characteristics

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Units |
|--|------------|---|-----|-----|-----|-------|
| Magnitude – Common Emitter, Short Circuit Forward Current Transfer Ratio | $ h_{FE} $ | $V_{CE} = 10\text{ Volts}, I_C = 50\text{ mA}, f = 100\text{ MHz}$ | 2.5 | | 6.0 | |
| Open Circuit Output Capacitance | C_{OBO} | $V_{CB} = 10\text{ Volts}, I_E = 0\text{ mA}, 100\text{ kHz} < f < 1\text{ MHz}$ | | | 9 | pF |
| Open Circuit Input Capacitance | C_{IBO} | $V_{EB} = 0.5\text{ Volts}, I_C = 0\text{ mA}, 100\text{ kHz} < f < 1\text{ MHz}$ | | | 80 | pF |

Switching Characteristics

| | | | | | | |
|-------------------------|-----------|--|--|--|----|----|
| Delay Time | t_d | $V_{BE} = 2\text{ Volts}, I_C = 1\text{ A}, I_B = 100\text{ mA}$ | | | 8 | ns |
| Rise Time | t_r | $I_B = 100\text{ mA}$ | | | 40 | ns |
| Saturated Turn-Off Time | t_{OFF} | $I_C = 1\text{ A}, I_{B1} = I_{B2} = 100\text{ mA}$ | | | 60 | ns |