



Solid State Devices, Inc.

14830 Valley View Blvd * La Mirada, Ca 90638

Phone: (562) 404-7855 * Fax: (562) 404-1773

ssdi@ssdi-power.com * www.ssdi-power.com

SFT501 and SFT503 Series

5 AMP 200 Volts HIGH SPEED PNP Transistor

DESIGNER'S DATA SHEET

Part Number / Ordering Information ^{1/}

SFT501 — —
SFT503 — —

+ Screening ^{2/} — = Not Screen
TX = TX Level
TXV = TXV Level
S = S Level

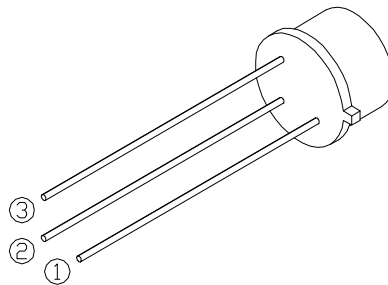
+ Package ^{3/} — = TO-5

Features:

- Radiation Tolerant
- Fast Switching
- High Frequency, 50 MHz Typical
- BVCEO 150 Volts Min
- High Linear Gain
- Very Low Leakage and Saturation
- 200°C Operating Temperature
- Gold Eutectic Die Attach
- Designed for Complementary Use with SFT502 and SFT504

| Maximum Ratings | Symbol | Value | Units |
|--|-----------------|-------------|------------|
| Collector – Emitter Voltage | V_{CEO} | 150 | Volts |
| Collector – Base Voltage | V_{CBO} | 200 | Volts |
| Emitter – Base Voltage | V_{EBO} | 7 | Volts |
| Continues Collector Current | I_C | 5 | Amps |
| Base Current | I_B | 1 | Amps |
| Power Dissipation @ TC = 50°C Derate above 50°C | P_D | 10 66.6 | W mW/°C |
| Operating & Storage Temperature | Top & Tstg | -65 to +200 | °C |
| Maximum Thermal Resistance Junction to Case | $R_{\theta JC}$ | 15 | °C/W |

TO-5



NOTE: All specifications are subject to change without notification. SCD's for these devices should be reviewed by SSDI prior to release.

B17BH

DATA SHEET #: TR0040C

DOC



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SFT501 and SFT503 Series

| Electrical Characteristic ^{4/} | Symbol | Min | Typ | Max | Units |
|--|---------------|-----|-------------|-------------|---------------|
| Collector – Emitter Breakdown Voltage $I_C = 50\text{mA}$ | BV_{CEO} | 150 | 200 | — | Volts |
| Collector – Base Breakdown Voltage $I_C = 200\mu\text{A}$ | BV_{CBO} | 200 | 275 | — | Volts |
| Emitter – Base Breakdown Voltage $I_E = 200\mu\text{A}$ | BV_{EBO} | 7 | 13 | — | Volts |
| Collector – Cutoff Current $V_{CE} = 100\text{V}$ | I_{CEO} | — | — | 1.0 | μA |
| Collector – Cutoff Current $V_{CB} = 100\text{V}$ | I_{CBO} | — | — | 500 | nA |
| Emitter – Cutoff Current $V_{EB} = 6\text{V}$ | I_{EBO} | — | — | 500 | nA |
| DC Current Gain * | | | | | |
| SFT501 $V_{CE} = 5\text{V}, I_C = 50\text{mA}$ | h_{FE} | 20 | — | — | — |
| $V_{CE} = 5\text{V}, I_C = 2.5\text{A}$ | | 30 | — | — | |
| SFT503 $V_{CE} = 5\text{V}, I_C = 5\text{A}$ | | 20 | 70 | — | |
| $V_{CE} = 5\text{V}, I_C = 50\text{mA}$ | | 50 | — | — | |
| $V_{CE} = 5\text{V}, I_C = 2.5\text{A}$ | | 50 | — | — | |
| $V_{CE} = 5\text{V}, I_C = 5\text{A}$ | | 40 | 70 | — | |
| Collector – Emitter Saturation Voltage * $I_C = 2.5\text{A}, I_B = 250\text{mA}$ $I_C = 5.0\text{A}, I_B = 500\text{mA}$ | $V_{CE(Sat)}$ | — | 0.35 0.6 | 0.75 1.5 | Volts |
| Base – Emitter Saturation Voltage * $I_C = 2.5\text{A}, I_B = 250\text{mA}$ $I_C = 5.0\text{A}, I_B = 500\text{mA}$ | $V_{BE(Sat)}$ | — | 1.0 1.2 | 1.3 1.5 | Volts |
| Current Gain Bandwidth Product $V_{CE} = 5\text{V}, I_C = 0.5\text{A}, f = 10\text{MHz}$ | f_T | 40 | 55 | — | MHz |
| Output Capacitance $V_{CB} = 10\text{V}, I_E = 0\text{A}, f = 1\text{MHz}$ | c_{ob} | — | 130 | 225 | pF |
| Input Capacitance $V_{BE} = 10\text{V}, I_C = 0\text{A}, f = 1\text{MHz}$ | C_{ib} | — | 450 | 600 | pF |
| Delay Time | t_d | — | 25 | 50 | nsec |
| Rise Time | t_r | — | 40 | 250 | nsec |
| Storage Time | t_s | — | 320 | 600 | nsec |
| Fall Time | t_f | — | 130 | 300 | nsec |

NOTES:

* Pulse Test: Pulse Width = 300 μsec , Duty Cycle = 2%

1/ For Ordering Information, Price, and Availability Contact Factory.

2/ Screening per MIL-PRF-19500

3/ For Package Outlines Contact Factory.

4/ Unless Otherwise Specified, All Electrical Characteristics @25°C.

Available Part Numbers:

SFT501
SFT503

| PIN ASSIGNMENT | | | |
|----------------|---------|-------|--------------|
| Package | Pin 1 | Pin 2 | Pin 3 (Case) |
| TO-5 | Emitter | Base | Collector |
| | | | |
| | | | |