**Solid State Devices, Inc.**
14701 Firestone Blvd * La Mirada, Ca 90638
Phone: (562) 404-4474 * Fax: (562) 404-1773
ssdi@ssdi-power.com * www.ssdi-power.com

# SFT5333A

## 2 AMP, 100 Volts
## HIGH SPEED PNP TRANSISTOR

**DESIGNER'S DATA SHEET**

**Part Number / Ordering Information** [1/]

**SFT5333A** _ _

**Screening** [2/] __ = Not Screened
TX = TX Level
TXV = TXV Level
S = S Level

**Package** __ = TO-5

**Features:**
- **Radiation Tolerant**
- **Fast Switching, 150ns max t(on)**
- **High Frequency, fT 85MHz min.**
- **BVCEO 70 Volts min.**
- **Low Saturation Voltage**
- **200ºC Operating Temperature, Gold Eutectic Die Attach**
- **Designed for Complementary Use with SFT4300A**
- **TX, TXV, S-Level Screening Available** [2/] **- Consult Factory**

| Maximum Ratings [3/] | Symbol | Value | Units |
|---|---|---|---|
| **Collector – Emitter Voltage** | $V_{CEO}$ | 70 | Volts |
| **Collector – Base Voltage** | $V_{CBO}$ | 100 | Volts |
| **Emitter – Base Voltage** | $V_{EBO}$ | 6 | Volts |
| **Collector Current** | $I_C$ | 2 | Amps |
| **Base Current** | $I_B$ | 1 | Amps |
| **Total Device Dissipation** @ TC = 100ºC<br>Derate above 100ºC | $P_D$ | 15<br>150 | W<br>mW/ºC |
| **Operating & Storage Temperature** | Top & Tstg | -65 to +200 | ºC |
| **Maximum Thermal Resistance** Junction to Case | $R_{\theta JC}$ | 7 | ºC/W |

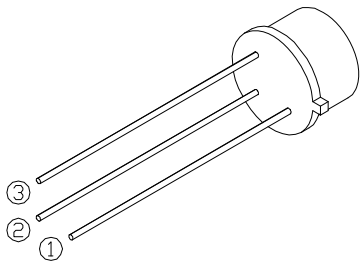
**NOTES:**
* Pulse Test: Pulse Width = 300µsec, Duty Cycle = 2%

1/ For ordering information, price, operating curves, and availability - Contact factory.

2/ Screening based on MIL-PRF-19500. Screening flows available on request.

3/ Unless Otherwise Specified, All Electrical Characteristics @25ºC.

**TO-5**



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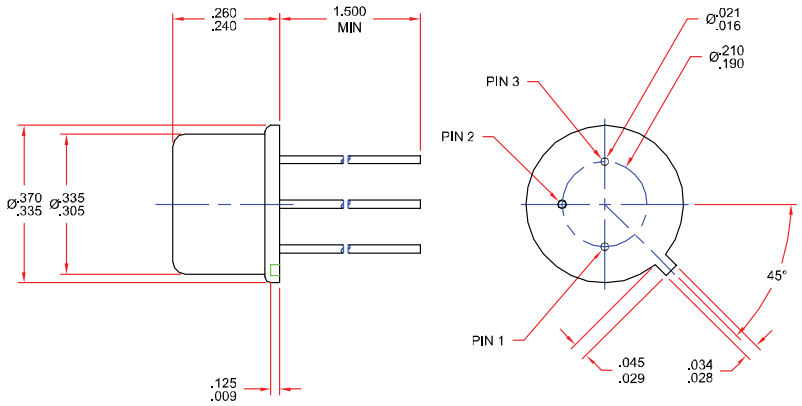
| Electrical Characteristic [4/] | | Symbol | Min | Max | Units |
|---|---|---|---|---|---|
| **Collector – Emitter Breakdown Voltage*** | $I_C$ = 30mA | $BV_{CEO}$ | 70 | — | Volts |
| **Collector – Base Breakdown Voltage** | $I_C$ = 200µA | $BV_{CBO}$ | 100 | — | Volts |
| **Emitter – Base Breakdown Voltage** | $I_E$ = 200µA | $BV_{EBO}$ | 6 | — | Volts |
| **Collector – Cutoff Current** | $V_{CB}$ = 90V, $T_C$= 25ºC<br>$V_{CB}$ = 90V, $T_C$= 100ºC | $I_{CBO}$ | —<br>— | 1<br>75 | µA |
| **Collector – Cutoff Current** | $V_{CE}$ = 40V | $I_{CEO}$ | — | 5 | µA |
| **Emitter – Cutoff Current** | $V_{EB}$ = 6V | $I_{EBO}$ | — | 1 | µA |
| **DC Current Gain *** ($V_{CE}$ = 5V) | $I_C$ = 1A<br>$I_C$ = 2A | $H_{FE}$ | 40<br>40 | 250<br>— | — |
| **Collector – Emitter Saturation Voltage *** | $I_C$ = 1A, $I_B$ = 100mA<br>$I_C$ = 2A, $I_B$ = 200mA | $V_{CE(Sat)}$ | —<br>— | 0.45<br>1.0 | Volts |
| **Base – Emitter Voltage *** | $I_C$ = 2A, $V_{CE}$ = 4$V_{DC}$ | $V_{BE(On)}$ | — | 1.5 | Volts |
| **Current Gain Bandwidth Product** | $V_{CE}$ = 10V, $I_C$ = 1$A_{DC}$, f = 10MHz | $f_T$ | 85 | — | MHz |
| **Output Capacitance** | $V_{CB}$ = 30V, $I_E$ = 0A, f = 1MHz | $C_{ob}$ | — | 75 | pF |
| **Input Capacitance** | $V_{BE}$ = 6V, $I_C$ = 0A, f = 1MHz | $C_{ib}$ | — | 300 | pF |
| **Turn On Time** | $V_{CC}$ = 20V, $I_C$ = 1$A_{DC}$,<br>$V_{EB(Off)}$ = 3.7V,<br>$I_{B1}$ = $I_{B2}$ = 100m$A_{DC}$, $R_L$= 20Ω | $t_{ON}$ | — | 150 | nsec |
| **Turn Off Time** | | $t_{OFF}$ | — | 450 | nsec |

## TO-5




PIN ASSIGNMENT

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