



**Solid State Devices, Inc.**

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## DESIGNER'S DATA SHEET

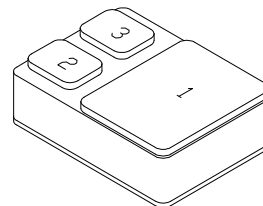
### FEATURES:

- $BV_{CEO}$  400 V minimum
- Fast Switching: 250 ns max  $t_{(on)}$
- High Frequency: minimum 50 MHz
- Low Saturation Voltage
- 200°C Operating, Gold Eutectic Die Attach
- Designed for Complementary Use with SFT6800

# SFT1192S.5

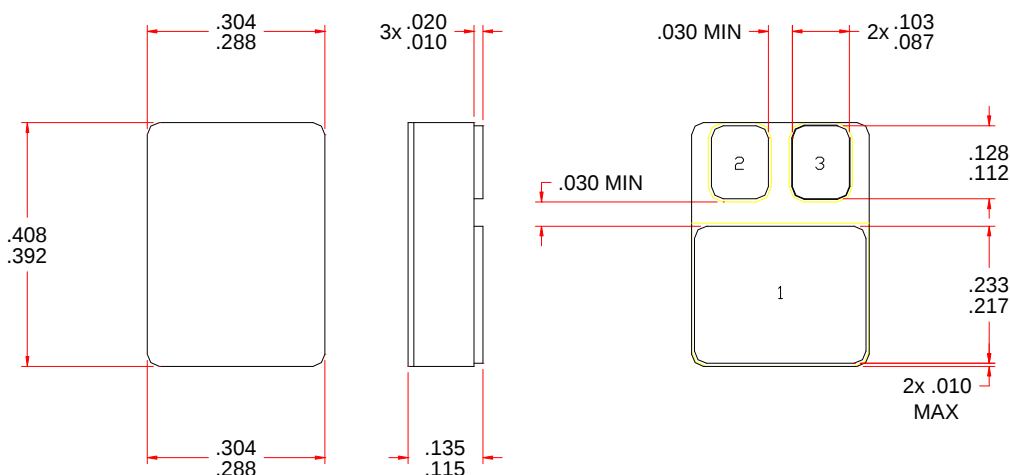
## 2 AMP 500 VOLTS PNP TRANSISTOR

SMD.5



| MAXIMUM RATINGS                                                            | Symbol            | Value       | Units      |
|----------------------------------------------------------------------------|-------------------|-------------|------------|
| Collector – Emitter Voltage                                                | $V_{CEO}$         | 400         | Volts      |
| Collector – Base Voltage                                                   | $V_{CBO}$         | 500         | Volts      |
| Emitter – Base Voltage                                                     | $V_{EB0}$         | 10          | Volts      |
| Collector Current                                                          | $I_C$             | 2           | Amps       |
| Base Current                                                               | $I_B$             | 0.5         | Amps       |
| Total Device Dissipation @ $T_C = 175^\circ\text{C}$<br>Derate above 175°C | $P_D$             | 5<br>200    | W<br>mW/°C |
| Operating and Storage Temperature Range                                    | $T_J$ & $T_{STG}$ | -65 to +200 | °C         |
| Thermal Resistance, Junction to Case                                       | $R_{qJC}$         | 5.0         | °C/W       |

**FIGURE 1: OUTLINE AND DIMENSIONS**



All dimensions are in inches  
Tolerances: (unless otherwise specified)  
XX:  $\pm 0.01$ "  
XXX:  $\pm 0.005$ "

**PACKAGE OUTLINE:**  
SMD.5  
**PINOUT:**  
Pin 1: Collector  
Pin 2: Emitter  
Pin 3: Base

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

**DATA SHEET #: TR0082A**

**DOC**



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| ELECTRICAL CHARACTERISTICS                                                                                                                                                   |                                                                                                                                 | Symbol        | Min | Max        | Units    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|---------------|-----|------------|----------|
| <b>Collector – Emitter Breakdown Voltage</b><br>( $I_C = 5 \text{ mA}$ )                                                                                                     |                                                                                                                                 | $BV_{CEO}$    | 400 | —          | V        |
| <b>Collector – Base Breakdown Voltage</b><br>( $I_C = 100 \mu A_{DC}$ )                                                                                                      |                                                                                                                                 | $BV_{CBO}$    | 500 | —          | V        |
| <b>Emitter – Base Breakdown Voltage</b><br>( $I_E = 20 \mu A_{DC}$ )                                                                                                         |                                                                                                                                 | $BV_{EBO}$    | 10  | —          | V        |
| <b>Collector Cutoff Current</b><br>( $V_{CB} = 450 V_{DC}$ )                                                                                                                 |                                                                                                                                 | $I_{CBO}$     | —   | 1.0        | mA       |
| <b>Collector Cutoff Current</b><br>( $V_{CE} = 400 V_{DC}$ , $V_{EB} = 1.5 V_{DC}$ )                                                                                         |                                                                                                                                 | $I_{CEV}$     | —   | 10         | mA       |
| <b>Emitter Cutoff Current</b><br>( $V_{EB} = 6 V_{DC}$ )                                                                                                                     |                                                                                                                                 | $I_{EBO}$     | —   | 10         | mA       |
| <b>DC Current Gain*</b><br>( $V_{CE} = 10 V_{DC}$ )                                                                                                                          | ( $I_C = 1.0 \text{ mA}_{DC}$ )                                                                                                 | $H_{FE}$      | 80  | —          |          |
|                                                                                                                                                                              | ( $I_C = 50 \text{ mA}_{DC}$ )                                                                                                  |               | 60  | —          |          |
|                                                                                                                                                                              | ( $I_C = 500 \text{ mA}_{DC}$ )                                                                                                 |               | 40  | —          |          |
| <b>Collector – Emitter Saturation Voltage*</b><br>( $I_C = 50 \text{ mA}_{DC}$ , $I_B = 5 \text{ mA}_{DC}$ )<br>( $I_C = 500 \text{ mA}_{DC}$ , $I_B = 50 \text{ mA}_{DC}$ ) |                                                                                                                                 | $V_{CE(SAT)}$ | —   | 0.4<br>1.0 | $V_{DC}$ |
| <b>Base – Emitter Saturation Voltage*</b><br>( $I_C = 50 \text{ mA}_{DC}$ , $I_B = 5 \text{ mA}_{DC}$ )<br>( $I_C = 500 \text{ mA}_{DC}$ , $I_B = 50 \text{ mA}_{DC}$ )      |                                                                                                                                 | $V_{BE(SAT)}$ | —   | 1.5<br>2.0 | $V_{DC}$ |
| <b>Current Gain Bandwidth Product</b><br>( $I_C = 70 \text{ mA}_{DC}$ , $V_{CE} = 30 V_{DC}$ , $f = 20 \text{ MHz}$ )                                                        |                                                                                                                                 | $f_T$         | 50  | —          | MHz      |
| <b>Output Capacitance</b><br>( $V_{CB} = 20 V_{DC}$ , $I_E = 0 A_{DC}$ , $f = 1.0 \text{ MHz}$ )                                                                             |                                                                                                                                 | $C_{ob}$      | —   | 75         | pf       |
| <b>Input Capacitance</b><br>( $V_{EB} = 2 V_{DC}$ , $I_C = 0 A_{DC}$ , $f = 1.0 \text{ MHz}$ )                                                                               |                                                                                                                                 | $C_{ib}$      | —   | 300        | pf       |
| <b>Turn On Time</b>                                                                                                                                                          | ( $V_{CC} = 100 V_{DC}$ , $I_C = 500 \text{ mA}_{DC}$ ,<br>$V_{EB(OFF)} = 3.7 V_{DC}$<br>$I_{B1} = I_{B2} = 50 \text{ mA}_{DC}$ | $t_{(on)}$    | —   | 250        | ns       |
| <b>Turn Off Time</b>                                                                                                                                                         |                                                                                                                                 | $t_{(off)}$   | —   | 2500       | ns       |

\* Pulse Test: Pulse Width = 300  $\mu\text{sec}$ , Duty Cycle = 2%

**For thermal derating curves and other characteristic curves please contact SSDI Marketing Department.**

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