



# Solid State Devices, Inc.

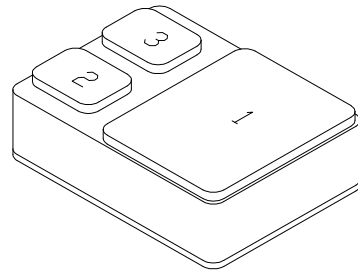
14830 Valley View Blvd \* La Mirada, Ca 90638

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

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

# SFT8600S.5

## 1 AMP 1000 Volts NPN Transistor



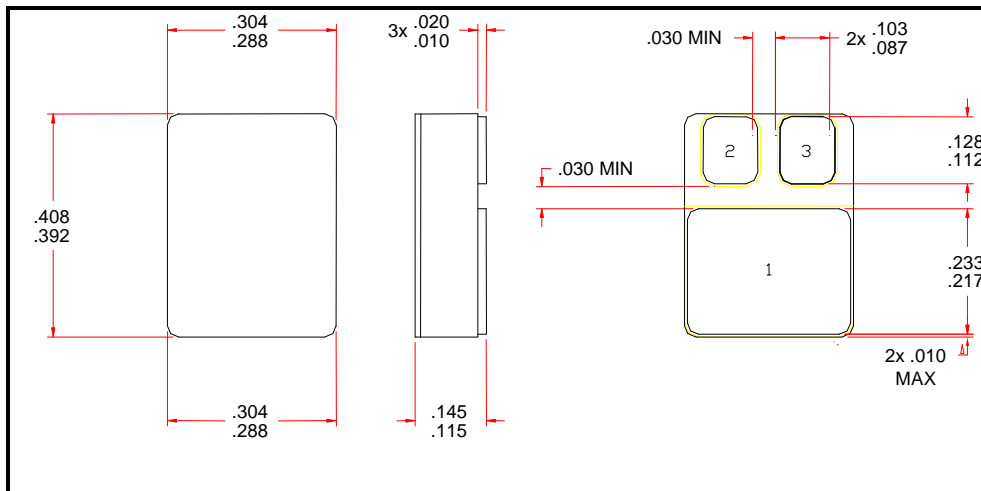
### DESIGNER'S DATA SHEET

#### FEATURES:

- BVCEO minimum 400 volts
- Very Low Saturation Voltage
- Very Low Leakage
- High Gain from 20 mA to 250 mA
- 200° C Operating, Gold Eutectic Die Attach
- Superior Performance over JEDEC 2N5010-15 Series
- High Speed Switching  $t_f = 0.4\mu\text{s}$  TYP

Maximum Ratings	Symbol	Value	Units
Collector – Emitter Voltage (RBE = 1KΩ)	$V_{CEO}$	400	V
	$V_{CER}$	1000	V
Collector – Base Voltage	$V_{CBO}$	1000	V
Emitter – Base Voltage	$V_{EBO}$	6	V
Collector Current	$I_C$	1	A
Base Current	$I_B$	100	mA
Total Device Dissipation @ TC = 25° C Derate above 175° C	$P_D$	5.0	W
		200	mW/°C
Operating and Storage Temperature	$T_j, T_{stg}$	-65 to +200	°C
Thermal Resistance, Junction to Case	$R_{\theta JC}$	5	°C/W

#### CASE OUTLINE: SMD.5



All dimensions are in inches  
Tolerances:  
(unless otherwise specified)  
XX: ±0.01"  
XXX: ±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 #: TR0083A**

**DOC**



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Electrical Characteristic	Symbol	Min	Max	Units	
<b>Collector – Emitter Breakdown Voltage</b> (IC= 10mAdc) (IC= 20μAdc, RBE = 1KΩ)	<b>BV<sub>CEO</sub></b> <b>BV<sub>CER</sub></b>	400 1000	—	V	
<b>Collector–Base Breakdown Voltage</b> (IC= 20μAdc)	<b>BV<sub>CBO</sub></b>	1000	—	V	
<b>Emitter–Base Breakdown Voltage</b> (IE= 20μAdc)	<b>BV<sub>EBO</sub></b>	6	—	V	
<b>Collector Cutoff Current</b> (VCB= 800V) (VCB= 800V @ TC= 150°)	<b>I<sub>CBO</sub></b>	—	10 500	μAdc	
<b>Collector Cutoff Current</b> (VCE= 400 Vdc)	<b>I<sub>CEO</sub></b>	—	10	μAdc	
<b>Emitter Cutoff Current</b> (VEB= 4V)	<b>I<sub>EBO</sub></b>	—	1	μAdc	
<b>DC Current Gain*</b> (IC= 100mAdc, VCE= 5Vdc, TC= -55°) (IC= 5mAdc, VCE= 5Vdc) (IC= 10mAdc, VCE= 5Vdc) (IC= 100mAdc, VCE= 5Vdc) (IC= 250mAdc, VCE= 5Vdc)	<b>H<sub>FE</sub></b>	10 30 40 20 15	200	—	
<b>Collector – Emitter Saturation Voltage*</b> (IC= 20mAdc, IB= 2mAdc) (IC= 100mAdc, IB=10mAdc)	<b>V<sub>CE(Sat)</sub></b>	— —	0.3 0.5	Vdc	
<b>Base – Emitter Saturation Voltage *</b> (IC= 20mAdc, IB= 2mAdc) (IC=100mAdc, IB=10mAdc)	<b>V<sub>BE(Sat)</sub></b>	— —	0.8 1.0	Vdc	
<b>Current Gain Bandwidth Product</b> (IC= 100mAdc, VCE= 10Vdc, f= 10MHz)	<b>f<sub>T</sub></b>	8.0	—	MHz	
<b>Output Capacitance</b> (VCB= 20Vdc, IE= 0 Adc, f= 1.0MHz)	<b>Cob</b>	—	15	pF	
Delay Time Rise Time Storage Time Fall Time	(VCC = 125Vdc, IC = 100 mAdc, IB1 = 20 mAdc, IB2 = 40 mAdc)	<b>td</b> <b>tr</b> <b>ts</b> <b>tf</b>	— — — —	50 150 3 800	nsec nsec μsec nsec

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

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

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