



# Solid State Devices, Inc.

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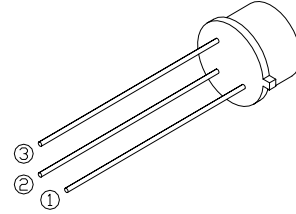
## DESIGNER'S DATA SHEET

### FEATURES:

- BVCEO to 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

# SFT8600

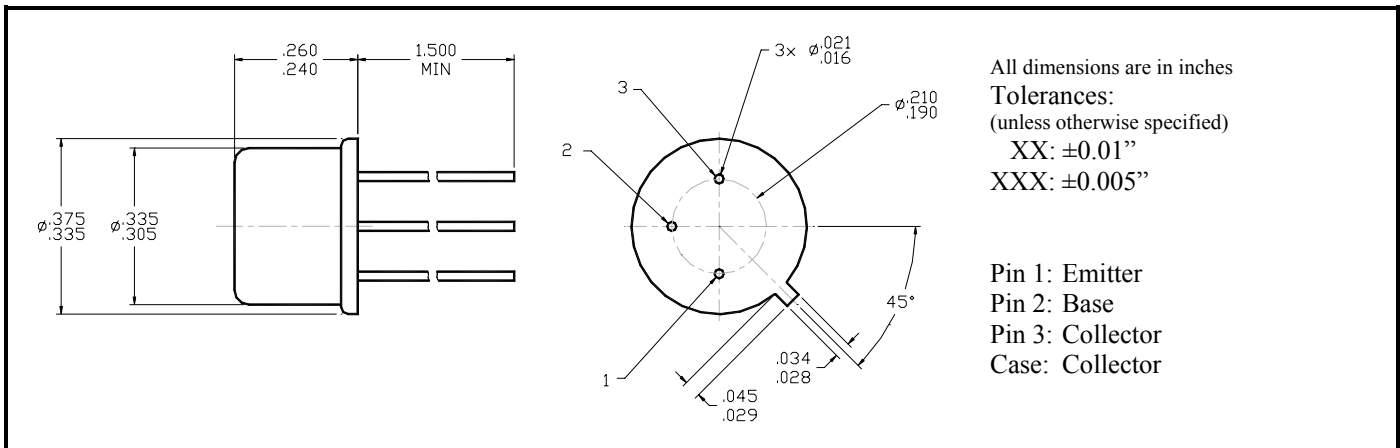
## 1 AMP 1000 Volts NPN Transistor



Maximum Ratings	Symbol	Value	Units
Collector – Emitter Voltage (RBE = 1KΩ)	V <sub>CEO</sub>	400	V
	V <sub>CER</sub>	1000	V
Collector – Base Voltage	V <sub>CBO</sub>	1000	V
Emitter – Base Voltage	V <sub>EBO</sub>	6	V
Collector Current	I <sub>C</sub>	1	A
Base Current	I <sub>B</sub>	100	A
Total Device Dissipation @ TC = 100° C Derate above 25° C	P <sub>D</sub>	2.0	W
		2.0	mW/°C
Operating and Storage Temperature	T <sub>j</sub> , T <sub>stg</sub>	-65 to +200	°C
Thermal Resistance, Junction to Case	R <sub>θJC</sub>	30	°C/W

### CASE OUTLINE: TO-5

## FIGURE 1 OUTLINE AND DIMENSIONS



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

**DATA SHEET #: XN0033 G**

**DOC**



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**SFT8600**

Electrical Characteristic	Symbol	Min	Max	Units	
<b>Collector – Emitter Breakdown Voltage</b> (IC= 10mA <sub>dc</sub> ) (IC= 20μA <sub>dc</sub> , RBE = 1KΩ)	<b>BV<sub>CEO</sub></b> <b>BV<sub>CER</sub></b>	400 1000	—	V	
<b>Collector–Base Breakdown Voltage</b> (IC= 20μA <sub>dc</sub> )	<b>BV<sub>CBO</sub></b>	1000	—	V	
<b>Emitter–Base Breakdown Voltage</b> (IE= 20μA <sub>dc</sub> )	<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	μA <sub>dc</sub>	
<b>Collector Cutoff Current</b> (VCE= 400 V <sub>dc</sub> )	<b>I<sub>CEO</sub></b>	—	10	μA <sub>dc</sub>	
<b>Emitter Cutoff Current</b> (VEB= 4V)	<b>I<sub>EBO</sub></b>	—	1	μA <sub>dc</sub>	
<b>DC Current Gain*</b> (IC= 100mA <sub>dc</sub> , VCE= 5V <sub>dc</sub> , TC= -55°) (IC= 5mA <sub>dc</sub> , VCE= 5V <sub>dc</sub> ) (IC= 10mA <sub>dc</sub> , VCE= 5V <sub>dc</sub> ) (IC= 100mA <sub>dc</sub> , VCE= 5V <sub>dc</sub> ) (IC= 250mA <sub>dc</sub> , VCE= 5V <sub>dc</sub> )	<b>h<sub>FE</sub></b>	10 30 40 20 15	200	—	
<b>Collector – Emitter Saturation Voltage*</b> (IC= 20mA <sub>dc</sub> , IB= 2mA <sub>dc</sub> ) (IC= 100mA <sub>dc</sub> , IB=10mA <sub>dc</sub> )	<b>V<sub>CE(Sat)</sub></b>	— —	0.3 0.5	V <sub>dc</sub>	
<b>Base – Emitter Saturation Voltage *</b> (IC= 20mA <sub>dc</sub> , IB= 2mA <sub>dc</sub> ) (IC=100mA <sub>dc</sub> , IB=10mA <sub>dc</sub> )	<b>V<sub>BE(Sat)</sub></b>	— —	0.8 1.0	V <sub>dc</sub>	
<b>Current Gain Bandwidth Product</b> (IC= 100mA <sub>dc</sub> , VCE= 10V <sub>dc</sub> , f= 10MHz)	<b>f<sub>T</sub></b>	8.0	—	MHz	
<b>Output Capacitance</b> (VCB= 20V <sub>dc</sub> , IE= 0 A <sub>dc</sub> , f= 1.0MHz)	<b>C<sub>ob</sub></b>	—	15	pF	
Delay Time Rise Time Storage Time Fall Time	(VCC = 125V <sub>dc</sub> , IC = 100 mA <sub>dc</sub> , IB1 = 20 mA <sub>dc</sub> , IB2 = 40 mA <sub>dc</sub> )	<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.**