



**Solid State Devices, Inc.**

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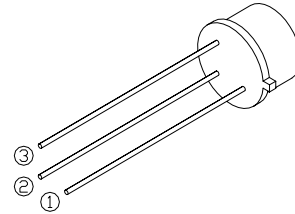
**DESIGNER'S DATA SHEET**

**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**

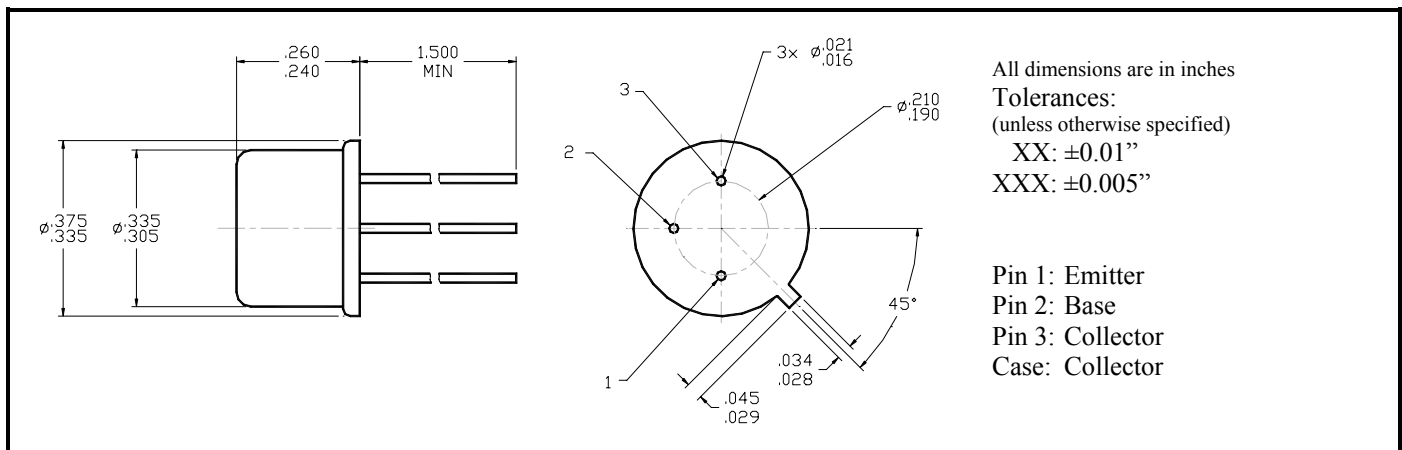
**1 AMP  
1000 Volts  
NPN Transistor**



Maximum Ratings	Symbol	Value	Units
<b>Collector – Emitter Voltage</b> (RBE = 1KΩ)	$V_{CEO}$ $V_{CER}$	400 1000	V
<b>Collector – Base Voltage</b>	$V_{CBO}$	1000	V
<b>Emitter – Base Voltage</b>	$V_{EBO}$	6	V
<b>Collector Current</b>	$I_C$	1	A
<b>Base Current</b>	$I_B$	100	A
<b>Total Device Dissipation @ TC = 100° C</b> Derate above 25° C	$P_D$	2.0 2.0	W mW/°C
<b>Operating and Storage Temperature</b>	$T_j, T_{stg}$	-65 to +200	°C
<b>Thermal Resistance, Junction to Case</b>	$R_{\theta JC}$	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.**