



Solid State Devices, Inc.

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DESIGNER'S DATA SHEET

Part Number / Ordering Information ^{1/}

SFT8600

└─ Screening ^{2/}

 — = Not Screened

 TX = TX Level

 TXV = TXV Level

 S = S Level

└─ Package

 /5 = TO-5

SFT8600/5

1 AMP 1000 Volts NPN Transistor

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

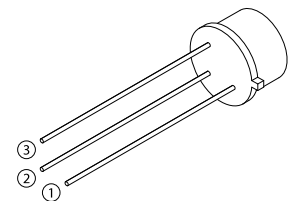
Maximum Ratings	Symbol	Value	Units
Collector – Emitter Voltage (RBE = 1KΩ)	V _{CEO} V _{CER}	400 1000	V
Collector – Base Voltage	V _{CB0}	1000	V
Emitter – Base Voltage	V _{EBO}	6	V
Collector Current	I _C	1	A
Base Current	I _B	100	mA
Total Device Dissipation @ TC = 100° C Derate above 25° C	P _D	3.3 33	W mW/°C
Operating and Storage Temperature	T _j , T _{stg}	-65 to +200	°C
Thermal Resistance, Junction to Case	R _{θJC}	30	°C/W

NOTES:

^{1/} For ordering information, price, operating curves, and availability - contact factory.

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

TO-5 (/5)



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

DATA SHEET #: XN0033J

DOC



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

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

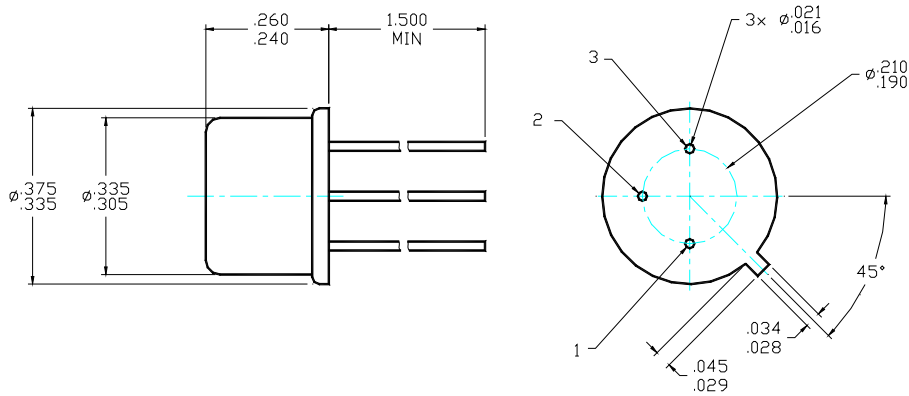


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CASE OUTLINE: TO-5

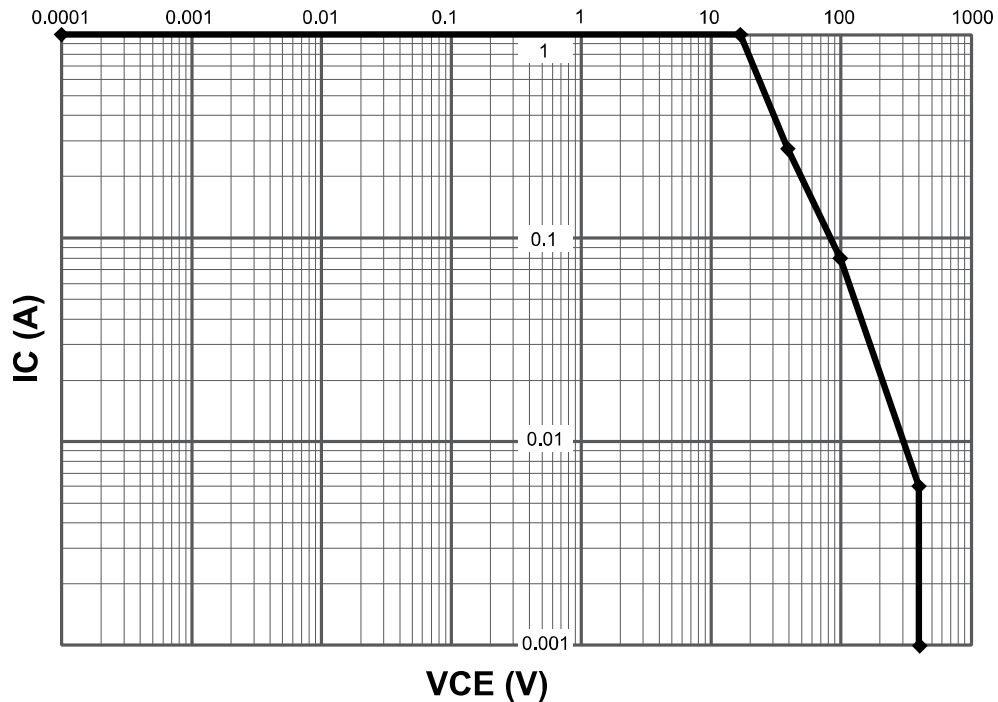
**FIGURE 1
 OUTLINE AND DIMENSIONS**



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

Pin 1: Emitter
 Pin 2: Base
 Pin 3: Collector
 Case: Collector

**FIGURE 2
 SAFE OPERATING AREA (t = 1 sec)**



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