



# Solid State Devices, Inc.

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# SFT3053/39 SFT3053A/39

## 0.7 AMP NPN TRANSISTOR 40 - 60 VOLTS

**DESIGNER'S DATA SHEET**

**Part Number / Ordering Information <sup>1/</sup>**

SFT3053 **A**

├── Screening<sup>2/</sup>  
     ├── = Not Screened  
     ├── TX = TX Level  
     ├── TXV = TXV Level  
     └── S = S Level

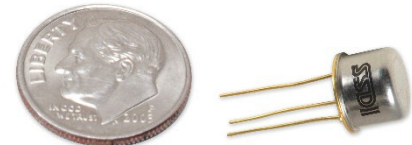
└── Package  
     /39 = TO-39

- Features:**
- Fast Switching
  - High Frequency
  - Low Saturation Voltage
  - Replacement for 2N3053 and 2N3053A
  - TX, TXV, and S Level Screening Available<sup>2/</sup>

Maximum Ratings <sup>3/</sup>	Symbol	Value	Unit
Collector – Emitter Voltage	SFT3053 SFT3053A	<b>V<sub>CEO</sub></b> 40 60	<b>V</b>
Collector – Base Voltage	SFT3053 SFT3053A	<b>V<sub>CBO</sub></b> 60 80	<b>V</b>
Emitter – Base Voltage		<b>V<sub>EBO</sub></b> 5.0	<b>V</b>
Collector Current		<b>I<sub>C</sub></b> 0.7	<b>A</b>
Total Device Dissipation T <sub>C</sub> = 25°C Derate above T <sub>C</sub> = 25°C		<b>P<sub>D</sub></b> 5.0 28.6	<b>W</b> <b>mW/°C</b>
Operating & Storage Temperature	<b>T<sub>J</sub> &amp; T<sub>STG</sub></b>	-65 to +200	<b>°C</b>
Thermal Resistance	<b>R<sub>θJC</sub></b>	35	<b>°C/W</b>

**NOTES:** \*Pulsed per MIL-STD-750.  
<sup>1/</sup> For ordering information, price, operating curves, and availability - contact factory.  
<sup>2/</sup> Screening based on MIL-PRF-19500. Screening flows available on request.  
<sup>3/</sup> Unless otherwise specified, maximum ratings/electrical characteristics at 25°C.

TO-39 (/39)



(dime used for size reference)



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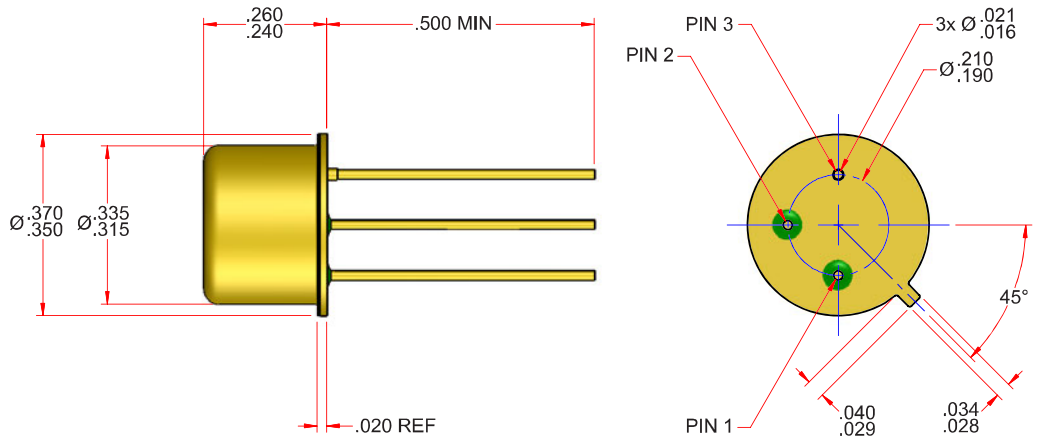
# SFT3053A/39

Electrical Characteristics <sup>3/</sup>	Symbol	Min	Typ	Max	Unit
<b>Collector – Emitter Breakdown Voltage*</b> $I_C = 100 \text{ mA}$	SFT3053 SFT3053A $BV_{CEO}$	40 60	- 100	- -	<b>V</b>
<b>Collector – Base Breakdown Voltage</b> $I_C = 100 \mu\text{A}$	SFT3053 SFT3053A $BV_{CBO}$	60 80	- 160	- -	<b>V</b>
<b>Collector – Emitter Breakdown Voltage*</b> $I_C = 100 \text{ mA}, R_{BE} = 10 \Omega$	SFT3053 SFT3053A $BV_{CER}$	50 60	- 100	- -	<b>V</b>
<b>Emitter – Base Breakdown Voltage</b> $I_E = 100 \mu\text{A}$	$BV_{EBO}$	5.0	7.0	-	<b>V</b>
<b>Collector – Base Cutoff Current</b> $V_{CB} = 80 \text{ V}, T_C = 25^\circ\text{C}$	$I_{CBO}$	-	60	500	<b>nA</b>
<b>Collector – Emitter Cutoff Current</b> $V_{EB} = 1.5 \text{ V}$	SFT3053: $V_{CE} = 30 \text{ V}$ SFT3053A: $V_{CE} = 60 \text{ V}$ $I_{CEX}$	- -	25 25	250 250	<b>nA</b>
<b>Emitter Cutoff Current</b> $V_{EB} = 4 \text{ V}$	$I_{EBO}$	-	20	250	<b>nA</b>
<b>DC Current Gain*</b> $I_C = 150 \text{ mA}, V_{CE} = 2.5 \text{ V}$ $I_C = 150 \text{ mA}, V_{CE} = 10 \text{ V}$	$h_{FE}$	25 50	- -	- 250	
<b>Collector – Emitter Saturation Voltage*</b> $I_C = 150 \text{ mA}, I_B = 15 \text{ mA}$	SFT3053 SFT3053A $V_{CE(SAT)}$	- -	- 0.13	1.4 0.3	<b>V</b>
<b>Base – Emitter Saturation Voltage</b> $I_C = 150 \text{ mA}, I_B = 15 \text{ mA}$	SFT3053 SFT3053A $V_{BE(SAT)}$	- 0.6	- 0.8	1.7 1.0	<b>V</b>
<b>Output Capacitance</b> $V_{CB} = 10 \text{ V}, I_E = 0 \text{ A}, f = 1.0 \text{ MHz}$	$C_{obo}$	-	11	15	<b>pF</b>
<b>Input Capacitance</b> $V_{BE} = 0.5 \text{ V}, I_C = 0 \text{ A}, f = 1.0 \text{ MHz}$	$C_{ibo}$	-	70	80	<b>pF</b>

### CASE OUTLINE: TO-39

#### Pin Assignment (Standard)

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



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3/ Unless otherwise specified, maximum ratings/electrical characteristics at  $25^\circ\text{C}$ .

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

**DATA SHEET #: TR0161A**

**DOCX**