



# Solid State Devices, Inc.

14701 Firestone Blvd \* La Mirada, CA 90638  
Phone: (562) 404-7855 \* Fax: (562) 404-1773  
ssdi@ssdi-power.com \* www.ssdi-power.com

# SFT4030 - SFT4033

## 1 Amp, 60 - 80 Volts High Voltage PNP Transistor

**DESIGNER'S DATA SHEET**

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

SFT403

Screening<sup>2/</sup>  
 \_\_\_ = No Screening  
 TX = TX Level  
 TXV = TXV Level  
 S = S Level

Package<sup>3/</sup>  
 S.22 = SMD.22  
 /39 = TO-39

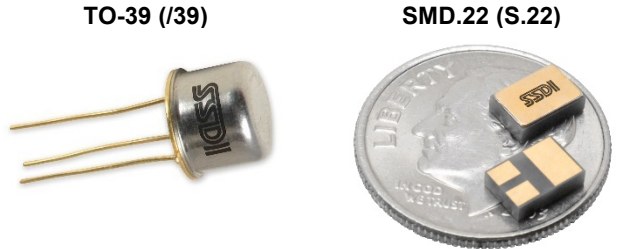
Voltage  
 0 or 2 = 60 V  
 1 or 3 = 80 V

- Features:**
- BV<sub>CER</sub> 60 - 80 Volts
  - Low Leakage at High Temperature
  - High Linear Gain, Low Saturation Voltage
  - 200°C Operating Temperature
  - Gold Eutectic Die Attach
  - TX, TXV, and S-Level Screening Available
  - Replacement for 2N4030 - 2N4033

Maximum Ratings <sup>4/</sup>	Symbol	SFT4030	SFT4031	SFT4032	SFT4033	Unit
Collector – Emitter Voltage	V <sub>CEO</sub>	60	80	60	80	V
Collector – Base Voltage	V <sub>CBO</sub>	60	80	60	80	V
Emitter – Base Voltage	V <sub>EBO</sub>	5				V
Collector Current	I <sub>C</sub>	1				A
Total Power Dissipation/ Derating	T <sub>C</sub> = 25°C T <sub>A</sub> = 25°C	4 – 22.8 0.8 – 4.6				W mW/°C
Operating & Storage Temperature	T <sub>J</sub> & T <sub>STG</sub>	-65 to +200				°C
Maximum Thermal Resistance (Junction to Case)	R <sub>θJC</sub>	90				°C/W
Maximum Thermal Resistance (Junction to Ambient)	R <sub>θJA</sub>	325				°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.
- 3/ For package outlines, see figure 1.
- 4/ Unless otherwise specified, maximum ratings / electrical characteristics at 25°C.



\*Dime used for size reference



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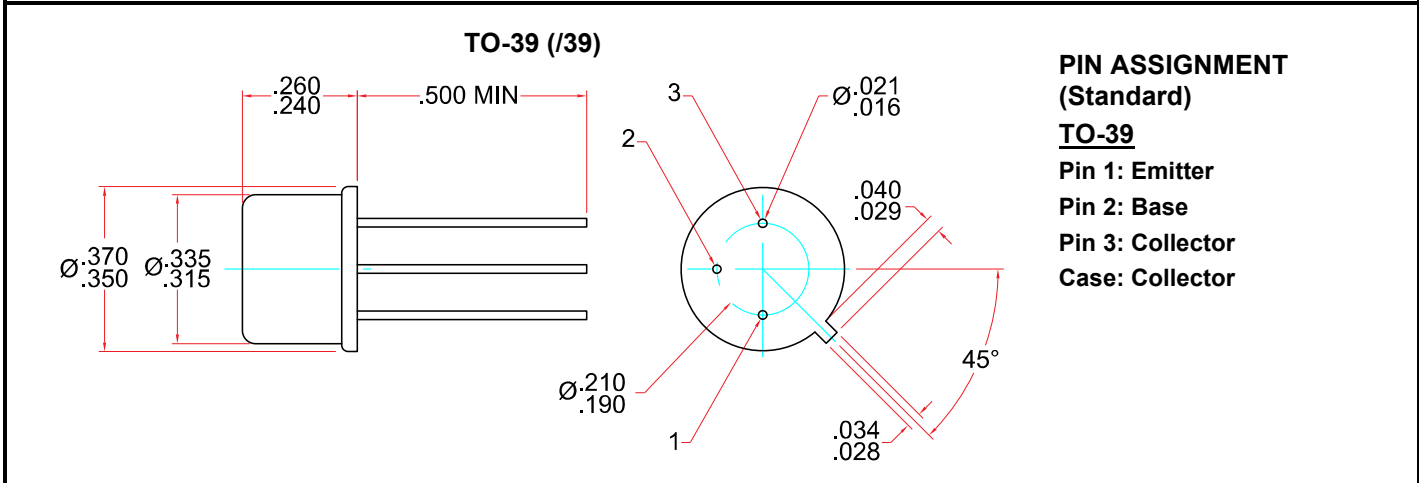
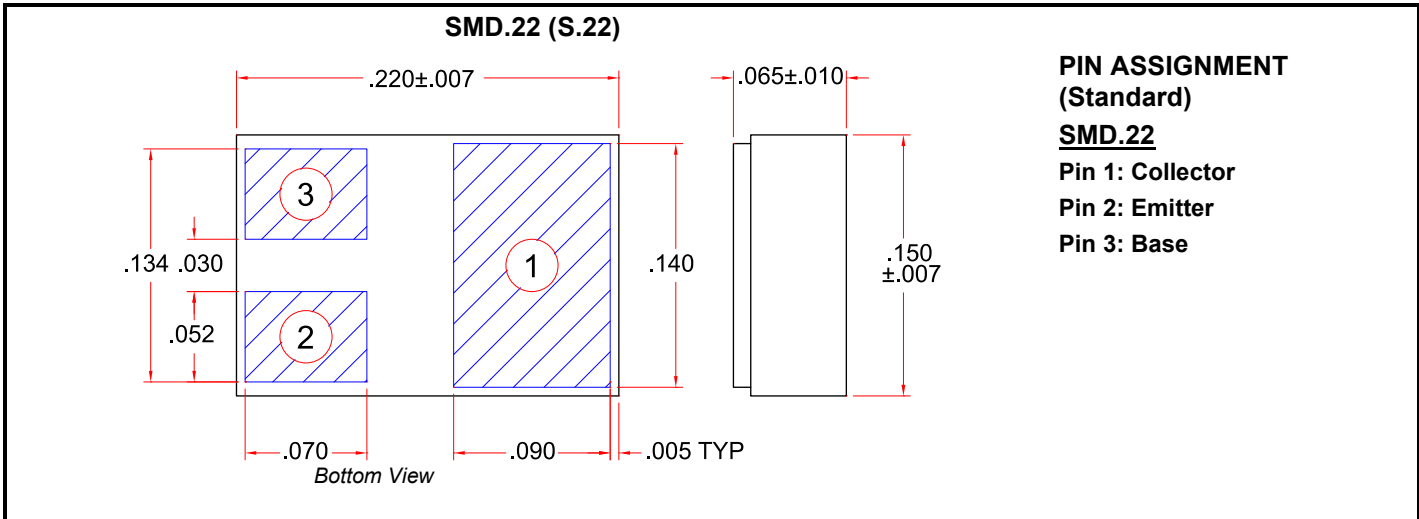
Electrical Characteristics <sup>4/</sup>		Symbol		Min	Typ	Max	Unit
<b>Collector – Emitter Breakdown Voltage</b>	$I_C = 10 \text{ mA}$	$BV_{CEO}$	SFT4030, 32 SFT4031, 33	60 80	- -	- -	V
<b>Collector – Base Breakdown Voltage*</b>	$I_C = 10 \mu\text{A}$	$BV_{CBO}$	SFT4030, 32 SFT4031, 33	60 80	- -	- -	V
<b>Emitter – Base Breakdown Voltage</b>	$I_E = 10 \mu\text{A}$	$BV_{EBO}$	all	5	-	-	V
<b>Collector Cutoff Current</b>	$V_{CB} = 50 \text{ V}, T_A = 25^\circ\text{C}$	$I_{CB01}$	SFT4030, 32 SFT4031, 33	- -	3 5	50 50	nA nA
	$V_{CB} = 60 \text{ V}, T_A = 25^\circ\text{C}$						
	$V_{CB} = 50 \text{ V}, T_A = 150^\circ\text{C}$	$I_{CB02}$	SFT4030, 32 SFT4031, 33	- -	- -	50 50	$\mu\text{A}$ $\mu\text{A}$
	$V_{CB} = 60 \text{ V}, T_A = 150^\circ\text{C}$						
<b>Emitter Cutoff Current</b>	$V_{EB} = 5 \text{ V}$	$I_{EBO}$	all	-	.001	10	$\mu\text{A}$
<b>DC Current Gain*</b>	$I_C = 0.1 \text{ mA}, V_{CE} = 5 \text{ V}$	$H_{FE}$	SFT4030, 31 SFT4032, 33	30 75	85 175	- -	
	$I_C = 100 \text{ mA}, V_{CE} = 5 \text{ V}$		SFT4030, 31 SFT4032, 33	40 100	80 180	120 300	
	$I_C = 500 \text{ mA}, V_{CE} = 5 \text{ V}$		SFT4030, 31 SFT4032, 33	25 70	65 130	- -	
	$I_C = 1 \text{ A}, V_{CE} = 5 \text{ V}$		SFT4030 SFT4031	15 10	45 45	- -	
			SFT4032 SFT4033	40 25	70 70	- -	
$I_C = 100 \text{ mA}, V_{CE} = 5 \text{ V}, T_A = -55^\circ\text{C}$	SFT4030, 31 SFT4032, 33	15 40	- -	- -			
<b>Collector-Emitter Saturation Voltage*</b>	$I_C = 150 \text{ mA}, I_B = 15 \text{ mA}$ $I_C = 500 \text{ mA}, I_B = 50 \text{ mA}$ $I_C = 1 \text{ A}, I_B = 100 \text{ mA}$	$V_{CE(SAT)}$	all	- - -	90 220 500	150 500 1000	mV
<b>Base-Emitter Saturation Voltage</b>	$I_C = 150 \text{ mA}, I_B = 15 \text{ mA}$ $I_C = 500 \text{ mA}, I_B = 50 \text{ mA}$ $I_C = 1 \text{ A}, I_B = 100 \text{ mA}$	$V_{BE(SAT)}$	all	- - -	0.82 0.90 -	0.9 1.1 1.2	V
<b>Current Gain Bandwidth Product*</b>	$I_C = 50 \text{ mA}, V_{CE} = 10 \text{ V}, f = 100 \text{ MHz}$	$f_T$	SFT4030, 31 SFT4032, 33	1 1.5	1.8 2.1	4 5	MHz
<b>Input Capacitance</b>	$V_{EB} = 0.5 \text{ V}, f = 1 \text{ MHz}$	$C_{ib}$	all	-	80	110	pF
<b>Output Capacitance</b>	$V_{CB} = 10 \text{ V}, f = 1 \text{ MHz}$	$C_{ob}$		-	12	20	
<b>Turn on Time</b>	$V_{CC} = 32 \text{ V}$	$t_{on}$	all	-	35	100	ns
<b>Storage Time</b>	$I_C = 500 \text{ mA}$	$t_s$		-	160	350	ns
<b>Fall Time</b>	$I_{B1} = I_{B2} = 50 \text{ mA}$	$t_f$		-	25	50	ns



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- Notes:** \* Pulse Test: Pulse Width = 300 μs. Duty Cycle = 2%.  
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