



**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

**DESIGNER'S DATA SHEET**

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

SFT5094  
 SFT5096

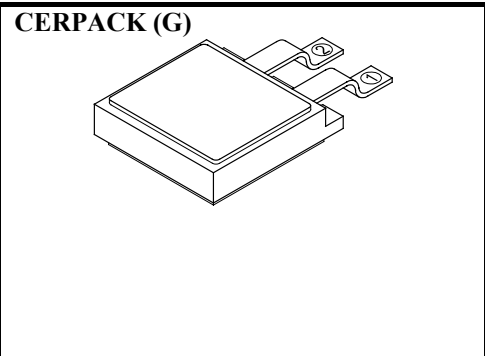
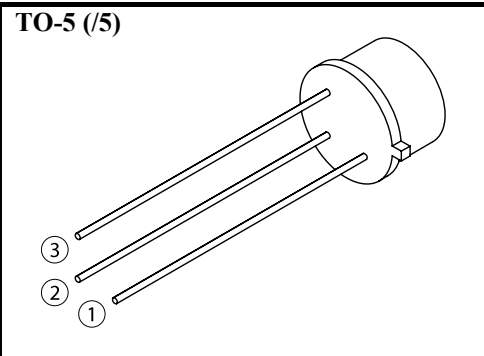
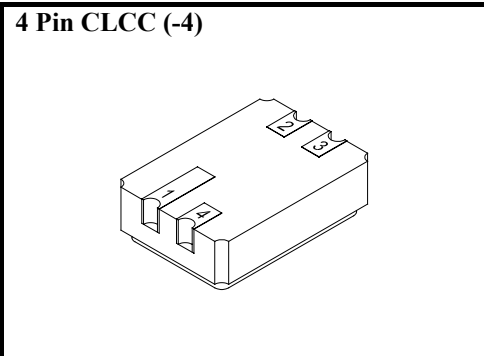
<sup>2/</sup> Screening      = No Screening  
                   TX = TX Level  
                   TXV = TXV Level  
                   S = S Level  
  
<sup>3/</sup> Package -4 = 4 Pin CLCC  
                   /5 = TO-5  
                   G = CERPACK

**SFT5094-4, SFT5094/5, SFT5094G  
 And  
 SFT5096-4, SFT5096/5, SFT5096G**

**1 AMP, 500 Volts  
 High Voltage PNP Transistor**

- Features:**
- BV<sub>CER</sub> to 500 Volts
  - Low Leakage at High Temperature
  - High Linear Gain, Low Saturation Voltage
  - 200°C Operating Temperature
  - Gold Eutectic Die Attach
  - TX, TXV, S-Level Screening Available
  - Designed for Complementary Use with SFT5015
  - Replacement for 2N5094 and 2N5096 with Lower Thermal Resistance
  - Available with TO-5, Cerpack and CLCC Cases

Maximum Ratings <sup>4/</sup>	Symbol	SFT5094	SFT5096	Units
Collector – Emitter Voltage (R <sub>BE</sub> = 1kΩ)	V <sub>CEO</sub>	400	450	Volts
	V <sub>CER</sub>	450	500	Volts
Collector – Base Voltage	V <sub>CBO</sub>	450	500	Volts
Emitter – Base Voltage	V <sub>EBO</sub>	6		Volts
Collector Current	I <sub>C</sub>	1.0		Amps
Base Current	I <sub>B</sub>	0.5		Amps
Total Power Dissipation (T <sub>C</sub> = 25°C) Derate above T <sub>C</sub> = 25°C (T <sub>A</sub> = 25°C)	P <sub>D</sub>	1.0		Watts
		0.4		Watts
		5.7		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>	4 Pin CLCC	175	°C/W
		TO-5	30	°C/W
		CERPACK	9	°C/W
Maximum Thermal Resistance (Junction to Ambient)	R <sub>θJA</sub>	4 Pin CLCC	440	°C/W
		TO-5	---	°C/W
		CERPACK	440	°C/W



**NOTES:** <sup>1/</sup> For Ordering Information, Price, Operating Curves, and Availability Contact Factory.  
<sup>2/</sup> Screened to MIL-PRF-19500.  
<sup>3/</sup> For Package Outlines, See Figure 1.  
<sup>4/</sup> Unless Otherwise Specified, Maximum Ratings/Electrical Characteristics at 25°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 #: TR0081B**

**DOC**



**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

**SFT5094-4, SFT5094/5, SFT5094G  
 And  
 SFT5096-4, SFT5096/5, SFT5096G**

Electrical Characteristics <sup>4/</sup>	Symbol	Min		Max	Units	
<b>Collector – Emitter Breakdown Voltage *</b>	(I <sub>C</sub> = 50 mA) <b>BV<sub>CEO</sub></b>	SFT5094	SFT5096	—	Volts	
	(I <sub>C</sub> = 100 μA, R <sub>BE</sub> = 1k Ω) <b>BV<sub>CER</sub></b>	400	450	—		
<b>Collector – Base Breakdown Voltage *</b>	(I <sub>C</sub> = 100 μA) <b>BV<sub>CBO</sub></b>	450	500	—	Volts	
<b>Emitter – Base Breakdown Voltage</b>	(I <sub>E</sub> = 50 μA) <b>BV<sub>EBO</sub></b>	6		—	Volts	
<b>Collector Cutoff Current</b>	(V <sub>CB</sub> = Rated, T <sub>A</sub> = 25°C) <b>I<sub>CBO1</sub></b>	—		1.0	μA	
	(V <sub>CB</sub> = Rated, T <sub>A</sub> = 100°C) <b>I<sub>CBO2</sub></b>	—		50		
<b>Emitter Cutoff Current</b>	(V <sub>EB</sub> = 6 V) <b>I<sub>EBO</sub></b>	—		1.0	μA	
<b>DC Current Gain *</b>	(I <sub>C</sub> = 1 mA, V <sub>CE</sub> = 10 V) <b>H<sub>FE</sub></b>	20		250		
	(I <sub>C</sub> = 25 mA, V <sub>CE</sub> = 10 V)	40		300		
	(I <sub>C</sub> = 100 mA, V <sub>CE</sub> = 10 V)	20		250		
<b>Collector-Emitter Saturation Voltage *</b>	(I <sub>C</sub> = 25 mA, I <sub>B</sub> = 2.5 mA) <b>V<sub>CE(SAT)</sub></b>	—		500	mV	
<b>Base-Emitter Saturation Voltage</b>	(I <sub>C</sub> = 25 mA, I <sub>B</sub> = 2.5 mA) <b>V<sub>BE(SAT)</sub></b>	—		1.0	Volts	
<b>Current Gain Bandwidth Product *</b>	(I <sub>C</sub> = 10 mA, V <sub>CE</sub> = 10 V, f = 10 MHz) <b>f<sub>T</sub></b>	25		—	MHz	
<b>Output Capacitance</b>	V <sub>CB</sub> = 20 V, I <sub>E</sub> = 0 A, f = 1.0MHz <b>C<sub>ob</sub></b>	—		10	pF	
<b>Turn on Delay Time</b>	V <sub>CC</sub> = 100 V I <sub>C</sub> = 100 mA I <sub>B1</sub> = I <sub>B2</sub> = 10 mA	<b>T<sub>d</sub></b>	—		500	ns
<b>Rise Time</b>		<b>T<sub>r</sub></b>	—		1200	ns
<b>Storage Time</b>		<b>T<sub>s</sub></b>	—		2.0	μs
<b>Fall Time</b>		<b>t<sub>f</sub></b>	—		500	ns

**Notes:** \* Pulse Test: Pulse Width = 300 μs. Duty Cycle = 2%.  
 1/ For Ordering Information, Price, Operating Curves, and Availability Contact Factory.  
 2/ Screened to MIL-PRF-19500.  
 3/ For Package Outlines, See Figure 1.  
 4/ Unless Otherwise Specified, Maximum Ratings/Electrical Characteristics at 25°C.

PIN ASSIGNMENT (Standard)			
Package	Collector	Emitter	Base
<b>4 Pin CLCC (-4)</b>	Pin 1	Pin 2	Pin 3
<b>TO-5 (/5)</b>	Pin 3	Pin 1	Pin 2
<b>CERPACK (G)</b>	CASE	Pin 1	Pin 2



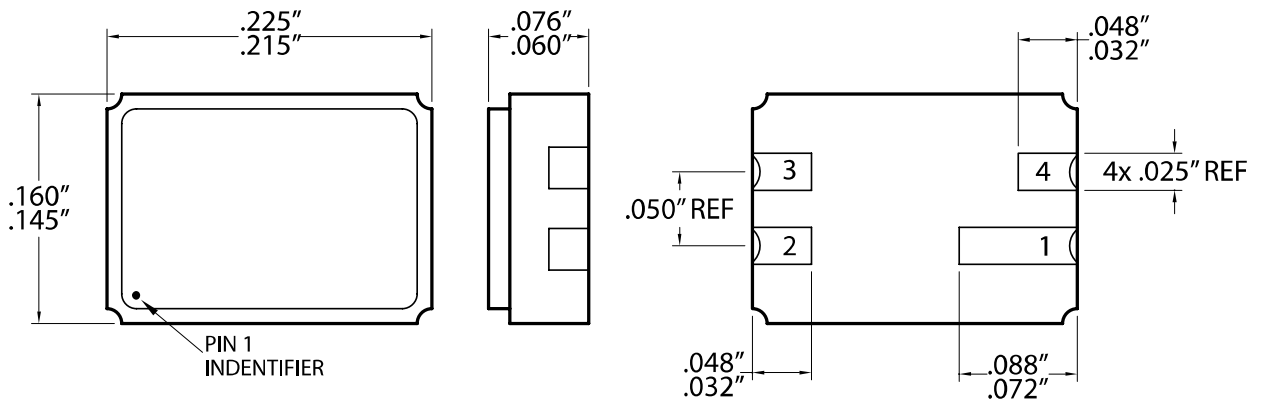
**Solid State Devices, Inc.**

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

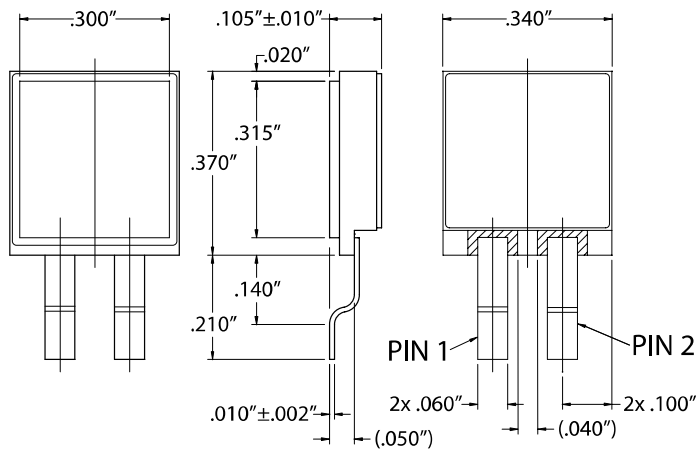
**SFT5094-4, SFT5094/5, SFT5094G  
 And  
 SFT5096-4, SFT5096/5, SFT5096G**

**FIGURE 1 – CASE OUTLINES**

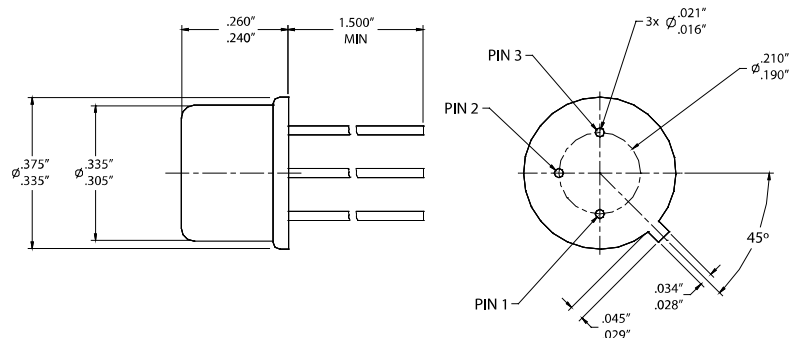
**4 Pin CLCC (-4):**



**CERPACK (G):**



**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 #: TR0081B**

**DOC**