



# Solid State Devices, Inc.

14701 Firestone Blvd \* La Mirada, CA 90638  
Phone: (562) 404-4474 \* Fax: (562) 404-1773  
ssdi@ssdi-power.com \* www.ssdi-power.com

## SFT2222A Series

## 800 mA 75 Volts NPN High Speed Transistor

### DESIGNER'S DATA SHEET

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

**SFT2222A**

┌ Screening<sup>2/</sup> \_\_\_ = Commercial  
 TX= TX Level  
 TXV= TXV Level  
 S= S Level

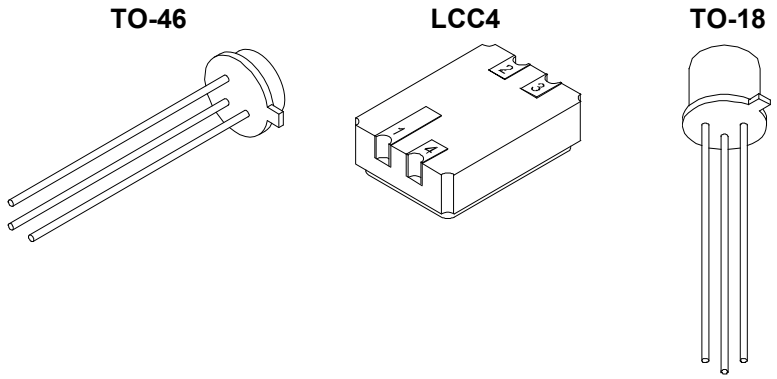
└ Package  
 -4 = LCC4  
 /18 = TO-18  
 /46 = TO-46

- Features:**
- High Speed Switching Transistor
  - Multiple Devices Reduce Board Space
  - High Power Dissipation: Up to 500 mW
  - Replacement for 2N2222A and 2N2222AUA
  - TX, TXV, S-Level Screening Available<sup>2/</sup>
  - PNP Complimentary Parts Available (SFT2907A)

Maximum Ratings <sup>3/</sup>	Symbol	Value	Units
Collector – Emitter Voltage	V <sub>CEO</sub>	50	Volts
Collector – Base Voltage	V <sub>CBO</sub>	75	Volts
Emitter – Base Voltage	V <sub>EBO</sub>	6	Volts
Continuous Collector Current	I <sub>C</sub>	800	mA
Power Dissipation @ T <sub>A</sub> = 25°C	P <sub>D</sub>	500	mW
Operating & Storage Temperature	T <sub>OP</sub> & T <sub>stg</sub>	-65 to +200	°C
Maximum Thermal Resistance (Junction to PCB)	R <sub>θJA</sub>	325	°C/W

#### Notes:

- 1/ For ordering information, price, and availability contact factory.
- 2/ Screening based on MIL-PRF-19500. Screening flows available on request.
- 3/ Unless otherwise specified, all electrical characteristics @ 25°C.
- 4/ Pulse test: pulse width= 300µsec, duty cycle= 2%



**Available Part Numbers:**

SFT2222A-4  
 SFT2222A/18  
 SFT2222A/46

PIN ASSIGNMENT				
Package	Function	Collector	Emitter	Base
-4	Normal	Pin 1	Pin 2	Pin 3
/18	Normal	Pin 1	Pin 2	Pin 3
/46	Normal	Pin 1	Pin 2	Pin 3

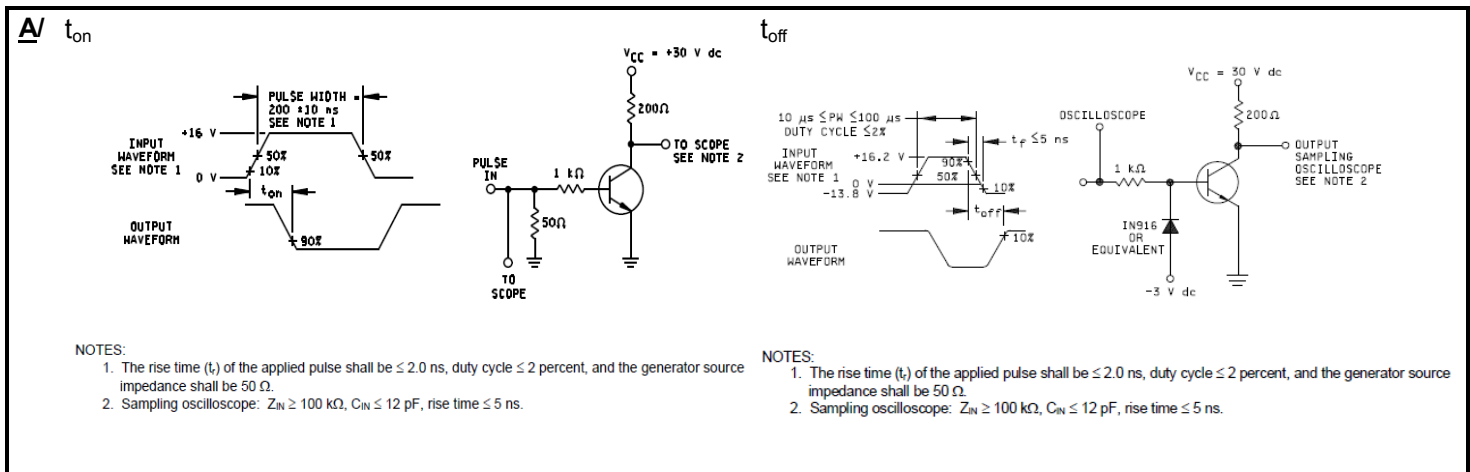


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Electrical Characteristic <sup>3/</sup>		Symbol	Min	Max	Units
Collector – Emitter Sustaining Voltage	I <sub>C</sub> = 10 mA	BV <sub>CEO</sub>	50	—	Volts
Collector Cutoff Current	V <sub>CE</sub> = 50 V	I <sub>CES</sub>	—	50	nA
Collector Cutoff Current	V <sub>CB</sub> = 60 V V <sub>CB</sub> = 75 V V <sub>CB</sub> = 60 V, T <sub>A</sub> = 150°C	I <sub>CBO</sub>	—	0.01 10 10	μA
Emitter Cutoff Current	V <sub>EB</sub> = 4.0 V V <sub>EB</sub> = 6.0 V	I <sub>EBO</sub>	—	0.01 10	μA
DC Forward Current Transfer Ratio <sup>4/</sup>	V <sub>CE</sub> = 10 V, I <sub>C</sub> = 0.1 mA V <sub>CE</sub> = 10 V, I <sub>C</sub> = 1.0 mA V <sub>CE</sub> = 10 V, I <sub>C</sub> = 10 mA V <sub>CE</sub> = 10 V, I <sub>C</sub> = 150 mA V <sub>CE</sub> = 10 V, I <sub>C</sub> = 500 mA V <sub>CE</sub> = 10 V, I <sub>C</sub> = 10 mA, T <sub>A</sub> = -55°C	H <sub>FE</sub>	50 75 100 100 30 35	— 325 — 300 — —	
Small-signal Forward Current Transfer Ratio	V <sub>CE</sub> = 10 V, I <sub>C</sub> = 1.0 mA, f= 1 kHz	h <sub>fe</sub>	50	—	
Collector – Emitter Saturation Voltage <sup>4/</sup>	I <sub>C</sub> = 150 mA, I <sub>B</sub> = 15 mA I <sub>C</sub> = 500 mA, I <sub>B</sub> = 50 mA	V <sub>CE(Sat)</sub>	—	0.3 1.0	Volts
Base – Emitter Saturation Voltage <sup>4/</sup>	I <sub>C</sub> = 150 mA, I <sub>B</sub> = 15 mA I <sub>C</sub> = 500 mA, I <sub>B</sub> = 50 mA	V <sub>BE(Sat)</sub>	0.6 —	1.2 2.0	Volts
Frequency Transition	V <sub>CE</sub> = 20 V, I <sub>C</sub> = 20 mA, f= 100 MHz	f <sub>T</sub>	250	—	MHz
Switching Times <sup>4/</sup>	V <sub>CC</sub> = 30 V, I <sub>C</sub> = 150 mA, I <sub>B1</sub> = 15 mA V <sub>CC</sub> = 30 V, I <sub>C</sub> = 150 mA, I <sub>B1</sub> = I <sub>B2</sub> = 15 mA, V <sub>BE(off)</sub> = 3 V	t <sub>on</sub> t <sub>off</sub>	— —	35 300	ns
Output Capacitance	V <sub>CB</sub> = 10 V, f= 1MHz	C <sub>ob</sub>	—	8.0	pF
Input Capacitance	V <sub>EB</sub> = 0.5 V, f= 1MHz	C <sub>ib</sub>	—	25	pF



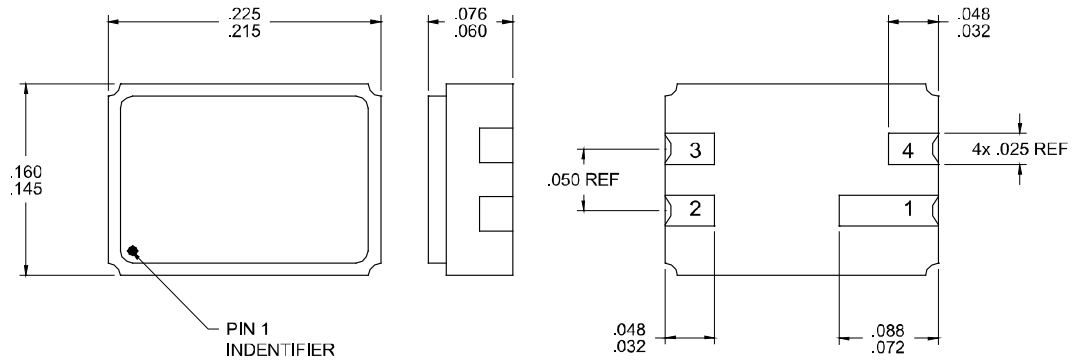


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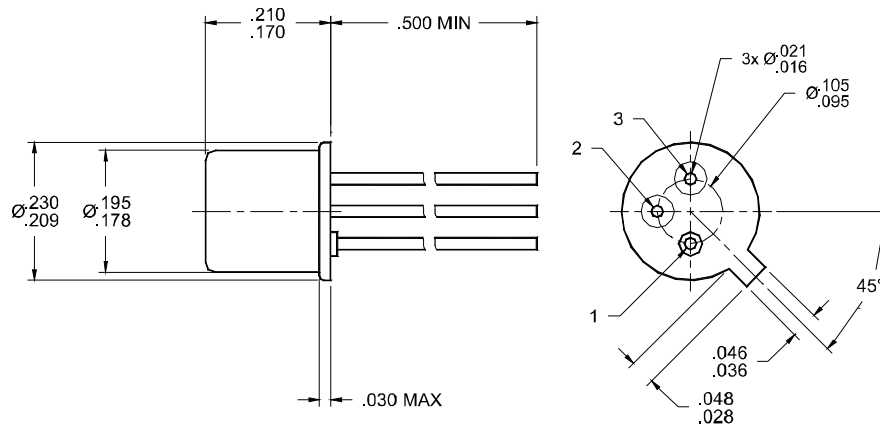
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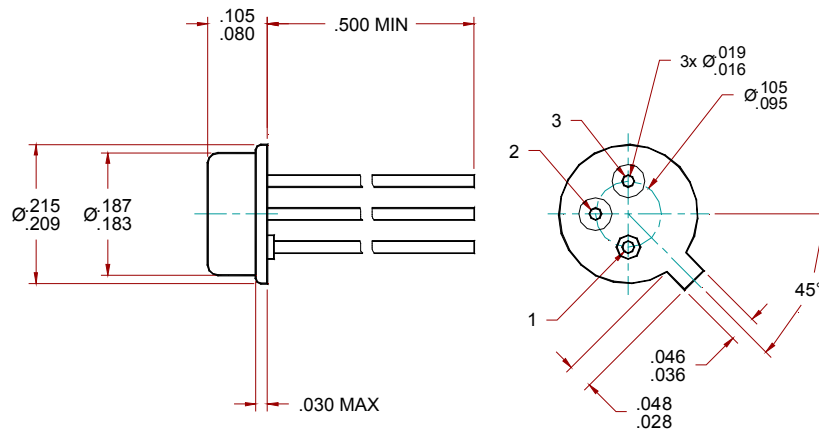
## LCC4 (-4)



## TO-18 (/18)



## TO-46 (/46)



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

**DATA SHEET #: TR0116C**

**DOC**