



Solid State Devices, Inc.

14701 Firestone Blvd * La Mirada, CA 90638
 Phone: (562) 404-4474 * Fax: (562) 404-1773
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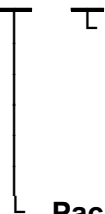
SFT3700S.22

SFT3700-4

DESIGNER'S DATA SHEET

Part Number / Ordering Information ^{1/}

SFT3700



Screening ^{2/}

— = Not Screened

TX = TX Level

TXV = TXV Level

S = S Level

Package

S.22 = SMD.22

S.22A = SMD.22A

-4 = LCC4

1 AMP

80 VOLTS

NPN High Speed Transistor

Features:

- BV_{CEO} : 80 V min
- Fast Switching
- High Frequency
- High Linear Gain, Low Saturation Voltage
- Replaces 2N3019, 2N3057A and 2N3700 Types
- TX, TXV, S-Level Screening Available ^{2/}

Maximum Ratings ^{3/}	Symbol	Value	Unit
Collector – Base Voltage	V_{CBO}	140	V
Collector – Emitter Voltage	V_{CEO}	80	V
Emitter – Base Voltage	V_{EBO}	7.0	V
Continuous Collector Current	I_C	1	A
Total Device Dissipation	P_D	6.5 3.0 1.5	W
		SMD.22A, $T_C > 100^\circ\text{C}$ SMD.22, $T_C > 50^\circ\text{C}$ LCC4, $T_C > 65^\circ\text{C}$	
Operating & Storage Temperature	$T_{OP} \text{ \& } T_{stg}$	-65 to +200	$^\circ\text{C}$
Maximum Thermal Resistance (Junction to Case)	$R_{\theta JC}$	15 50 90	$^\circ\text{C/W}$
		SMD.22A SMD.22 LCC4	

Notes: *Pulsed per MIL-STD-750.

1/ For ordering information, price, and availability contact factory.

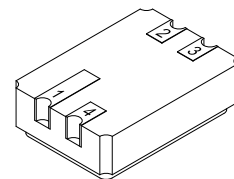
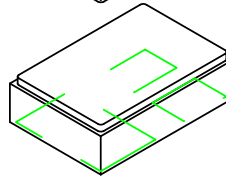
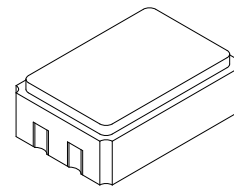
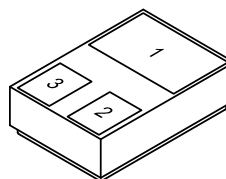
2/ Screening based on MIL-PRF-19500. Screening flows available on request.

3/ Unless otherwise specified, all electrical characteristics @ 25°C .

4/ Unless otherwise specified, pad finish is gold. Solder finish is available; contact factory.

SMD.22 (S.22 / S.22A)

LCC4 (-4)



Available Part Numbers:

SFT3700S.22
 SFT3700S.22A
 SFT3700-4

PIN ASSIGNMENT

Package	Function	Collector	Emitter	Base
S.22 / S.22A	Normal	Pin 1	Pin 2	Pin 3
-4 (pin 4 N/C)	Normal	Pin 1	Pin 2	Pin 3

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

DATA SHEET #: TR0093A

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Electrical Characteristic ^{3/}	Symbol	Min	Typ	Max	Unit
Collector – Emitter Breakdown Voltage* $I_C = 30 \text{ mA}$	BV_{CEO}	80	100	—	V_{DC}
Emitter Current $V_{BE} = 5 \text{ V}_{DC}$ $V_{BE} = 7 \text{ V}_{DC}$	I_{EBO}	— —	0.5 0.025	10 10	nA_{DC} μA_{DC}
Collector to Emitter Cutoff Current $V_{CE} = 90 \text{ V}_{DC}, T_C = 25^\circ C$ $V_{CB} = 90 \text{ V}_{DC}, T_C = 150^\circ C$	I_{CES}	— —	1.5 0.25	10 5	nA_{DC} μA_{DC}
Collector Cutoff Current $V_{CB} = 140 \text{ V}_{DC}, T_C = 25^\circ C$	I_{CBO}	—	0.05	10	μA_{DC}
DC Current Gain* $V_{CE} = 10 \text{ V}_{DC}$ $I_C = 0.1 \text{ mA}_{DC}, T_C = 25^\circ C$ $I_C = 10 \text{ mA}_{DC}, T_C = 25^\circ C$ $I_C = 150 \text{ mA}_{DC}, T_C = 25^\circ C$ $I_C = 500 \text{ mA}_{DC}, T_C = 25^\circ C$ $I_C = 1 \text{ A}_{DC}, T_C = 25^\circ C$ $I_C = 150 \text{ mA}_{DC}, T_C = -55^\circ C$	H_{FE}	50 90 100 50 15 40	160 175 175 130 40 80	300 — 300 300 — —	
Collector – Emitter Saturation Voltage* $I_C = 150 \text{ mA}_{DC}, I_B = 15 \text{ mA}_{DC}$ $I_C = 500 \text{ mA}_{DC}, I_B = 50 \text{ mA}_{DC}$	$V_{CE(Sat)}$	— —	0.1 0.3	0.2 0.5	V_{DC}
Base – Emitter Saturation Voltage* $I_C = 150 \text{ mA}_{DC}, I_B = 15 \text{ mA}_{DC}$	$V_{BE(Sat)}$	—	0.9	1.1	V_{DC}
AC Current Gain $I_C = 50 \text{ mA}, V_{CE} = 10 \text{ V}, f = 20 \text{ MHz}$ $I_C = 1 \text{ mA}, V_{CE} = 5 \text{ V}, f = 1 \text{ kHz}$	h_{fe}	5 80	10 170	20 400	
Collector-Base Time Constant	$R_b * C_c$	—	300	—	ps
Switching times $V_{CC} = 20 \text{ V}, R_C = 40 \Omega, R_B = 1 \Omega$	t_d t_r t_s t_f	— — — —	14 12 230 32	— — — —	ns
Input Capacitance $V_{BE} = 0.5 \text{ V}, I_C = 0, f = 1 \text{ MHz}$	C_{ib}	—	50	60	pF
Output Capacitance $V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$	C_{ob}	—	6.5	12	pF

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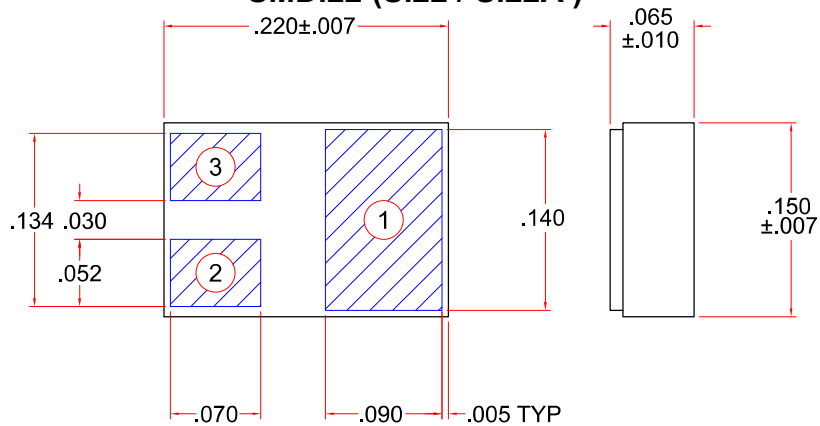
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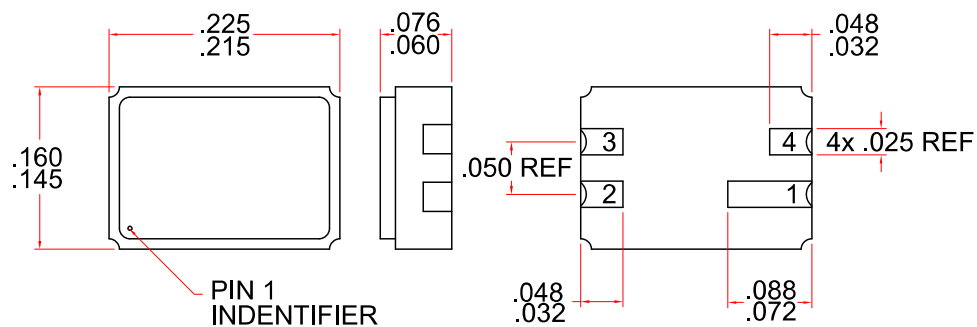
SFT3700S.22

SFT3700-4

SMD.22 (S.22 / S.22A)



LCC4 (-4)



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