



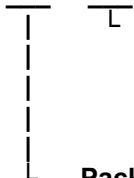
Solid State Devices, Inc.

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

DESIGNER'S DATA SHEET

Part Number / Ordering Information ^{1/}

SFT4300



Screening ^{2/}

— = Not Screened

TX = TX Level

TXV = TXV Level

S = S Level

Package

S.22 = SMD.22

SFT4300S.22

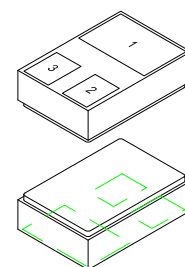
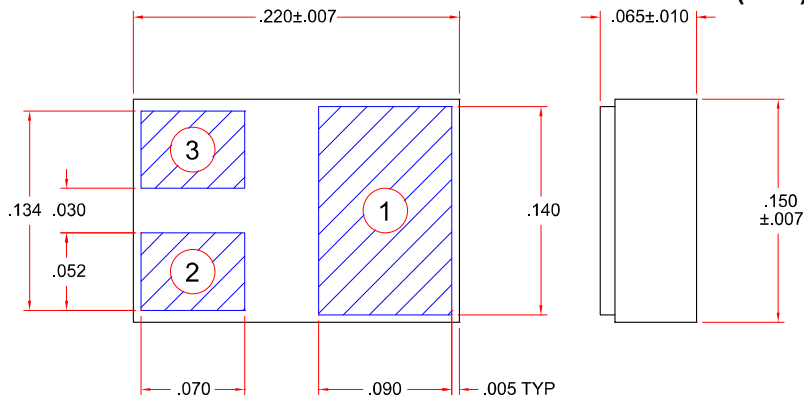
2 Amp, 150 Volts General Purpose NPN Transistor

Features:

- Radiation Tolerant
- Fast Switching
- Hermetic Surface Mount Device with Excellent Thermal Properties
- Complementary Use with SFT5333S.22
- Available in Reverse Polarity
- TX, TXV, S-Level Screening Available ^{2/}

Maximum Ratings	Symbol	Value	Units
Collector – Emitter Voltage	V_{CEO}	80	V
Collector – Base Voltage	V_{CB}	150	V
Emitter – Base Voltage	V_{BE}	8	V
Continuous Collector Current	I_C I_{Cmax}	2 5	A
Base Current	I_B	1	A
Power Dissipation @ $T_C = 25^\circ C$ ^{3/}	P_D	15	W
Power Dissipation @ $T_A = 25^\circ C$ ^{4/}		1.0	
Operating & Storage Temperature	Top & Tstg	-65 to +200	°C
Maximum Thermal Resistance	Junction to Case Junction to Ambient	$R_{\theta JC}$ $R_{\theta JA}$	11.67 (typ 8) 175
			°C/W

CASE OUTLINE: SMD.22 (S.22)



PIN 1 = COLLECTOR
PIN 2 = EMITTER
PIN 3 = BASE

NOTES: *Pulse Test: Pulse Width = 300 μ sec, Duty Cycle = 2%

^{1/} For ordering information, price, availability - contact factory.

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

^{3/} Derated 85.7 mW/°C above $T_C = 25^\circ C$.

^{4/} Derated 5.7 mW/°C above $T_A = 25^\circ C$.

^{5/} Unless otherwise specified, all electrical characteristics @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 #: TR0097C

DOC



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

SFT4300S.22

Electrical Characteristics ^{5/}		Symbol	Min	Typ	Max	Units
Collector – Emitter Sustaining Voltage	$I_C = 30 \text{ mA}$	$BV_{CEO(sus)}$	80	95	-	V
Collector – Base Breakdown Voltage	$I_C = 0.2 \text{ mA}$	BV_{CBO}	150	240	-	V
Emitter – Base Breakdown Voltage	$I_E = 0.2 \text{ mA}$	BV_{EBO}	8	9	-	V
Collector – Emitter Cutoff Current	$V_{CE} = 40 \text{ V}, I_B = 0$	I_{CEO}	-	0.01	5	μA
Collector – Base Cutoff Current	$V_{CB} = 90 \text{ V}, I_E = 0, T_A = 100^\circ\text{C}$	I_{CBO1}	-	-	1	μA
		I_{CBO2}	-	-	75	
Emitter-Base Cutoff Current	$V_{BE} = 6 \text{ V}, I_C = 0$	I_{EBO}	-	0.01	1	μA
DC Current Gain	$I_C = 1.0 \text{ A}, V_{CE} = 5 \text{ V}$	HFE_1	50	-	200	
	$I_C = 2.0 \text{ A}, V_{CE} = 5 \text{ V}$	HFE_2	50	-	-	
	$I_C = 0.5 \text{ A}, V_{CE} = 1 \text{ V}, T_A = -65^\circ\text{C}$	HFE_3	-	45	-	
	$I_C = 2.0 \text{ A}, V_{CE} = 2 \text{ V}, T_A = -65^\circ\text{C}$	HFE_4	-	40	-	
	$I_C = 5.0 \text{ A}, V_{CE} = 2 \text{ V}, T_A = -65^\circ\text{C}$	HFE_5	-	20	-	
Collector-Emitter Saturation Voltage	$I_C = 1.0 \text{ A}, I_B = 100 \text{ mA}$	$V_{CE(sat)1}$	-	0.12	0.3	V
	$I_C = 2.0 \text{ A}, I_B = 200 \text{ mA}$	$V_{CE(sat)2}$	-	0.22	0.5	
	$I_C = 5.0 \text{ A}, I_B = 500 \text{ mA}$	$V_{CE(sat)3}$	-	0.56	-	
Collector-Base Saturation Voltage	$I_C = 5.0 \text{ A}, I_B = 500 \text{ mA}$	$V_{BE(sat)}$	-	1.1	-	V
Base-Emitter ON Voltage	$I_C = 2.0 \text{ A}, V_{CE} = 2 \text{ V}$	$V_{BE(on)}$	-	0.83	1.2	V
Current Gain Bandwidth Product	$I_C = 0.5 \text{ A}, V_{CE} = 5 \text{ V}, f = 10 \text{ MHz}$	f_T	80	120	-	MHz
Input Capacitance	$V_{BE} = 8 \text{ V}, I_C = 0, f = 1 \text{ MHz}$	C_{ib}	-	-	225	pF
Output Capacitance	$V_{CB} = 30 \text{ V}, I_E = 0, f = 1 \text{ MHz}$	C_{ob}	-	-	45	pF
Switching Times	$V_{CC} = 20 \text{ Vdc}, I_C = 1 \text{ A}, V_{EB(off)} = 3.7 \text{ V}, I_{B1} = I_{B2} = 100 \text{ mA}, R_L = 20 \Omega$	t_{on}	-	0.06	0.13	μs
		t_{off}	-	0.85	1.5	

NOTES: *Pulse Test: Pulse Width = 300 μsec , Duty Cycle = 2%

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

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

3/ Derated 85.7 mW/ $^\circ\text{C}$ above $T_C = 25^\circ\text{C}$.

4/ Derated 5.7 mW/ $^\circ\text{C}$ above $T_A = 25^\circ\text{C}$.

5/ Unless otherwise specified, all electrical characteristics @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 #: TR0097C

DOC