

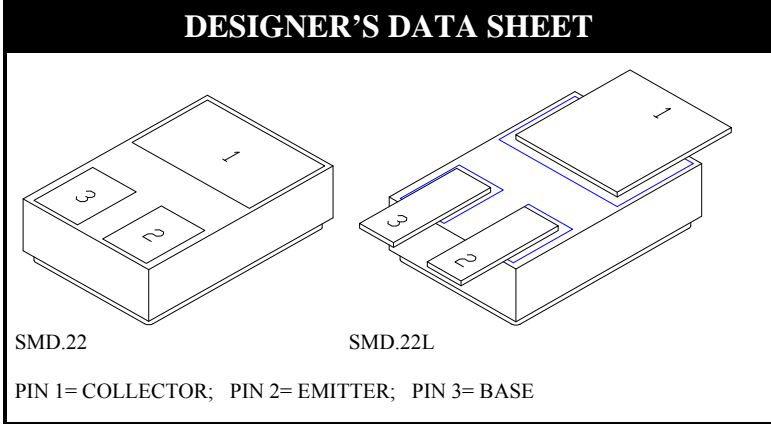


Solid State Devices, Inc.

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SFT4300S.22
SFT4300S.22L

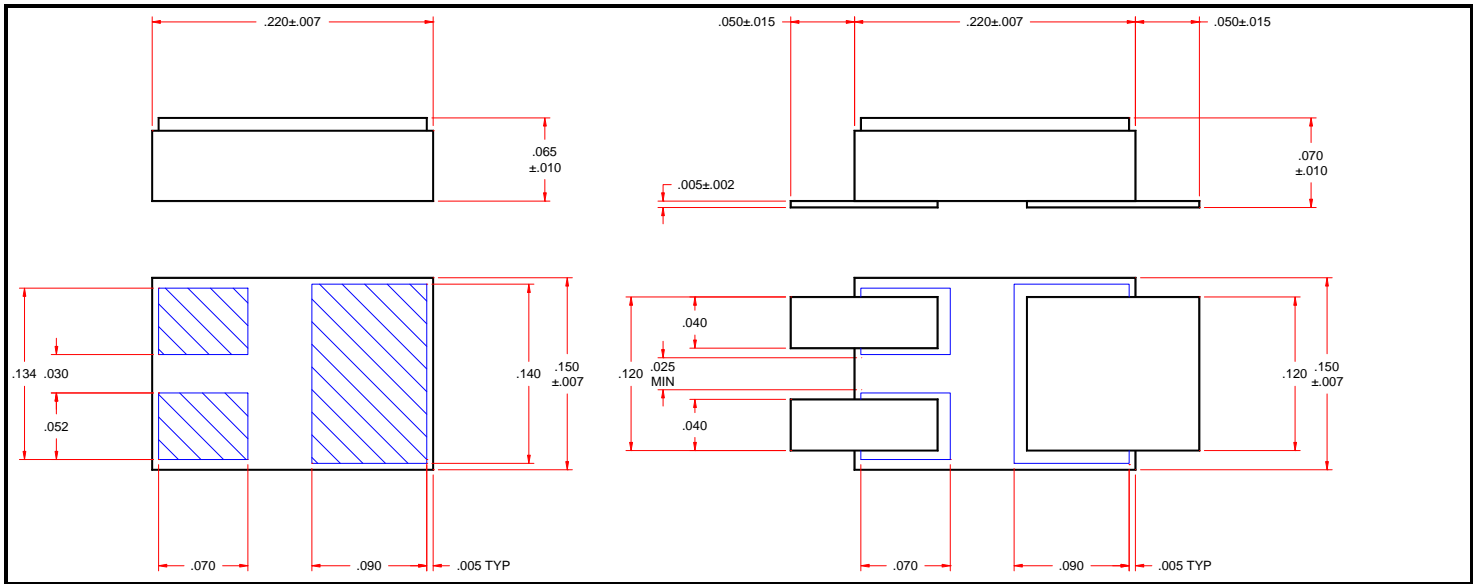
**2 A, 150 Volts general purpose
 NPN Transistor**



- Features:**
- Radiation tolerant
 - Fast switching
 - hermetic surface mount device with excellent thermal properties
 - Available with lead extensions (SMD.22L)
 - Complementary use with SFT5333S.22
 - Available in Reverse Polarity
 - TX, TXV, S-Level screening available

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

Note1: Derated 85.7 mW/°C above Tc= 25°C
 Note2: Derated 5.7 mW/°C above TA= 25°C





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Electrical Characteristic ^{4/}	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	uA	
Collector-Base Cutoff Current	$V_{CB} = 90 \text{ V}; I_E = 0$ $V_{CB} = 90 \text{ V}; I_E = 0; T_a = 100 \text{ }^\circ\text{C}$	I_{CBO1}	-	-	1	uA
		I_{CBO2}	-	-	75	
Emitter-Base Cutoff Current	$V_{BE} = 6 \text{ V}; I_C = 0$ I_{EBO}	—	0.01	1	uA	
DC Current Gain	$I_C = 1.0 \text{ A}, V_{CE} = 5 \text{ V}$ $I_C = 2.0 \text{ A}, V_{CE} = 5 \text{ V}$	HFE_1	50	-	200	
		HFE_2	50	-	-	
	$I_C = 0.5 \text{ A}, V_{CE} = 1 \text{ V}, T_a = -65^\circ\text{C}$	HFE_7	-	45	-	
	$I_C = 2.0 \text{ A}, V_{CE} = 2 \text{ V}, T_a = -65^\circ\text{C}$ $I_C = 5.0 \text{ A}, V_{CE} = 2 \text{ V}, T_a = -65^\circ\text{C}$	HFE_8 HFE_9	- -	40 20	- -	
Collector-Emitter Saturation Voltage	$I_C = 1.0 \text{ A}, I_B = 100 \text{ mA}$ $I_C = 2.0 \text{ A}, I_B = 200 \text{ mA}$ $I_C = 5.0 \text{ A}, I_B = 500 \text{ mA}$	$V_{CE(sat)1}$	-	0.12	0.3	V
		$V_{CE(sat)2}$	-	0.22	0.5	
		$V_{CE(sat)3}$	-	0.56	-	
Collector-Base Saturation Voltage	$I_C = 5.0 \text{ A}, I_B = 500 \text{ mA}$ $V_{BE(sat)3}$	-	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	us
		t_{off}	-	0.85	1.5	

NOTES:

* Pulse Test: Pulse Width = 300μsec, Duty Cycle = 2%
 1/ For Ordering Information, Price, Availability Contact Factory.

2/ Screening per MIL-PRF-19500

3/ For Package Outlines Contact Factory.

4/ 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 #: TR0097B

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