



Solid State Devices, Inc.

14830 Valley View Blvd * La Mirada, Ca 90638

Phone: (562) 404-7855 * Fax: (562) 404-1773

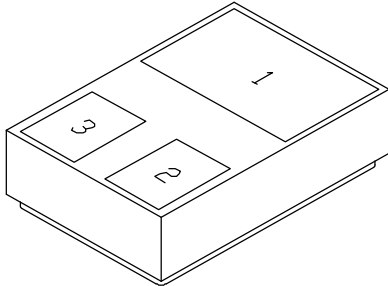
ssdi@ssdi-power.com * www.ssdi-power.com

SFT3439S.22

1 A /450 Volts NPN Switching Transistor

DESIGNER'S DATA SHEET

SMD.22



Features:

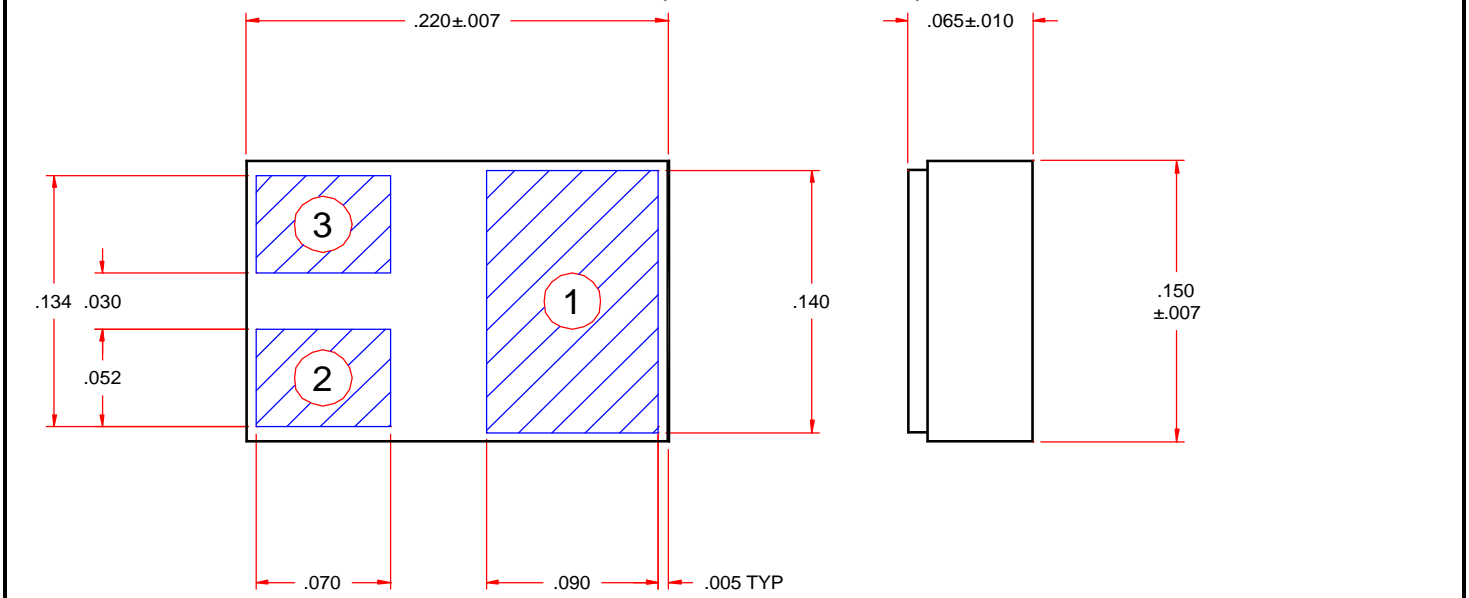
- Switching Transistor
- Small Footprint Surface Mount Device with Excellent Thermal Properties
- Replacement/Enhancement for 2N3439UA
- TX, TXV, S-Level Screening Available
- PNP Complimentary Parts Available

Maximum Ratings	Symbol	Value	Units
Collector – Emitter Voltage	V_{CEO}	350	Volts
Collector – Base Voltage	V_{CBO}	450	Volts
Emitter – Base Voltage	V_{EBO}	7	Volts
Continuous Collector Current	I_C	1	Amps
Power Dissipation @ $T_C = 25^\circ C$	P_D	5	W
Power Dissipation @ $T_C = 25^\circ C$		0.7	
Operating & Storage Temperature	Top & Tstg	-65 to +200	$^\circ C$
Maximum Thermal Resistance	Junction to Case R_{qJC}	7.5 (typ 5)	$^\circ C/W$
	Junction to Ambient R_{qJA}	250	

Note1: Derated 133 mW/ $^\circ C$ above $T_C = 162.5^\circ C$

Note2: Derated 4 mW/ $^\circ C$ above $T_A = 25^\circ C$

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



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

DATA SHEET #: TR0086A

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Electrical Characteristics ^{4/}	Symbol	Min	Typ	Max	Units
Collector Cutoff Current	$V_{CB} = 360\text{ V}$ I_{CBO1}	—	0.05	2	mA
	$V_{CB} = 450\text{ V}$ I_{CBO2}	—	0.1	5	
	$V_{CB} = 360\text{ V}, T_A = 150^\circ\text{C}$ I_{CBO3}	—	—	100	
Collector Cutoff Current	$V_{CE} = 300\text{ V}$ I_{CEO}	—	0.02	2	mA
Collector Cutoff Current	$V_{CE} = 450\text{ V}, V_{BE} = 1.5\text{ V}$ I_{CEX1}	—	—	5	mA
Emitter Cutoff Current	$V_{EB} = 7.0\text{ V}$ I_{EBO}	—	0.01	10	mA
DC Forward Current Transfer Ratio *	$V_{CE} = 10\text{ V}, I_C = 0.2\text{ mA}$ H_{FE1}	10	65	—	
	$V_{CE} = 10\text{ V}, I_C = 2\text{ mA}$ H_{FE2}	30	90	—	
	$V_{CE} = 10\text{ V}, I_C = 20\text{ mA}$ H_{FE4}	40	115	160	
	$V_{CE} = 10\text{ V}, I_C = 20\text{ mA}, T_a = -55^\circ\text{C}$ H_{FE4}	15	30	—	
Collector to Emitter Saturation Voltage	$I_C = 50\text{ mA}, I_B = 4\text{ mA}$ $V_{CE(sat)1}$	—	0.23	0.5	V
Base to Emitter Saturation Voltage	$I_C = 50\text{ mA}, I_B = 4\text{ mA}$ $V_{BE(sat)1}$	—	0.75	1.3	V
Frequency Transition (Small Signal Current Gain) @ f= 5 MHz	$V_{CE} = 10\text{ V}, I_C = 10\text{ mA}, f = 5\text{ MHz}$ h_{fe}	3	5.5	15	
Small Signal Current Gain @ f= 1 kHz	$V_{CE} = 10\text{ V}, I_C = 5\text{ mA}, f = 1\text{ kHz}$ h_{fe}	25	110	—	
Output Capacitance	$V_{CB} = 10\text{ V}, f = 1\text{ MHz}$ C_{obo}	—	8	10	pF
Input Capacitance	$V_{BE} = 5\text{ V}, f = 1\text{ MHz}$ C_{ibo}	—	35	75	pF
Pulse Response	$V_{CC} = 200\text{ V}, I_C = 20\text{ mA}, I_B = 2\text{ mA}$ t_{on}	—	—	1	ms
	t_{off}	—	—	10	
Safe Operating Area	$V_{CE} = 5\text{ V}, I_C = 1\text{ A}, t = 1\text{ s}$ $SOA1$				
	$V_{CE} = 350\text{ V}, I_C = 14\text{ mA}, t = 1\text{ s}$ $SOA2$				

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.

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