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

SFT5152 and SFT5154

DESIGNER'S DATA SHEET

Part Number / Ordering Information [1/]

SFT5152
SFT5154

Screening [2/] __ = Not Screened
TX = TX Level
TXV = TXV Level
S = S Level

Package [3/]
__ = TO-5
S.5 = SMD.5

10 AMP
POWER TRANSISTORS
SILICON NPN
100 VOLTS
10 WATTS

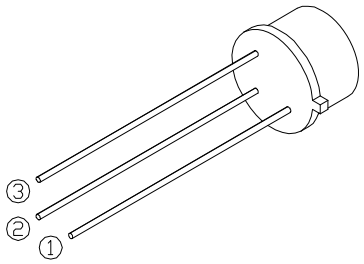
Features:
- Radiation Tolerant
- Fast Switching, 500 nsec max t_{on}
- High Frequency, Typical f_t = 100 MHz
- BVCEO 80 Volts Min
- High Linear Gain, Low Saturation Voltage
- 200ºC Operating Temperature
- Designed for Complementary Use with SFT5151 and SFT5153
- Replacement for 2N5152 and 2N5154
- TX, TXV, S-Level Screening Available[2/] - Consult Factory

Maximum Ratings	Symbol	Value	Units
Collector – Emitter Voltage	V_{CEO}	80	Volts
Collector – Base Voltage	V_{CBO}	100	Volts
Emitter – Base Voltage	V_{EBO}	5.5	Volts
Collector Current	I_C	10	Amps
Base Current	I_B	2.5	Amps
Total Device Dissipation @ TC = 50ºC Derate above 50ºC	P_D	10 66.6	W mW/ºC
Operating & Storage Temperature	Top & Tstg	-65 to +200	ºC
Maximum Thermal Resistance Junction to Case	$R_{\theta JC}$	15	ºC/W

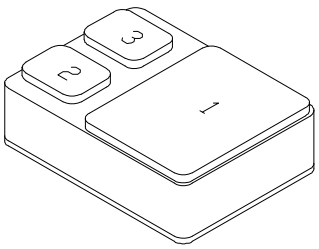
NOTES:
* Pulse Test: Pulse Width = 300µsec, Duty Cycle = 2%
1/ For Ordering Information, Price, Operating Curves, and Availability Contact Factory.
2/ Screening per MIL-PRF-19500
3/ For Package Outlines Contact Factory.
4/ Unless Otherwise Specified, All Electrical Characteristics @25ºC.

Available parts:
SFT5152, SFT5152S.5
SFT5154, SFT5154S.5

TO-5



SMD.5



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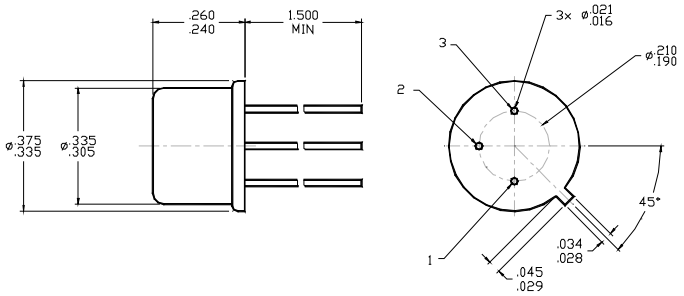
SFT5152 and SFT5154

Electrical Characteristic [4/]			Symbol	Min	Max	Units
Collector – Emitter Breakdown Voltage*		I_C = 100mA	**BV_{CEO}**	80	—	Volts
Collector – Base Breakdown Voltage		I_C = 200µA	**BV_{CBO}**	100	—	Volts
Emitter – Base Breakdown Voltage		I_E = 200µA	**BV_{EBO}**	5.5	—	Volts
Collector – Cutoff Current		V_{CE} = 40V	**I_{CEO}**	—	50	µA
Collector – Cutoff Current		V_{CE} = 60V, V_{BE} = 2V, T_C = 150°C	**I_{CEV}**	—	25	µA
Collector – Cutoff Current		V_{CE} = 60V V_{CE} = 100V	**I_{CES}**	—	1.0 1.0	µA mA
Emitter – Cutoff Current		V_{EB} = 4V V_{EB} = 5.5V	**I_{EBO}**	—	1.0 1.0	µA mA
DC Current Gain *	SFT5152	V_{CE} = 5V, I_C = 50mA V_{CE} = 5V, I_C = 2.5A V_{CE} = 5V, I_C = 2.5A, T_A = -55°C V_{CE} = 5V, I_C = 5A	**h_{FE}**	20 30 15 20	— 200 — —	—
	SFT5154	V_{CE} = 5V, I_C = 50mA V_{CE} = 5V, I_C = 2.5A V_{CE} = 5V, I_C = 2.5A, T_A = -55°C V_{CE} = 5V, I_C = 5A		50 70 25 40	— 200 — —	
Collector – Emitter Saturation Voltage *		I_C = 2.5A, I_B = 250mA I_C = 5.0A, I_B = 500mA	**$V_{CE(Sat)}$**	— —	0.75 1.5	Volts
Base – Emitter Saturation Voltage *		I_C = 2.5A, I_B = 250mA I_C = 5.0A, I_B = 500mA	**$V_{BE(Sat)}$**	— —	1.45 2.2	Volts
Common Emitter small signal gain		V_{CE} = 5V, I_C = 0.1A, f= 1kHz — SFT5152 SFT5154	**h_{fe}**	20 50	—	—
Current Gain Bandwidth Product		V_{CE} = 5V, I_C = 0.5A, f = 20MHz — SFT5152 SFT5154	**f_T**	60 70	—	MHz
Output Capacitance		V_{CB} = 10V, I_E = 0A, f = 1MHz	**c_{ob}**	—	250	pF
Base – Emitter Voltage*		V_{CE} = 5V, I_C = 2.5A	**$V_{BE(ON)}$**	—	1.45	Volts
Safe Operating Area		V_{CE} = 5V, I_C = 2.0A, 1 sec V_{CE} = 32V, I_C = 310 mA, 1 sec V_{CE} = 80V, I_C = 12.5mA, 1 sec	**SOA_1** **SOA_2** **SOA_3**	—	—	—
ON Time	V_{CC} = 30V, $V_{EB(Off)}$ = 3.7V I_C = 5A		**t_{ON}**	—	500	nsec
OFF Time			**t_{OFF}**		1500	
Storage Time	$V_{EB(Off)}$ = 3.7V, I_{B1} = I_{B2} = 0.5A, R_L = 6 Ohms		**t_S**	—	1.4	µsec
Fall Time			**t_f**		0.5	

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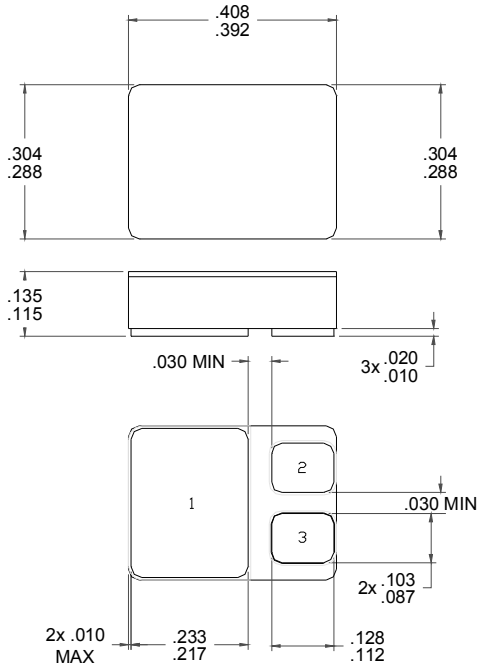
TO-5



PIN ASSIGNMENT

Package	Pin 1	Pin 2	Pin 3 (Case)
TO-5	Emitter	Base	Collector

SMD.5



PIN ASSIGNMENT

Package	Pin 1	Pin 2	Pin 3 (Case)
SMD.5	Emitter	Base	Collector