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

SFT5151 and SFT5153

DESIGNER'S DATA SHEET

Part Number / Ordering Information [1/]

SFT5151
SFT5153

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

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

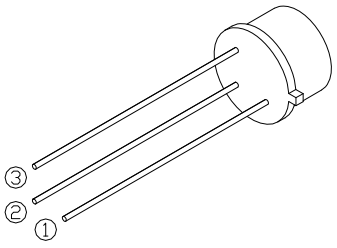
10 AMP
POWER TRANSISTORS
SILICON PNP
100 VOLTS
10 WATTS

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
- 200°C Operating Temperature
- Designed for Complementary Use with SFT5152 and SFT5154
- Replacement for 2N5151 and 2N5153
- TX, TXV, S-Level Screening Available[2/] - Consult Factory

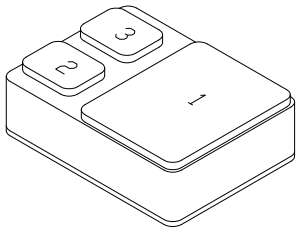
Maximum Ratings	Symbol	Value	Units
Collector – Emitter Voltage	V_{CEO}	80	Volts
Collector – Base Voltage	V_{CBO}	100	Volts
Emitter – Base Voltage	V_{EBO}	5.5	Volts
Collector Current	I_C	10	Amps
Base Current	I_B	2.5	Amps
Total Device Dissipation @ TC = 50°C Derate above 50°C	P_D	10 66.6	W mW/°C
Operating & Storage Temperature	Top & Tstg	-65 to +200	°C
Maximum Thermal Resistance Junction to Case	$R_{\theta JC}$	15	°C/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 @25°C.

TO-5



SMD.5



Available parts:
SFT5151, SFT5151S.5
SFT5153, SFT5153S.5

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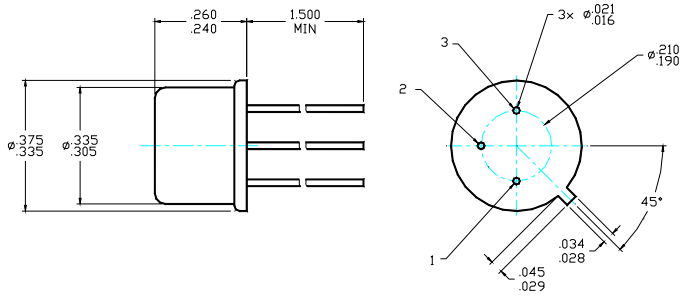
SFT5151 and SFT5153

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_A = 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 *	SFT5151	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	— 250 — —	—
	SFT5153	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	— 250 — —	
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 SFT5151 SFT5153	h_{fe}	20 50	—	—
Current Gain Bandwidth Product		V_{CE} = 5V, I_C = 0.5A, f = 20MHz SFT5151 SFT5153	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	—	—	—
Delay Time	V_{CC} = 30V, $V_{EB(Off)}$ = 3.7V I_C = 5A		t_{ON} t_{OFF}	—	500 1500	nsec
Rise Time						
Storage Time	$V_{EB(Off)}$ = 3.7V, I_{B1} = I_{B2} = 0.5A, R_L = 6 Ohms		t_S t_f	—	1.4 0.5	µsec
Fall Time						

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SFT5151 and SFT5153

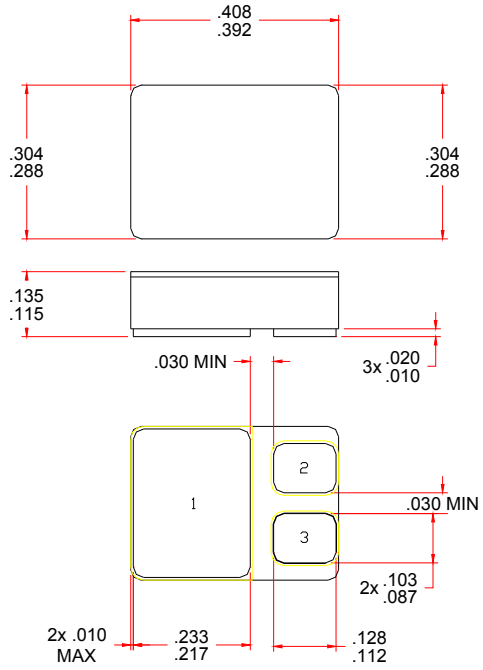
TO-5



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