



Solid State Devices, Inc.

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 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 @ $T_C = 50^\circ C$ 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.

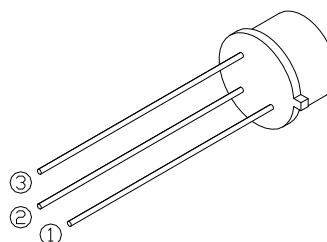
^{4/} Unless Otherwise Specified, All Electrical Characteristics @25°C.

Available parts:

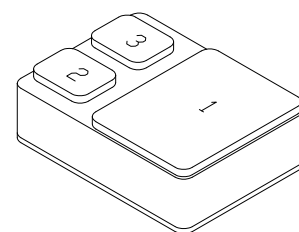
SFT5151, SFT5151S.5

SFT5153, SFT5153S.5

TO-5



SMD.5



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

DATA SHEET #: TR0109B

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SFT5151 and SFT5153

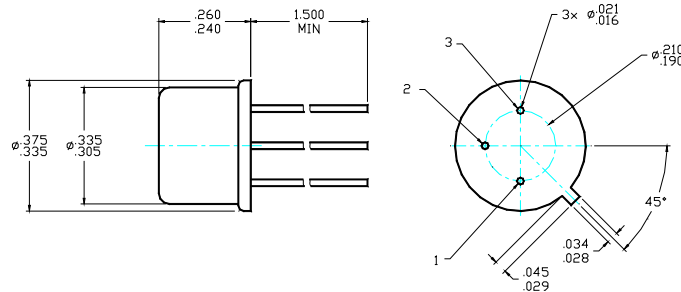
Electrical Characteristic ^{4/}				Symbol	Min	Max	Units
Collector– Emitter Breakdown Voltage*			I _C = 100mA	BV_{CEO}	80	—	Volts
Collector – Base Breakdown Voltage			I _C = 200μA	BV_{CBO}	100	—	Volts
Emitter – Base Breakdown Voltage			I _E = 200μA	BV_{EBO}	5.5	—	Volts
Collector – Cutoff Current			V _{CE} = 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, SFT5151 f= 1kHz SFT5153	h_{fe}	20 50	—	—
Current Gain Bandwidth Product			V _{CE} = 5V, I _C = 0.5A, SFT5151 f = 20MHz 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	SOA₁ SOA₂ SOA₃	—	—	—
Delay Time	V _{CC} = 30V, V _{EB(Off)} = 3.7V I _C = 5A V _{EB(Off)} = 3.7V, I _{B1} = I _{B2} = 0.5A, R _L = 6 Ohms			t_{ON}	—	500	nsec
Rise Time				t_{OFF}			
Storage Time				t_S	—	1.4	μsec
Fall Time							

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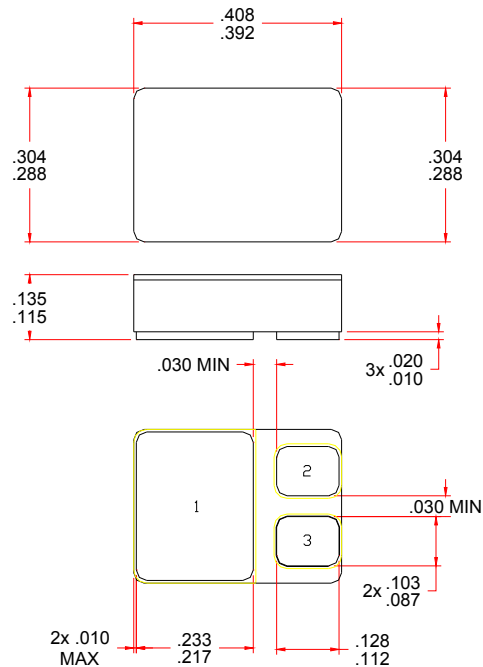
TO-5



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