



Solid State Devices, Inc.

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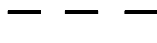
SFT5152 and SFT5154

DESIGNER'S DATA SHEET

Part Number / Ordering Information ^{1/}

SFT5152

SFT5154



Screening ^{2/}

___ = Not Screened

TX = TX Level

TXV = TXV Level

S = S Level

Lead Bend Options

___ = Straight

UB = Up Bend

DB = Down Bend

Package ^{3/}

J = TO-257

/5 = TO-5

G = Cerpack

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 $f_t = 85$ MHz
- BVCEO 80 Volts Min
- High Linear Gain, Low Saturation Voltage
- 200°C 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 = 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	TO-257 (J) TO-5 (/5) Cerpack (G) SMD.5 (S.5)	5 10 3 3	°C/W

NOTES:

* Pulse Test: Pulse Width = 300µsec, Duty Cycle = 2%

^{1/} For ordering information, price, operating curves, and availability - contact factory.

^{2/} Screening based on MIL-PRF-19500. Screening flows available on request.

^{3/} For package outlines - contact factory.

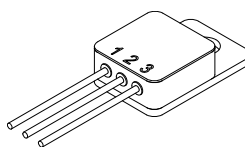
^{4/} Unless otherwise specified, all electrical characteristics @25°C.

Available parts:

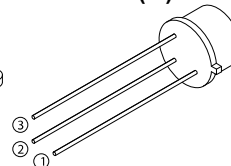
SFT5152J, SFT5152/5, SFT5152G, SFT5152S.5

SFT5154J, SFT5154/5, SFT5154G, SFT5154S.5

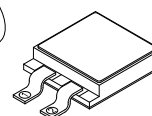
TO-257 (J)



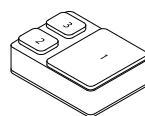
TO-5 (/5)



Cerpack (G)



SMD.5 (S.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 #: TR0110B

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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	— 250 — —	—
	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	— 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 SFT5152 SFT5154	h _{fe}	20 50	—	—
Current Gain Bandwidth Product		V _{CE} = 5V, I _C = 0.5A, f = 10MHz 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 V _{EB(Off)} = 3.7V, I _{B1} = I _{B2} = 0.5A, R _L = 6 Ohms		t _{ON}	—	500 1500	nsec
OFF Time			t _{OFF}			
Storage Time			t _S t _f			
Fall Time						

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