Solid State Devices, Inc.
14701 Firestone Blvd * La Mirada, Ca 90638
Phone: (562) 404-7855 * Fax: (562) 404-1773
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SFT502 and SFT504 Series

DESIGNER'S DATA SHEET

Part Number / Ordering Information [1/]

SFT502 __ __
SFT504 __ __

\+ **Screening** [2/]
- __ = Not Screen
- TX = TX Level
- TXV = TXV Level
- S = S Level

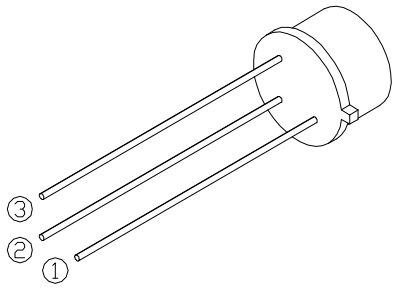
\+ **Package** [3/]
- __ = TO-5

5 AMP 200 Volts HIGH SPEED NPN Transistor

Features:
- Radiation Tolerant
- Fast Switching
- High Frequency, 50 MHz Typical
- BVCEO 150 Volts Min
- High Linear Gain
- Very Low Leakage and Saturation
- 200ºC Operating Temperature
- Gold Eutectic Die Attach
- Designed for Complementary Use with SFT501 and SFT503

Maximum Ratings	Symbol	Value	Units
Collector – Emitter Voltage	V_{CEO}	150	Volts
Collector – Base Voltage	V_{CBO}	200	Volts
Emitter – Base Voltage	V_{EBO}	7	Volts
Continues Collector Current	I_C	5	Amps
Base Current	I_B	1	Amps
Power 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

TO-5



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Electrical Characteristic [4]		Symbol	Min	Typ	Max	Units
Collector – Emitter Breakdown Voltage	I_C = 50mA	$\mathbf{BV_{CEO}}$	150	—	—	Volts
Collector – Base Breakdown Voltage	I_C = 200µA	$\mathbf{BV_{CBO}}$	200	—	—	Volts
Emitter – Base Breakdown Voltage	I_E = 200µA	$\mathbf{BV_{EBO}}$	7	—	—	Volts
Collector – Cutoff Current	V_{CE} = 100 V	$\mathbf{I_{CEO}}$	—	—	1	µA
Collector – Cutoff Current	V_{CB} = 100 V	$\mathbf{I_{CBO}}$	—	—	500	nA
Emitter – Cutoff Current	V_{EB} = 6 V	$\mathbf{I_{EBO}}$	—	—	500	nA
DC Current Gain *						
SFT502	V_{CE} = 5V, I_C = 50mA	$\mathbf{h_{FE}}$	20	—	—	—
	V_{CE} = 5V, I_C = 2.5A		30	—	—	
	V_{CE} = 5V, I_C = 5A		20	—	—	
SFT504	V_{CE} = 5V, I_C = 50mA		50	—	—	
	V_{CE} = 5V, I_C = 2.5A		50	—	—	
	V_{CE} = 5V, I_C = 5A		40	—	—	
Collector – Emitter Saturation Voltage *	I_C = 2.5A, I_B = 250mA	$\mathbf{V_{CE(Sat)}}$	—	—	0.75	Volts
	I_C = 5.0A, I_B = 500mA		—	—	1.5	
Base – Emitter Saturation Voltage *	I_C = 2.5A, I_B = 250mA	$\mathbf{V_{BE(Sat)}}$	—	—	1.3	Volts
	I_C = 5.0A, I_B = 500mA		—	—	1.5	
Current Gain Bandwidth Product	V_{CE} = 5V, I_C = 0.5A, f = 10MHz	$\mathbf{f_T}$	70	—	—	MHz
Output Capacitance	V_{CB} = 10V, I_E = 0A, f = 1MHz	$\mathbf{c_{ob}}$	—	—	225	pF
Input Capacitance	V_{BE} = 10V, I_C = 0A, f = 1MHz	$\mathbf{C_{ib}}$	—	—	900	pF
Delay Time	V_{CC} = 50V, I_C = 5A, I_{B1} = I_{B2} = 0.5A	$\mathbf{t_d}$	—	—	50	nsec
Rise Time		$\mathbf{t_r}$	—	—	250	nsec
Storage Time		$\mathbf{t_S}$	—	—	900	nsec
Fall Time		$\mathbf{t_f}$	—	—	300	nsec

NOTES:

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

1/ For Ordering Information, Price, 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 Part Numbers:

SFT502
SFT504

PIN ASSIGNMENT

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