



**SOLID STATE DEVICES, INC.**  
 14830 Valley View Blvd \* La Mirada, Ca 90638  
 Phone: (562) 404-7855 \* Fax: (562) 404-1773

**SFT501/G and SFT503/G  
 SERIES**

**5 AMP  
 200 VOLTS  
 PNP HIGH SPEED  
 POWER TRANSISTOR**

**DESIGNER'S DATA SHEET**

**Part Number /Ordering Information <sup>1/</sup>**

SFT501 / G \_ TX  
 SFT503 / G \_ TX

Screening <sup>2/</sup>: \_ = Not Screened  
 TX = TX Level  
 TXV = TXV Level  
 S = Space Level  
 Polarity: \_ = Normal  
 R = Reverse  
 Package: <sup>3/</sup> G = Cerpack

**FEATURES**

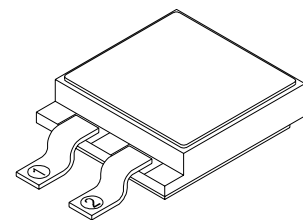
- BV<sub>CEO</sub> 150V Minimum
- Fast Switching
- High Frequency, 80MHz Typical
- High Linear Gain (SFT503/G)
- Low Saturation Voltage and Leakage
- 200°C Operating, Gold Eutectic Die Attach
- Designed for Complimentary Use with SFT502/G and SFT504/G

MAXIMUM RATINGS	SYMBOL	VALUE	UNITS
Collector-Base Voltage	V <sub>CB0</sub>	200	Volts
Collector-Emitter Voltage	V <sub>CEO</sub>	150	Volts
Emitter-Base Voltage	V <sub>EBO</sub>	7.0	Volts
Continuous Collector Current	I <sub>C</sub>	5.0	Amps
Base Current	I <sub>B</sub>	1.0	Amps
Operating and Storage Temperature	T <sub>J</sub> , T <sub>STG</sub>	-65 to +200	°C
Total Device Dissipation @ T <sub>C</sub> = 100°C Derate above 100°C	P <sub>D</sub>	10 0.10	W W/°C
Thermal Resistance, Junction to Case	R <sub>θJC</sub>	1.8	°C/W

**Available Part Numbers:**

SFT501/G  
 SFT503/G  
 SFT501/GR  
 SFT503/GR

**Cerpack**



**PIN ASSIGNMENT**

CODE	FUNCTION	BASE	PIN 1	PIN 2
-	Normal	Collector	Emitter	Base
R	Reverse	Collector	Base	Emitter

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

**DATA SHEET #: TR0018C**

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ELECTRICAL CHARACTERISTICS <sup>4/</sup>		SYMBOL	MIN	MAX	UNITS
Collector-Emitter Breakdown Voltage ( $I_C = 50\text{mA}$ )		$BV_{CEO}$	150	-	V
Collector-Base Breakdown Voltage ( $I_C = 200\ \mu\text{A}$ )		$BV_{CBO}$	200	-	V
Emitter-Base Breakdown Voltage ( $I_E = 200\ \mu\text{A}$ )		$BV_{EBO}$	7	-	V
Collector Cutoff Current ( $V_{CB} = 100\ V_{DC}$ )		$I_{CBO}$	-	500	nA
Collector Cutoff Current ( $V_{CE} = 100\ V_{DC}$ )		$I_{CEO}$	-	1	$\mu\text{A}$
Emitter Cutoff Current ( $V_{EB} = 6\ V_{DC}$ )		$I_{EBO}$	-	500	nA
DC Current Gain* ( $V_{CE} = 5.0V_{DC}$ ) (SFT501) $(I_C = 50\ \text{mA}_{DC})$ $(I_C = 2.5\ \text{A}_{DC})$ (SFT503) $(I_C = 50\ \text{mA}_{DC})$ $(I_C = 2.5\ \text{A}_{DC})$ $(I_C = 5.0\ \text{A}_{DC})$		$h_{FE}$	20 30 20 50 50 40	- - - - - -	
Collector-Emitter Saturation Voltage* ( $I_C = 2.5\ \text{A}_{DC}, I_B = 250\ \text{mA}_{DC}$ ) ( $I_C = 5.0\ \text{A}_{DC}, I_B = 500\ \text{mA}_{DC}$ )		$V_{CE(SAT)}$	-	0.75 1.5	$V_{DC}$
Base-Emitter Saturation Voltage* ( $I_C = 2.5\ \text{A}_{DC}, I_B = 250\ \text{mA}_{DC}$ ) ( $I_C = 5.0\ \text{A}_{DC}, I_B = 500\ \text{mA}_{DC}$ )		$V_{BE(SAT)}$	-	1.3 1.5	$V_{DC}$
Current Gain Bandwidth Product ( $I_C = 500\ \text{mA}_{DC}, V_{CE} = 5\ V_{DC}, f = 10\ \text{MHz}$ )		$f_T$	70	-	MHz
Output Capacitance ( $V_{CB} = 10\ V_{DC}, I_E = 0\ \text{A}_{DC}, f = 1.0\ \text{MHz}$ )		$C_{ob}$	-	225	pf
Input Capacitance ( $V_{BE} = 10\ V_{DC}, I_C = 0\ \text{A}_{DC}, f = 1.0\ \text{MHz}$ )		$C_{ib}$	-	600	pf
Delay Time	$(V_{CC} = 50\ V_{DC}, I_C = 5\ \text{A}_{DC}, I_{B1} = I_{B2} = 500\ \text{mA}_{DC})$	$t_d$	-	50	ns
Rise Time		$t_r$	-	250	ns
Storage Time		$t_s$	-	900	ns
Fall Time		$t_f$	-	300	ns

## NOTES:

- \* Pulse Test: Pulse Width = 300  $\mu\text{s}$ , 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/ All Electrical Characteristics @ 25°C, Unless Otherwise Specified.