



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

**DESIGNER'S DATA SHEET**

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

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

**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**

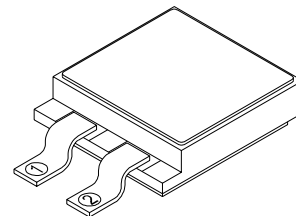
- **BV<sub>CEO</sub> 150V Minimum**
- **Fast Switching**
- **High Frequency, 80MHz Typical**
- **High Linear Gain (SFT503/G)**
- **Low Saturation Voltage and Leakage**
- **200°C Operating, Gold Eutectic Die Attach**
- **Designed for Complimentary Use with SFT502/G and SFT504/G**

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 ( $I_C = 50_{mA}$ )		$BV_{CEO}$	150	-	V
Collector-Base Breakdown Voltage ( $I_C = 200 \mu A$ )		$BV_{CBO}$	200	-	V
Emitter-Base Breakdown Voltage ( $I_E = 200 \mu A$ )		$BV_{EBO}$	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	$\mu A$
Emitter Cutoff Current ( $V_{EB} = 6 V_{DC}$ )		$I_{EBO}$	-	500	nA
DC Current Gain* ( $V_{CE} = 5.0V_{DC}$ ) (SFT501)	( $I_C = 50 mA_{DC}$ )	$h_{FE}$	20	-	
	( $I_C = 2.5 A_{DC}$ )		30	-	
	( $I_C = 5.0 A_{DC}$ )		20	-	
(SFT503)	( $I_C = 50 mA_{DC}$ )		50	-	
	( $I_C = 2.5 A_{DC}$ )		50	-	
	( $I_C = 5.0 A_{DC}$ )		40	-	
Collector-Emitter Saturation Voltage* ( $I_C = 2.5 A_{DC}, I_B = 250 mA_{DC}$ ) ( $I_C = 5.0 A_{DC}, I_B = 500 mA_{DC}$ )		$V_{CE(SAT)}$	-	0.75 1.5	$V_{DC}$
Base-Emitter Saturation Voltage* ( $I_C = 2.5 A_{DC}, I_B = 250 mA_{DC}$ ) ( $I_C = 5.0 A_{DC}, I_B = 500 mA_{DC}$ )		$V_{BE(SAT)}$	-	1.3 1.5	$V_{DC}$
Current Gain Bandwidth Product ( $I_C = 500 mA_{DC}, V_{CE} = 5 V_{DC}, f = 10 MHz$ )		$f_T$	70	-	MHz
Output Capacitance ( $V_{CB} = 10 V_{DC}, I_E = 0 A_{DC}, f = 1.0 MHz$ )		$C_{ob}$	-	225	pf
Input Capacitance ( $V_{BE} = 10 V_{DC}, I_C = 0 A_{DC}, f = 1.0 MHz$ )		$C_{ib}$	-	600	pf
Delay Time	( $V_{CC} = 50 V_{DC}, I_C = 5 A_{DC}, I_{B1} = I_{B2} = 500 mA_{DC}$ )	$t_d$	-	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  $\mu s$ , 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.