



Solid State Devices, Inc.

14701 Firestone Blvd * La Mirada, CA 90638
Phone: (562) 404-4474 * Fax: (562) 404-1773
ssdi@ssdi-power.com * www.ssdi-power.com

SFT502/G and SFT504/G Series

DESIGNER'S DATA SHEET

Part Number / Ordering Information ^{1/}

SFT502/
SFT504/

Screening ^{2/} ___ = No Screening

TX = TX Level

TXV = TXV Level

S = S Level

Polarity ___ = Normal

R = Reverse

Package

G = CERPACK

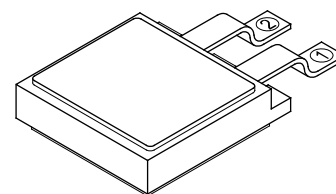
5 AMP, 200 Volts NPN HIGH SPEED POWER TRANSISTOR

Features:

- BV_{CEO} 150 V Minimum
- Fast Switching
- High Frequency, 50 MHz Typical
- High Linear Gain (SFT504G)
- Low Saturation Voltage and Leakage
- 200°C Operating Temperature
- Gold Eutectic Die Attach
- TX, TXV, S-Level Screening Available
- Designed for Complementary Use with SFT501/G and SFT503/G

Maximum Ratings ^{3/}	Symbol	Max	Units
Collector – Base Voltage	V_{CBO}	200	Volts
Collector – Emitter Voltage	V_{CEO}	150	Volts
Emitter – Base Voltage	V_{EBO}	7.0	Volts
Continuous Collector Current	I_C	5.0	Amps
Base Current	I_B	1.0	Amps
Operating & Storage Temperature	T_J & T_{STG}	-65 to +200	°C
Total Power Dissipation @ $T_C = 100^\circ\text{C}$ Derate above 100°C	P_D	10 0.10	W W/°C
Thermal Resistance (Junction to Case)	$R_{\theta JC}$	2.4	°C/W

CERPACK (G)



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

DATA SHEET #: TR0078C

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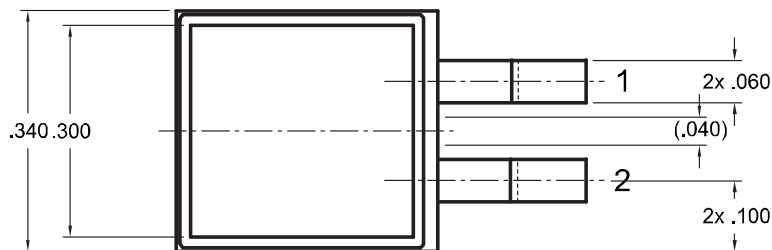
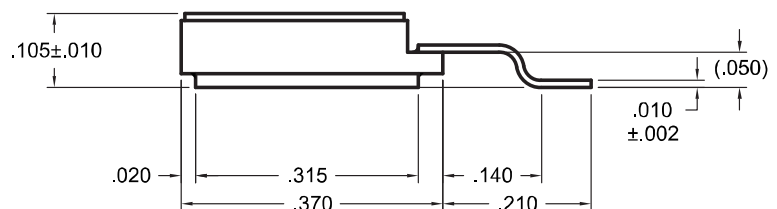
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Electrical Characteristics ^{3/}		Symbol	Min	Max	Units
Collector – Emitter Breakdown Voltage	$I_C = 50 \text{ mA}$	BV_{CEO}	150	-	Volts
Collector – Base Breakdown Voltage	$I_C = 200 \text{ } \mu\text{A}$	BV_{CBO}	200	-	Volts
Emitter – Base Breakdown Voltage	$I_E = 200 \text{ } \mu\text{A}$	BV_{EBO}	7	-	Volts
Collector Cutoff Current	$V_{CB} = 100 \text{ V}$	I_{CBO}	-	500	nA
Collector Cutoff Current	$V_{CE} = 100 \text{ V}$	I_{CEO}	-	1	μA
Emitter Cutoff Current	$V_{EB} = 6 \text{ V}$	I_{EBO}	-	500	nA
DC Current Gain* $V_{CE} = 5 \text{ V}$ SFT502	$I_C = 50 \text{ mA}$	H_{FE}	20	-	
	$I_C = 2.5 \text{ A}$		30	-	
	$I_C = 5.0 \text{ A}$		20	-	
SFT504	$I_C = 50 \text{ mA}$		50	-	
	$I_C = 2.5 \text{ A}$		50	-	
	$I_C = 5 \text{ A}$		40	-	
Collector-Emitter Saturation Voltage*	$I_C = 2.5 \text{ A}, I_B = 250 \text{ mA}$ $I_C = 5.0 \text{ A}, I_B = 500 \text{ mA}$	$V_{CE(SAT)}$	- -	0.75 1.5	V
Base-Emitter Saturation Voltage*	$I_C = 2.5 \text{ A}, I_B = 250 \text{ mA}$ $I_C = 5.0 \text{ A}, I_B = 500 \text{ mA}$	$V_{BE(SAT)}$	- -	1.3 1.5	V
Current Gain Bandwidth Product*	$I_C = 500 \text{ mA}, V_{CE} = 5 \text{ V}, f = 10 \text{ MHz}$	f_T	70	-	MHz
Output Capacitance	$V_{CB} = 10 \text{ V}, I_E = 0 \text{ A}, f = 1.0 \text{ MHz}$	C_{ob}	-	225	pF
Input Capacitance	$V_{CB} = 10 \text{ V}, I_C = 0 \text{ A}, f = 1.0 \text{ MHz}$	C_{ib}	-	900	pF
Delay Time	$V_{CC} = 50 \text{ V}$ $I_C = 5 \text{ A}$ $I_{B1} = I_{B2} = 500 \text{ mA}$	t_d	-	50	ns
Rise Time		t_r	-	250	ns
Storage Time		t_s	-	1200	ns
Fall Time		t_f	-	300	ns

CASE OUTLINE: CERPACK



BOTTOM VIEW

NOTES:

*Pulse Test: Pulse Width = 300 μs , 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/ Unless otherwise specified, maximum ratings/electrical characteristics at 25°C.

PIN ASSIGNMENT

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

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