Solid State Devices, Inc.
14701 Firestone Blvd * La Mirada, CA 90638
Phone: (562) 404-4474 * Fax: (562) 404-1773
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SFT502/G and SFT504/G Series

DESIGNER'S DATA SHEET

5 AMP, 200 Volts NPN HIGH SPEED POWER TRANSISTOR

Part Number / Ordering Information [1/]

SFT502/
SFT504/ ___

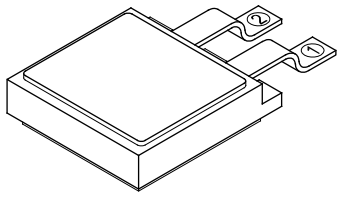
- **Screening** [2/] __ = No Screening, TX = TX Level, TXV = TXV Level, S = S Level
- **Polarity** __ = Normal, R = Reverse
- **Package** G = CERPACK

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	**ºC**
Total Power Dissipation @ T_C = 100ºC **Derate above 100ºC**	P_D	10 0.10	**W** **W/ºC**
Thermal Resistance (Junction to Case)	$R_{\theta JC}$	2.4	**ºC/W**

CERPACK (G)



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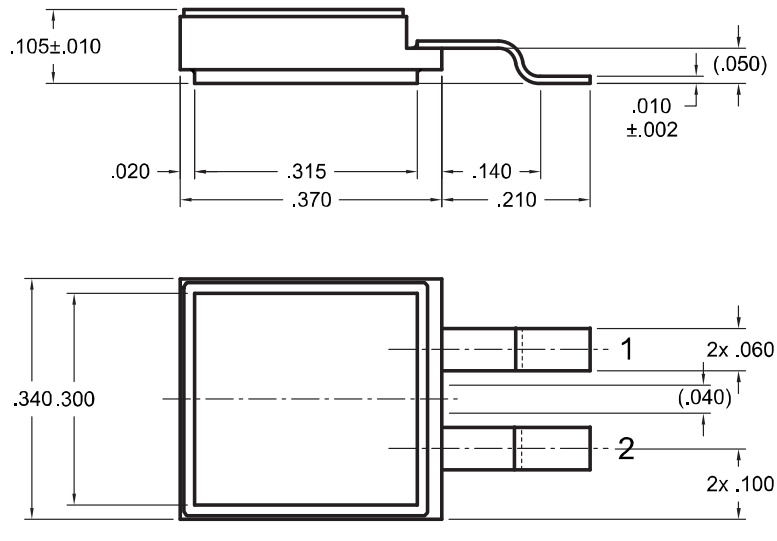
Electrical Characteristics[3/]		Symbol	Min	Max	Units
Collector – Emitter Breakdown Voltage	I_C = 50 mA	BV_{CEO}	150	-	Volts
Collector – Base Breakdown Voltage	I_C = 200 µA	BV_{CBO}	200	-	Volts
Emitter – Base Breakdown Voltage	I_E = 200 µA	BV_{EBO}	7	-	Volts
Collector Cutoff Current	V_{CB} = 100 V	I_{CBO}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

CASE OUTLINE: CERPACK



BOTTOM VIEW

NOTES:
*Pulse Test: Pulse Width = 300µs, 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