



Solid State Devices, Inc.

14701 Firestone Blvd * La Mirada, CA 90638
 Phone: (562) 404-7855 * Fax: (562) 404-1773
 ssdi@ssdi-power.com * www.ssdi-power.com

DESIGNER'S DATA SHEET

Part Number / Ordering Information ^{1/}

SFT5094

SFT5096

Screening ^{2/}

— = No Screening

TX = TX Level

TXV = TXV Level

S = S Level

Package ^{3/}

-4 = 4 Pin CLCC

/5 = TO-5

G = CERPACK

S.22 = SMD.22

S.22C = SMD.22C (ceramic lid)

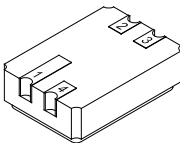
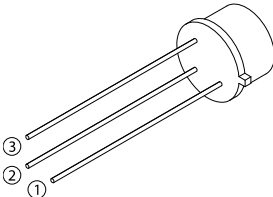
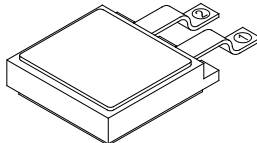
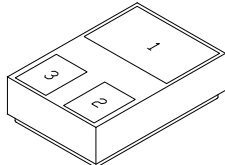
SFT5094 and SFT5096 Series

1 AMP, 500 Volts High Voltage PNP Transistor

Features:

- BV_{CER} to 500 Volts
- Low Leakage at High Temperature
- High Linear Gain, Low Saturation Voltage
- 200°C Operating Temperature
- Gold Eutectic Die Attach
- TX, TXV, S-Level Screening Available
- Designed for Complementary Use with SFT5013 thru SFT5014
- Replacement for 2N3743, 2N5094 and 2N5096 with Lower Thermal Resistance
- Available with TO-5, Cerpack, CLCC, and SMD.22 Cases
- Available as an SMD.22 with ceramic lid for improved high voltage isolation

Maximum Ratings ^{4/}	Symbol	SFT5094	SFT5096	Units
Collector – Emitter Voltage ($R_{BE} = 1k\Omega$)	V_{CEO} V_{CER}	350 450	400 500	Volts Volts
Collector – Base Voltage	V_{CBO}	450	500	Volts
Emitter – Base Voltage	V_{EBO}	6		Volts
Collector Current	I_C	1.0		Amps
Base Current	I_B	0.5		Amps
Total Power Dissipation ($T_C = 25^\circ C$) ($T_A = 25^\circ C$)	P_D	1.0 0.4 5.7		Watts Watts mW/°C
Derate above $T_C = 25^\circ C$				
Operating & Storage Temperature	T_J & T_{STG}	-65 to +200		°C
Maximum Thermal Resistance (Junction to Case)	$R_{\theta JC}$	4 Pin CLCC TO-5 CERPACK SMD.22 / SMD.22C	175 30 9 9	°C/W °C/W °C/W
Maximum Thermal Resistance (Junction to Ambient)	$R_{\theta JA}$	4 Pin CLCC TO-5 CERPACK SMD.22 / SMD.22C	440 --- 440 440	°C/W °C/W °C/W

4 Pin CLCC (-4)	TO-5 (/5)	CERPACK (G)	SMD.22 (S.22) or SMD.22C (S.22C)
			

- NOTES:** 1/ For ordering information, price, operating curves, and availability, contact factory.
 2/ Screening based on MIL-PRF-19500. Screening flows available on request.
 3/ For package outlines, see figure 1.
 4/ Unless otherwise specified, maximum ratings / electrical characteristics at 25°C.

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

DATA SHEET #: TR0081G

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SFT5094 and SFT5096 Series

Electrical Characteristics ^{4/}	Symbol	Min	Max	Units	
Collector – Emitter Breakdown Voltage* (I_C = 5 mA) (I_C = 100 μA, R_{BE} = 1k Ω)	BV_{CEO} BV_{CER}	SFT5094 350 450	SFT5096 400 500	— —	Volts
Collector – Base Breakdown Voltage* (I _C = 100 μA)	BV_{CBO}	450	500	—	Volts
Emitter – Base Breakdown Voltage (I _E = 50 μA)	BV_{EBO}	6		—	Volts
Collector Cutoff Current (V_{CB} = Rated, T_A = 25°C) (V_{CB} = Rated, T_A = 100°C)	I_{CBO1} I_{CBO2}	— —		1.0 50	μA
Emitter Cutoff Current (V _{EB} = 6 V)	I_{EBO}	—		1.0	μA
DC Current Gain* (I_C = 1 mA, V_{CE} = 10 V) (I_C = 25 mA, V_{CE} = 10 V) (I_C = 100 mA, V_{CE} = 10 V)	H_{FE}	20 40 20		250 300 250	
Collector-Emitter Saturation Voltage * (I _C = 25 mA, I _B = 2.5 mA)	V_{CE (SAT)}	—		500	mV
Base-Emitter Saturation Voltage (I _C = 25 mA, I _B = 2.5 mA)	V_{BE (SAT)}	—		1.0	Volts
Current Gain Bandwidth Product * (I _C = 10 mA, V _{CE} = 10 V, f = 10 MHz)	f_T	25		—	MHz
Output Capacitance V _{CB} = 20 V, I _E = 0 A, f = 1.0MHz	C_{ob}	—		10	pF
Turn on Delay Time V _{CC} = 100 V	T_d	—		500	ns
Rise Time I _C = 100 mA	T_r	—		1200	ns
Storage Time I _{B1} = I _{B2} = 10 mA	T_s	—		2.0	μs
Fall Time	t_f	—		500	ns

Notes: * Pulse Test: Pulse Width = 300 μs . Duty Cycle = 2%.

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3/ For package outlines, see figure 1.

4/ Unless otherwise specified, maximum ratings / electrical characteristics at 25°C.

PIN ASSIGNMENT (Standard)

Package	Collector	Emitter	Base
4 Pin CLCC (-4)	Pin 1	Pin 2	Pin 3
TO-5 (/5)	Pin 3	Pin 1	Pin 2
CERPACK (G)	Case	Pin 1	Pin 2
SMD.22 (S.22)	Pin 1	Pin 2	Pin 3

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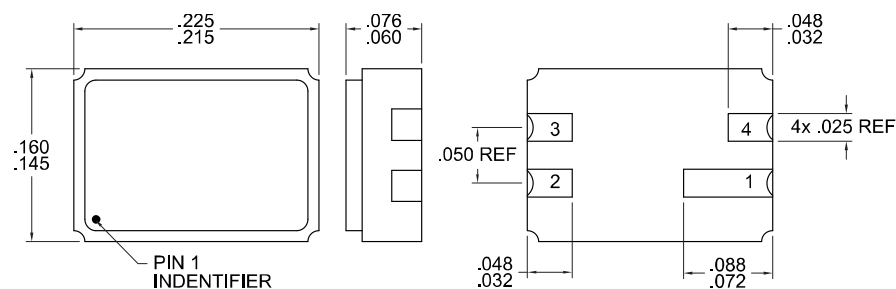
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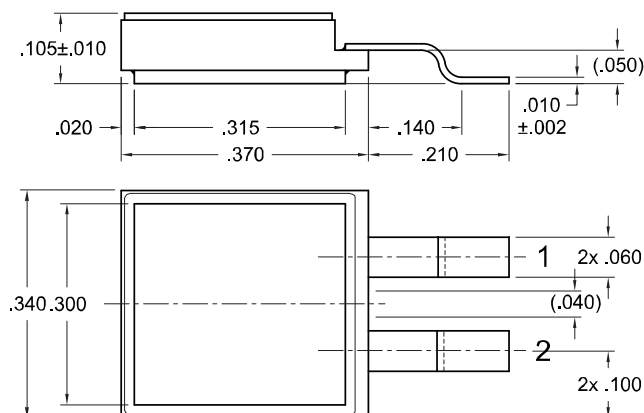
SFT5094 and SFT5096 Series

FIGURE 1 – CASE OUTLINES (dimensions in inches)

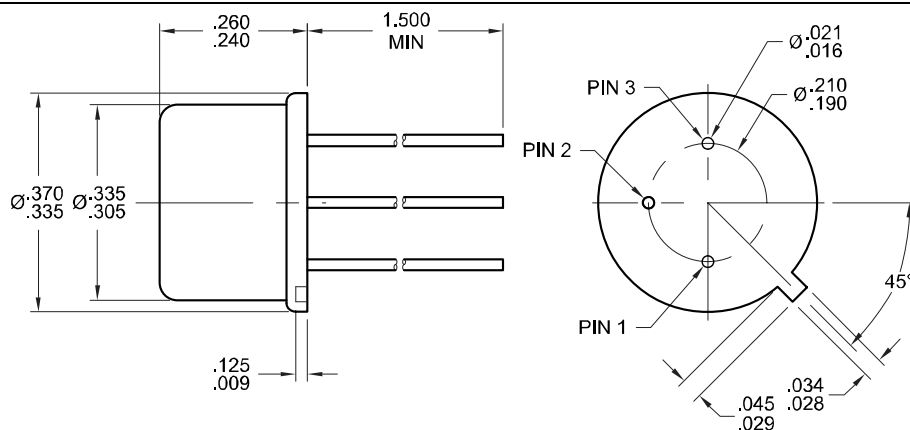
4 Pin CLCC (-4):



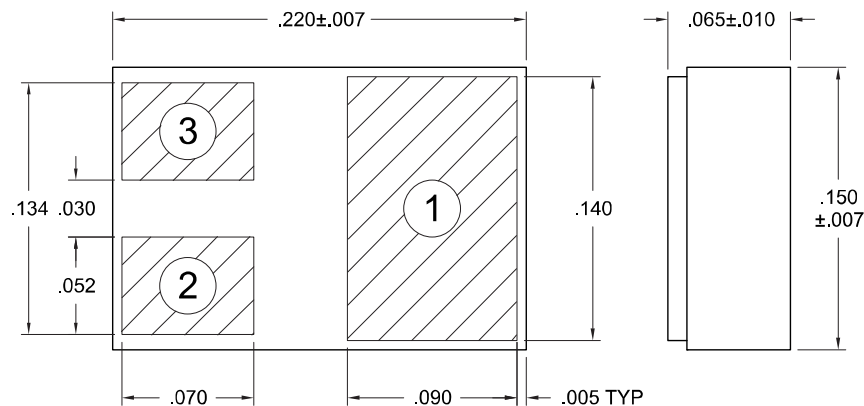
CERPACK (G):



TO-5 (/5):



**SMD.22 (S.22) or
SMD.22C (S.22C):**



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