

SFT5094, SFT5096 and SFT5096A Series

**1 Amp, 500 Volts
High Voltage PNP Transistor**

DESIGNER'S DATA SHEET

Part Number / Ordering Information ^{1/}

SFT5094
SFT5096
SFT5096A

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)
 S.5 = SMD.5

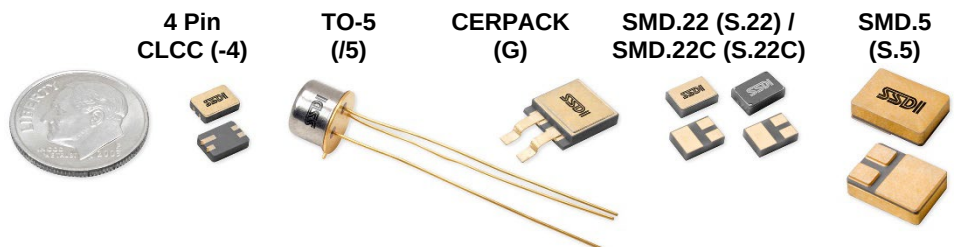
Features:

- BV_{CER} to 550 Volts
- Low Leakage at High Temperature
- High Linear Gain, Low Saturation Voltage
- 200°C Operating Temperature
- Gold Eutectic Die Attach
- TX, TXV, and S-Level Screening Available
- Designed for Complementary Use with SFT5013 thru SFT5014
- Replacement for 2N3743, 2N5094 and 2N5096 with Lower Thermal Resistance
- Available in TO-5, Cerpack, CLCC, SMD.5 and SMD.22 Packages
- Available as an SMD.22 with ceramic lid for improved high voltage isolation

Maximum Ratings ^{4/}	Symbol	SFT5094	SFT5096	SFT5096A	Unit
Collector – Emitter Voltage (R _{BE} = 1kΩ)	V _{CEO}	350	400	550	V
	V _{CER}	450	500	550	V
Collector – Base Voltage	V _{CBO}	450	500	550	V
Emitter – Base Voltage	V _{EBO}	6	6	12	V
Collector Current	I _C	1.0			A
Base Current	I _B	0.5			A
Total Power Dissipation T _C = 25°C 4 Pin CLCC TO-5 CERPACK SMD.22 / SMD.22C SMD.5	P_D	1.0			W
		5.8			W
		19.4			W
		19.4			W
		35			W
Operating & Storage Temperature	T _J & T _{STG}	-65 to +200			°C
Maximum Thermal Resistance (Junction to Case) 4 Pin CLCC TO-5 CERPACK SMD.22 / SMD.22C SMD.5	R_{θJC}	175			°C/W
		30			°C/W
		9			°C/W
		9 (SFT5096A: typ 5)			°C/W
		5			°C/W
Maximum Thermal Resistance (Junction to Ambient) 4 Pin CLCC TO-5 CERPACK SMD.22 / SMD.22C	R_{θJA}	440			°C/W
		---			°C/W
		440			°C/W
		440			°C/W

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.



*Dime used for size reference

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

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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

SFT5094, SFT5096 and SFT5096A Series

Electrical Characteristics ^{4/}		Symbol	Min			Max	Unit
Collector – Emitter Breakdown Voltage*	(I _C = 5 mA)	BV _{CEO}	SFT5094 350	SFT5096 400	SFT5096A 550	—	V
	(I _C = 100 μA, R _{BE} = 1 kΩ)	BV _{CER}	450	500	550	—	
Collector – Base Breakdown Voltage*	(I _C = 100 μA)	BV _{CBO}	450	500	550	—	V
Emitter – Base Breakdown Voltage	(I _E = 50 μA)	BV _{EBO}	6	6	12	—	V
Collector Cutoff Current	(V _{CB} = Rated, T _A = 25°C)	I _{CBO1}	—			1.0	μA
	(V _{CB} = Rated, T _A = 100°C)	I _{CBO2}	—			50	
Emitter Cutoff Current	(V _{EB} = 6 V)	I _{EBO}	—			1.0	μA
DC Current Gain*	(I _C = 1 mA, V _{CE} = 10 V)	H _{FE}	20			250	
	(I _C = 25 mA, V _{CE} = 10 V)		40			300	
	(I _C = 100 mA, V _{CE} = 10 V)		20			250	
Collector-Emitter Saturation Voltage* (I _C = 25 mA, I _B = 2.5 mA)	SFT5094, SFT5096 SFT5096A	V _{CE(SAT)}	—			500 100	mV
Base-Emitter Saturation Voltage (I _C = 25 mA, I _B = 2.5 mA)	SFT5094, SFT5096 SFT5096A	V _{BE(SAT)}	—			1.00 0.75	V
Current Gain Bandwidth (I _C = 10 mA, V _{CE} = 10 V, f = 10 MHz)	SFT5094, SFT5096 SFT5096A	f _T	25 (typ. 40) 40 (typ. 50)			—	MHz
Output Capacitance (V _{CB} = 20 V, I _E = 0 A, f = 1.0 MHz)	SFT5094, SFT5096 SFT5096A, 5094G, 5096G SFT5096AG	C _{ob}	—			10 15 25	pF
Turn on Delay Time	V _{CC} = 100 V I _C = 100 mA I _{B1} = I _{B2} = 10 mA	t _d	(typ. 50)			500	ns
Rise Time		t _r	(typ. 130)			1200	ns
Storage Time		t _s	(typ. 1.15) (typ. 3.8)			2.0 4.0	μs μs
Fall Time		t _f	(typ. 350) (typ. 470)			500 750	ns ns

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

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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.

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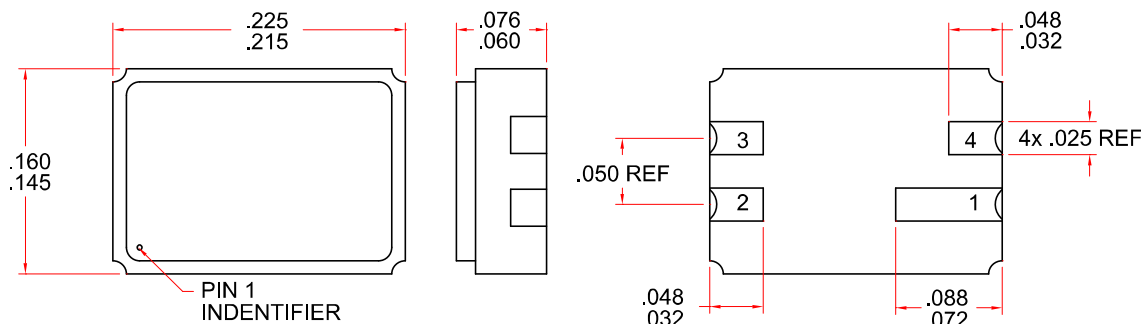
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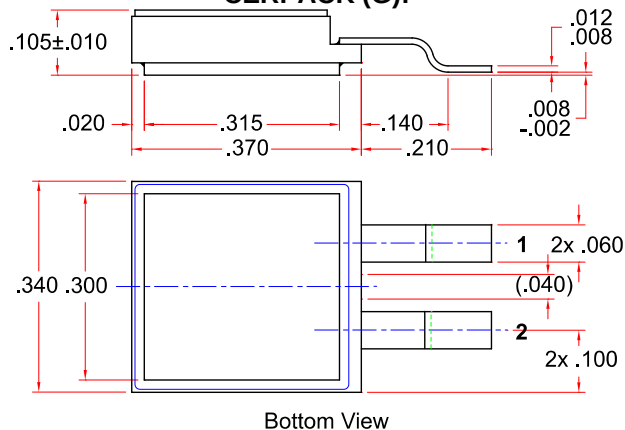
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FIGURE 1 – CASE OUTLINES (dimensions in inches)

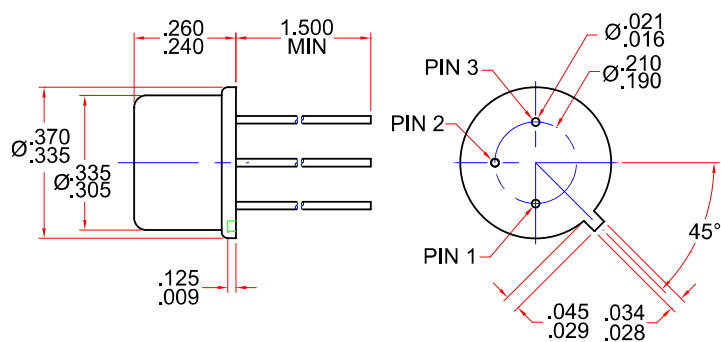
4 Pin CLCC (-4):



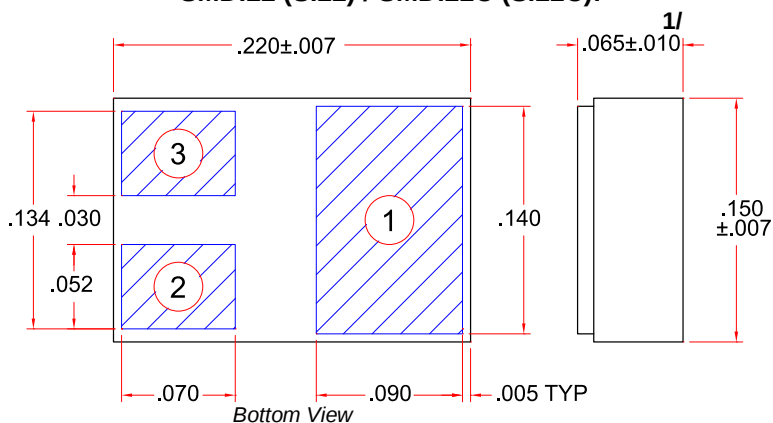
CERPACK (G):



TO-5 (I5):

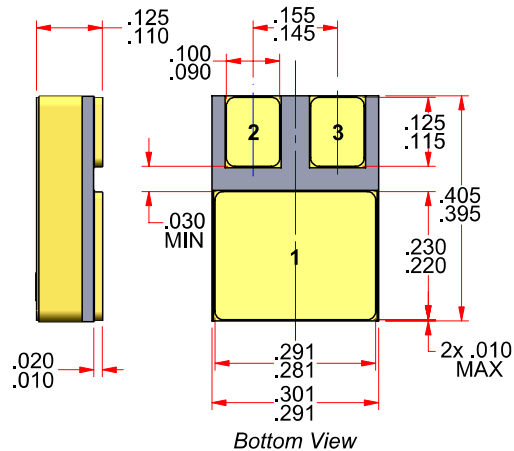


SMD.22 (S.22) / SMD.22C (S.22C):



1/ Note: For SMD.22C (Ceramic Lid) Package Height = .070±.010"

SMD.5 (S.5)



PIN ASSIGNMENT (Standard)

Package	Collector	Emitter	Base
4 Pin CLCC (-4)	Pin 1	Pin 2	Pin 3
TO-5 (I5)	Pin 3	Pin 1	Pin 2
CERPACK (G)	Case	Pin 1	Pin 2
SMD.22 (S.22)	Pin 1	Pin 2	Pin 3
SMD.5 (S.5)	Pin 1	Pin 2	Pin 3

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