



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/}

SFTN5094

SFTN5096

Screening ^{2/} = No Screening

TX = TX Level

TXV = TXV Level

S = S Level

Package ^{3/} -4 = 4 Pin CLCC

/5 = TO-5

G = CERPAC

S22 = SMD.22

SFTN5096

1 AMP, 500 Volts High Voltage PNP Transistor

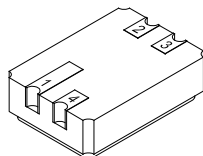
Features:

- 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 SFT5015
- Replacement for 2N5094 and 2N5096 with Lower Thermal Resistance
- Available with TO-5, Cerpack, CLCC, and SMD.22 Cases

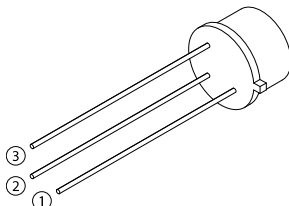
Maximum Ratings ^{4/}

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

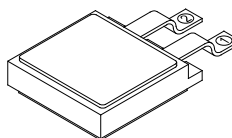
4 Pin CLCC (-4)



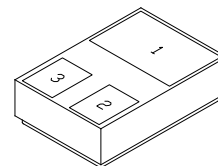
TO-5 (/5)



CERPAC (G)



SMD.22 (S22)



NOTES: 1/ For Ordering Information, Price, Operating Curves, and Availability Contact Factory.

2/ Screened to MIL-PRF-19500.

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 #: TR0124A

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Electrical Characteristics ^{4/}	Symbol	Min	Typ	Max	Units
Collector – Emitter Breakdown Voltage*	$I_C = 5 \text{ mA}$ BV_{CEO}	450	500	—	Volts
	$I_C = 100 \text{ } \mu\text{A}$, $R_{BE} = 1 \text{ k } \Omega$ BV_{CER}	500	—	—	
Collector – Base Breakdown Voltage*	$(I_C = 100 \text{ } \mu\text{A})$ BV_{CBO}	500		—	Volts
Emitter – Base Breakdown Voltage	$(I_E = 50 \text{ } \mu\text{A})$ BV_{EBO}	7.5		—	Volts
Collector Cutoff Current	$(V_{CB} = \text{Rated}, T_A = 25^\circ\text{C})$ I_{CB01}	—	0.01	1.0	μA
	$(V_{CB} = \text{Rated}, T_A = 100^\circ\text{C})$ I_{CB02}	—	0.1	50	
Emitter Cutoff Current	$(V_{EB} = 6 \text{ V})$ I_{EBO}	—	0.001	1.0	μA
DC Current Gain*	$I_C = 1 \text{ mA}$, $V_{CE} = 5 \text{ V}$	100	200	250	
	$I_C = 25 \text{ mA}$, $V_{CE} = 5 \text{ V}$	100	200	250	
	$I_C = 100 \text{ mA}$, $V_{CE} = 5 \text{ V}$	100	200	250	
	$I_C = 500 \text{ mA}$, $V_{CE} = 5 \text{ V}$	70	120	200	
	$I_C = 25 \text{ mA}$, $V_{CE} = 5 \text{ V}$, $T_A = -55^\circ\text{C}$	75	125	-	
Collector-Emitter Saturation Voltage*	$I_C = 25 \text{ mA}$, $I_B = 2.5 \text{ mA}$	—	60	100	mV
	$I_C = 250 \text{ mA}$, $I_B = 25 \text{ mA}$		135	175	
Base-Emitter Saturation Voltage	$I_C = 25 \text{ mA}$, $I_B = 2.5 \text{ mA}$	—	650	0.75	Volts
	$I_C = 250 \text{ mA}$, $I_B = 25 \text{ mA}$		750	0.85	
Current Gain Bandwidth Product*	$(I_C = 10 \text{ mA}$, $V_{CE} = 10 \text{ V}$, $f = 10 \text{ MHz})$ f_T	25	35	—	MHz
Output Capacitance	$V_{CB} = 20 \text{ V}$, $I_E = 0 \text{ A}$, $f = 1.0 \text{ MHz}$ C_{ob}	—	24	30	pF
Turn on Delay Time	$V_{CC} = 100 \text{ V}$ $I_C = 100 \text{ mA}$ $I_{B1} = I_{B2} = 10 \text{ mA}$	t_d	115	175	ns
Rise Time		t_r	170	250	ns
Storage Time		t_s	2.6	3.5	μs
Fall Time		t_f	250	300	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	Pin 1	Pin 2	Pin 3

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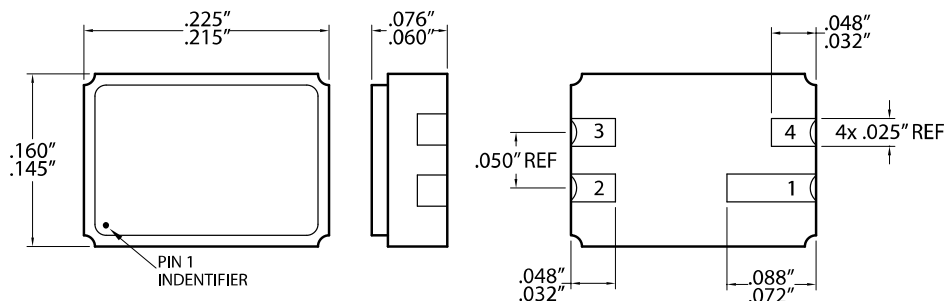
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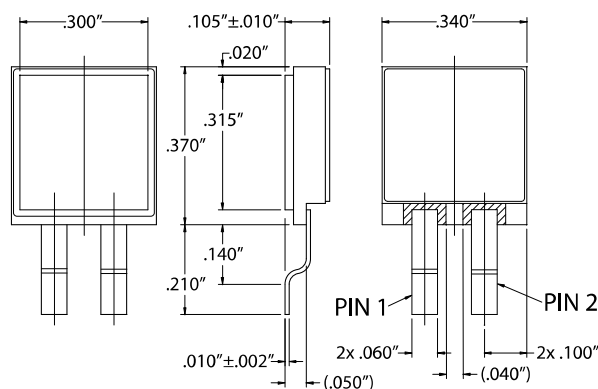
SFTN5096

FIGURE 1 – CASE OUTLINES

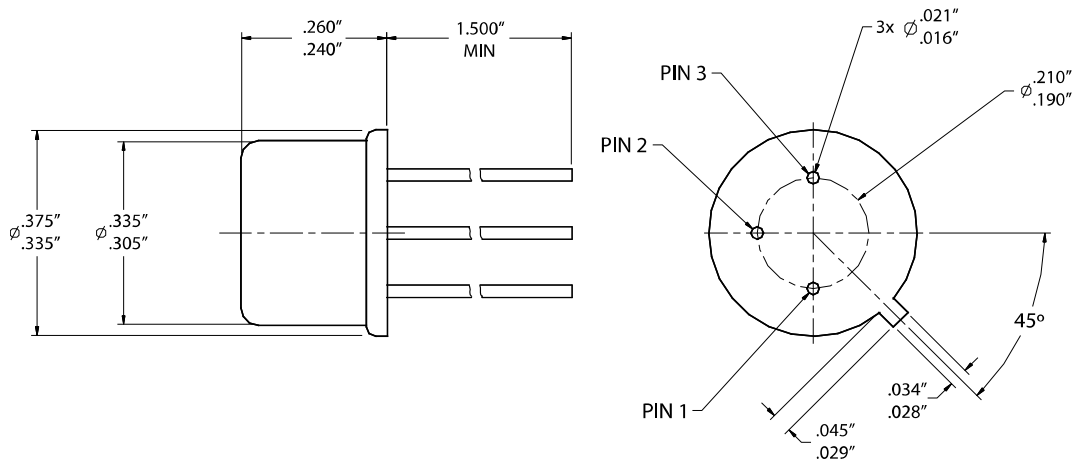
4 Pin CLCC (-4):



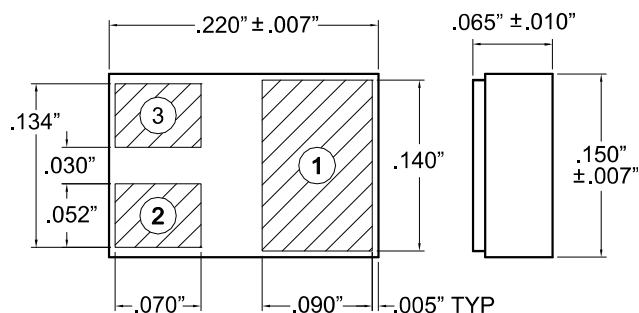
CERPACK (G):



TO-5 (/5):



SMD.22 (S22):



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