



Solid State Devices, Inc.

14701 Firestone Blvd * La Mirada, CA 90638

Phone: (562) 404-4474 * Fax: (562) 404-1773

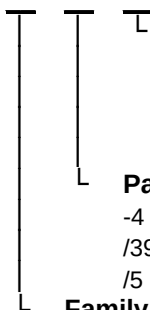
ssdi@ssdi-power.com * www.ssdi-power.com

SFT5013 and SFT5014 Series

DESIGNER'S DATA SHEET

Part Number / Ordering Information ^{1/}

SFT50



Screening ^{2/}

— = Not Screened

TX = TX Level

TXV = TXV Level

S = S Level

Package

-4 = LCC4 G = Cerpack

/39 = TO-39 S.22 = SMD.22

/5 = TO-5 S.22C = SMD.22C (ceramic lid)

Family / Voltage

13 = 800V 14 = 900V

**0.5 AMP, 800 – 900 Volts
NPN Transistor**

FEATURES:

- BV_{CER} to 900 volts
- Low Saturation Voltage
- Low Leakage at High Temperature
- High Gain, Low Saturation
- 200° C Operating, Gold Eutectic Die Attach
- 2N5010 thru 2N5012 Also Available, Contact Factory
- Designed for Complementary Use with SFT5094 and SFT5096
- TX, TXV, and S-Level Screening Available

Maximum Ratings		Symbol	Value	Unit
Collector – Emitter Voltage (R _{BE} = 1 kΩ)	5013	V _{CER}	800	V
	5014		900	
Collector – Base Voltage	5013	V _{CBO}	800	V
	5014		900	
Emitter – Base Voltage		V _{EBO}	5	V
Collector – Emitter Breakdown Voltage	5013	BV _{CEO}	300	V
	5014		400	
Peak Collector Current		I _C	0.5	A
Peak Base Current		I _B	250	mA
Total Device Dissipation @ T _C = 25°C @ T _A = 25°C Derate above T _C = 25°C @ T _C = 100°C Derate above T _C = 100°C @ T _C = 25°C @ T _C = 25°C	-4	P _D	1.0	W
			2.0	W
	/39 & /5		20	mW/°C
			2.0	W
	G		20	mW/°C
	S.22 / S.22C		17.5	W
Operating and Storage Temperature		T _{OP} & T _{STG}	-65 to +200	°C
	-4	R _{θJC} / R _{θJA}	175 / 440	°C/W
	/39 & /5	R _{θJC}	50 (typ 30)	
	G	R _{θJC}	10 (typ 5)	
Thermal Resistance, Junction to Case	S.22 / S.22C	R _{θJC}	12 (typ 9)	

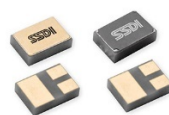
4 PIN CLCC (-4)

TO-39 (/39)

TO-5 (/5)

Cerpack (G)

SMD.22 (S.22) / 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/} Unless otherwise specified, maximum ratings/electrical characteristics at 25°C.

^{4/} Pulsed per MIL-STD-750.

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

DATA SHEET #: XN0031K

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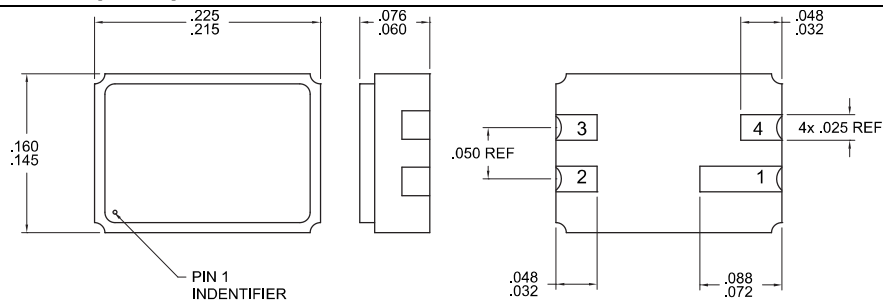
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SFT5013 and SFT5014 Series

Electrical Characteristic ^{3/}		Symbol	Min	Typ	Max	Unit
Collector – Emitter Breakdown Voltage (I _C = 200 μ A _{DC} , R _{BE} = 1 K Ω)	5013 5014	BV_{CER}	800 900	—	—	V
Collector–Base Breakdown Voltage (I _C = 200 μ A _{DC})	5013 5014	BV_{CBO}	800 900	—	—	V
Emitter–Base Breakdown Voltage (I _E = 50 μ A _{DC})		BV_{EBO}	5	11.5	—	V
Collector Cutoff Current (V _{CB} = 650 V) (V _{CB} = 700 V) (V _{CB} = 650 V, T _C = 100°C) (V _{CB} = 700 V, T _C = 100°C)	5013 5014 5013 5014	I_{CBO}	— — — —	— — — —	12 12 100 100	μAdc
Emitter Cutoff Current (V _{EB} = 4V)		I_{EBO}	—	0.001	20	μA
DC Current Gain ^{4/} (I _C = 5 mA _{DC} , V _{CE} = 10 V _{DC}) (I _C = 20 mA _{DC} , V _{CE} = 10 V _{DC})		h_{FE}	10 30	60 70	- 180	—
Collector – Emitter Saturation Voltage ^{4/} (I _C = 20 mA _{DC} , I _B = 5 mA _{DC})		V_{CE(Sat)}	—	0.07	1.6	Vdc
Base – Emitter Saturation Voltage ^{4/} (I _C = 20 mA _{DC} , I _B = 5 mA _{DC})		V_{BE(Sat)}	—	0.73	1.0	Vdc
Current Gain Bandwidth Product (I _C = 20 mA _{DC} , V _{CE} = 10 V _{DC} , f = 20 MHz)		f_T	20	30	—	MHz
Output Capacitance (V _{CB} = 10 V _{DC} , I _E = 0 A _{DC} , f = 1.0 MHz)		Cob	—	6.6	30	pF
Delay Time Rise Time Storage Time Fall Time	V _{CC} = 125 V _{DC} , I _C = 100 mA _{DC} , I _{B1} = 20 mA _{DC} , I _{B2} = 20 mA _{DC}	td tr ts tf	— — — —	50 200 2200 400	200 1200 3000 800	nsec

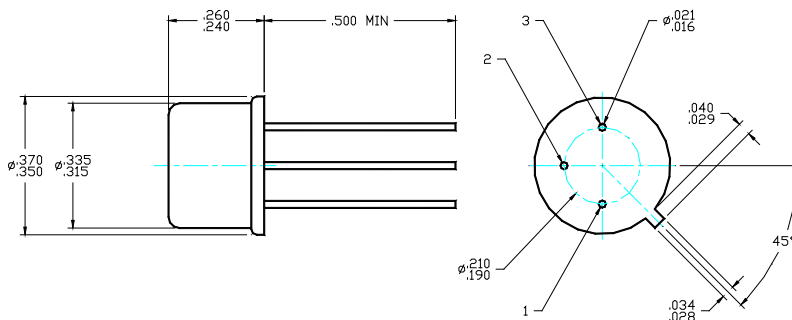
Case Outline: 4 PIN CLCC (LCC4)

PIN 1: COLLECTOR PIN 2: EMITTER PIN 3: BASE PIN 4: N/C



Case Outline: TO-39 (/39)

PIN 1: EMITTER PIN 2: BASE PIN 3: COLLECTOR



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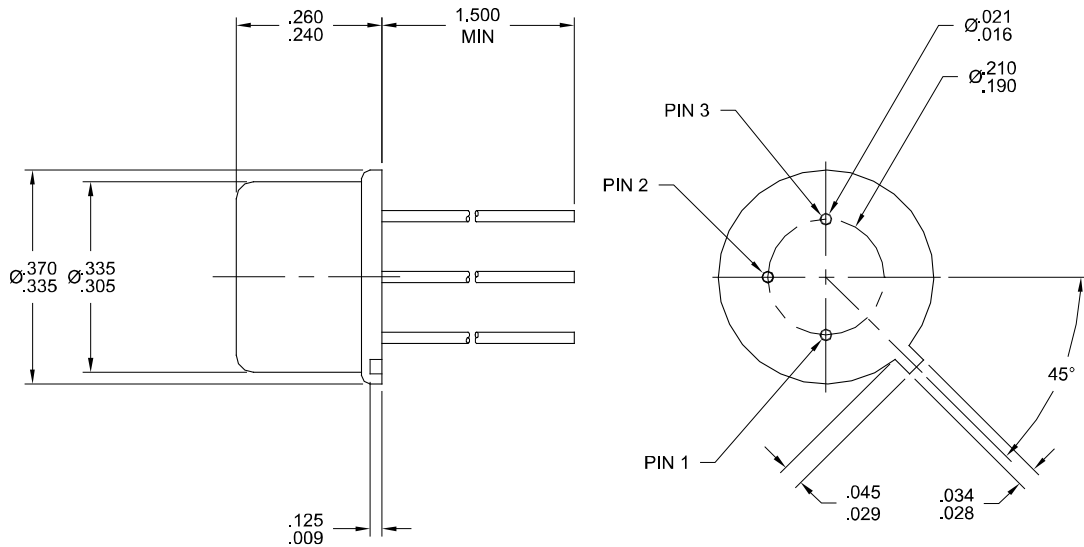
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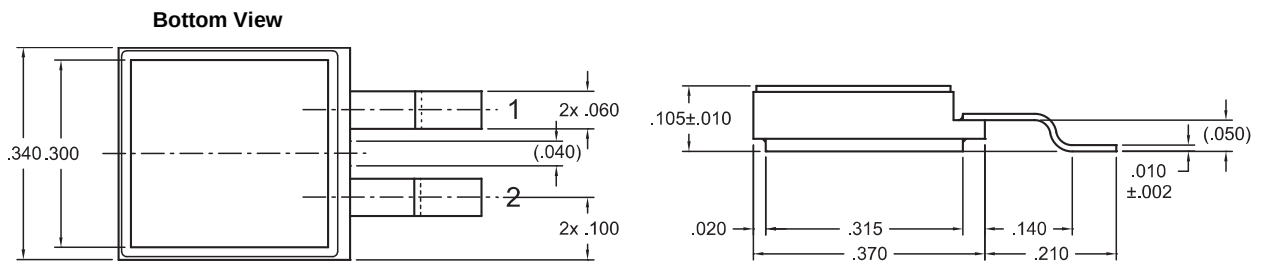
Case Outline: TO-5 (/5)

PIN 1: EMITTER PIN 2: BASE PIN 3: COLLECTOR



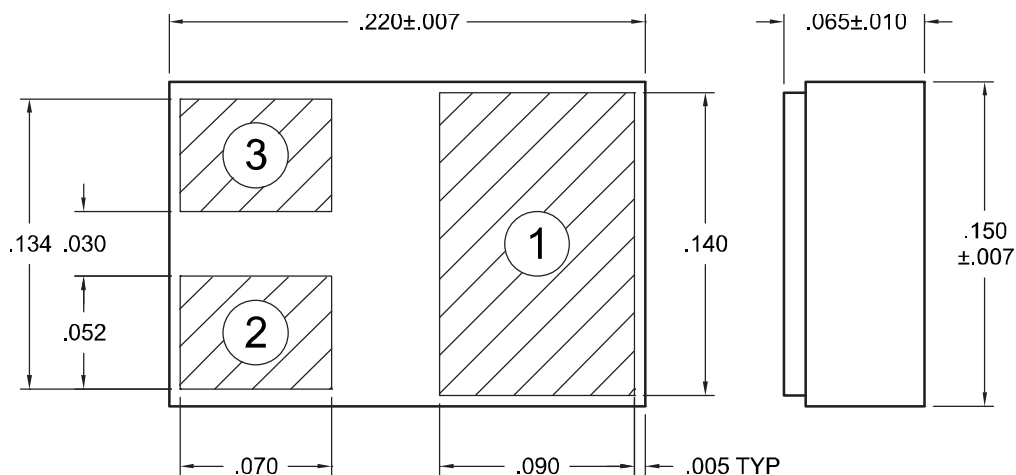
Case Outline: Cerpack (G)

PIN 1: EMITTER PIN 2: BASE BOTTOM TAB: COLLECTOR



Case Outline: SMD.22 (S.22) / SMD.22C (S.22C)*

PIN 1: COLLECTOR PIN 2: EMITTER PIN 3: BASE



***NOTE for SMD.22C (Ceramic Lid):
Package Height = .070±.010**

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