



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

0.5 AMP, 800 – 900 Volts NPN Transistor

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

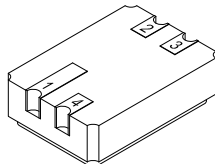
Family / Voltage

13 = 800V 14 = 900V

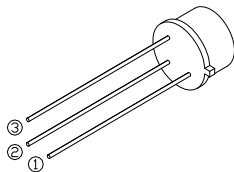
- FEATURES:**
- BV_{CER} to 900 volts
 - Low Saturation Voltage
 - Low Leakage at High Temperature
 - High Gain, Low Saturation
 - 200° C Operating, Gold Eutectic Die Attach
 - 2N5010 thru 2N5012 Also Available, Contact Factory
 - Designed for Complementary Use with SFT5094 and SFT5096
 - TX, TXV, and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

Maximum Ratings		Symbol	Value	Units	
Collector – Emitter Voltage (R _{BE} = 1 kΩ)	5013	V _{CER}	800	V	
	5014		900		
Collector – Base Voltage	5013	V _{CB0}	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	-4	P _D	1.0	W	
			2.0	W	
	/39 & /5		20	mW/°C	
			2.0	W	
	G		20	mW/°C	
			17.5	W	
S.22	14.5	W			
	Operating and Storage Temperature		T _{OP} & T _{STG}	-65 to +200	°C
Thermal Resistance, Junction to Case	-4	R _{θJC} / R _{θJA}	175 / 440	°C/W	
	/39 & /5		R _{θJC}		50 (typ 30)
	G		R _{θJC}		10 (typ 5)
	S.22		R _{θJC}		12 (typ 9)

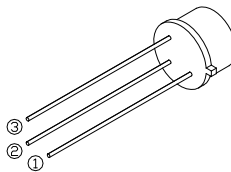
4 PIN CLCC (-4)



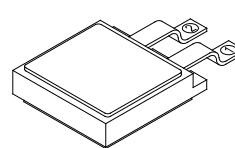
TO-39 (/39)



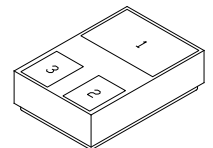
TO-5 (/5)



Cerpack (G)



SMD.22 (S.22)



- 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/} Pulse Test: Pulse Width = 300 μs, Duty Cycle = 2%



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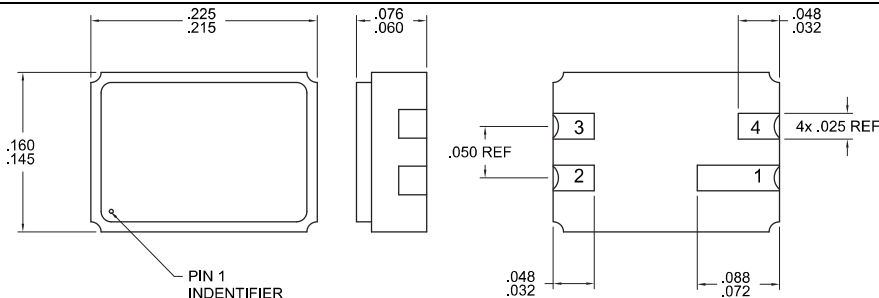
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SFT5013 and SFT5014 Series

Electrical Characteristic ^{3/}		Symbol	Min	Typ	Max	Units
Collector – Emitter Breakdown Voltage (I _C = 200 μA _{DC} , R _{BE} = 1 KΩ)	5013 5014	BV_{CER}	800 900	—	—	V
Collector–Base Breakdown Voltage (I _C = 200 μA _{DC})	5013 5014	BV_{CBO}	800 900	—	—	V
Emitter–Base Breakdown Voltage (I _E = 50 μA _{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	μA _{dc}
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	V _{dc}
Base – Emitter Saturation Voltage ^{4/} (I _C = 20 mA _{DC} , I _B = 5 mA _{DC})		V_{BE(Sat)}	—	0.73	1.0	V _{dc}
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)		C_{ob}	—	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

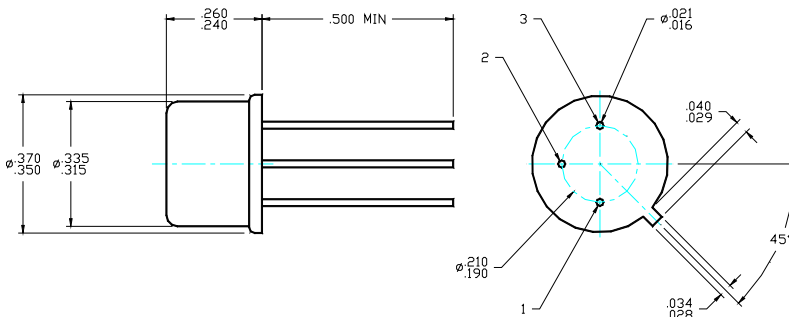
Case Outline: 4 PIN CLCC (LCC4)

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



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

DATA SHEET #: XN0031J

DOC



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