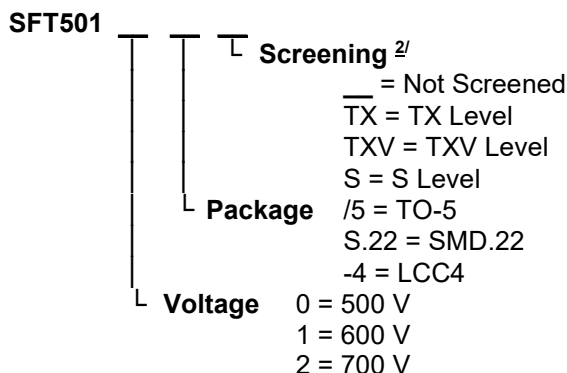


SFT5010 - SFT5012 Series

DESIGNER'S DATA SHEET

Part Number / Ordering Information ^{1/}



1 AMP, 500 - 700 VOLTS RAD TOLERANT NPN TRANSISTOR

FEATURES:

- Radiation Tolerant
- Fast Switching; High Frequency
- Hi Gain, Low Saturation Voltage
- Low Leakage
- 200°C Operating Temperature
- Higher Voltages Available – Contact Factory
- Replacement for 2N3439 – 2N3440 (/368)
- Enhanced Version of 2N5010 – 2N5012 (/727)

Maximum Ratings		Symbol	Value	Unit
Collector – Emitter Voltage	SFT5010 SFT5011 SFT5012	V_{CER}	500 600 700	V
Collector – Base Voltage	SFT5010 SFT5011 SFT5012	V_{CBO}	500 600 700	V
Emitter – Base Voltage		V_{EBO}	8	V
Collector Current		I_C	1	A
Total Device Dissipation and Thermal Resistance	@ $T_A = 25^\circ\text{C}$	P_D $R_{\theta JA}$	1 175	W °C/W
Total Device Dissipation and Thermal Resistance, SFT501_/5	@ $T_C = 25^\circ\text{C}$	P_D $R_{\theta JC}$	7 20	W °C/W
Total Device Dissipation and Thermal Resistance, SFT501_S.22	@ $T_C = 25^\circ\text{C}$	P_D $R_{\theta JC}$	7 7	W °C/W
Total Device Dissipation and Thermal Resistance, SFT501_-4	@ $T_{sp} = 25^\circ\text{C}$	P_D $R_{\theta Jsp}$	2 70	W °C/W
Operating and Storage Temperature		T_J, T_{STG}	-65 to +200	°C

NOTES: *Pulsed per MIL-STD-750.

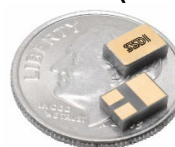
^{1/} For ordering information, price, operating curves, and availability - contact factory.

^{2/} Screening based on MIL-PRF-19500. Screening flows available on request.

TO-5 ()



SMD.22 (S.22)



LCC4 (-4)



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

DATA SHEET #: TR0147B

DOCX



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SFT5010 - SFT5012 Series

Electrical Characteristics		Symbol	Min	Max	Unit
Collector – Emitter Breakdown Voltage $I_C = 200 \mu\text{Adc}$, $R_{BE} = 1 \text{ k}\Omega$	SFT5010	BV_{CER}	500	—	V
	SFT5011		600	—	
	SFT5012		700	—	
Collector – Base Breakdown Voltage $I_C = 100 \mu\text{Adc}$	SFT5010	BV_{CBO}	500	—	V
	SFT5011		600	—	
	SFT5012		700	—	
Emitter – Base Breakdown Voltage	$I_E = 50 \mu\text{Adc}$	BV_{EBO}	8	—	V
Collector Cutoff Current	$V_{CB} = 80\%$ of rated $BVCBO$, $T_A = 25^\circ\text{C}$	I_{CBO}	—	10	nAdc μAdc μAdc
	$V_{CB} = 80\%$ of rated $BVCBO$, $T_A = 100^\circ\text{C}$		—	0.5	
	$V_{CB} = 80\%$ of rated $BVCBO$, $T_A = 150^\circ\text{C}$		—	10	
Emitter Cutoff Current	$V_{EB} = 4 \text{ V}$	I_{EBO}	—	1	μAdc
DC Current Gain*	$I_C = 25 \text{ mAdc}$, $V_{CE} = 10 \text{ Vdc}$	H_{FE}	80	240	
	$I_C = 50 \text{ mAdc}$, $V_{CE} = 10 \text{ Vdc}$		80	—	
	$I_C = 100 \text{ mAdc}$, $V_{CE} = 10 \text{ Vdc}$		80	—	
	$I_C = 200 \text{ mAdc}$, $V_{CE} = 10 \text{ Vdc}$		80	—	
	$I_C = 300 \text{ mAdc}$, $V_{CE} = 10 \text{ Vdc}$		80	—	
	$I_C = 500 \text{ mAdc}$, $V_{CE} = 10 \text{ Vdc}$		25	—	
	$I_C = 20 \text{ mAdc}$, $V_{CE} = 10 \text{ Vdc}$, $T_A = -55^\circ\text{C}$		30	—	
Collector – Emitter Saturation Voltage*	$I_C = 50 \text{ mAdc}$, $I_B = 5 \text{ mAdc}$	$V_{CE(sat)}$	—	0.1	Vdc
Base – Emitter Saturation Voltage	$I_C = 50 \text{ mAdc}$, $I_B = 5 \text{ mAdc}$	$V_{BE(sat)}$	—	1.0	Vdc
Current Gain Bandwidth Product	$I_C = 25 \text{ mAdc}$, $V_{CE} = 10 \text{ Vdc}$, $f = 10 \text{ MHz}$	f_T	10	—	MHz
	$I_C = 100 \text{ mAdc}$, $V_{CE} = 10 \text{ Vdc}$, $f = 10 \text{ MHz}$		4	—	
Output Capacitance	$V_{CB} = 10 \text{ Vdc}$, $I_E = 0 \text{ Adc}$, $f = 1.0 \text{ MHz}$	C_{ob}	—	20	pF

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

DATA SHEET #: TR0147B

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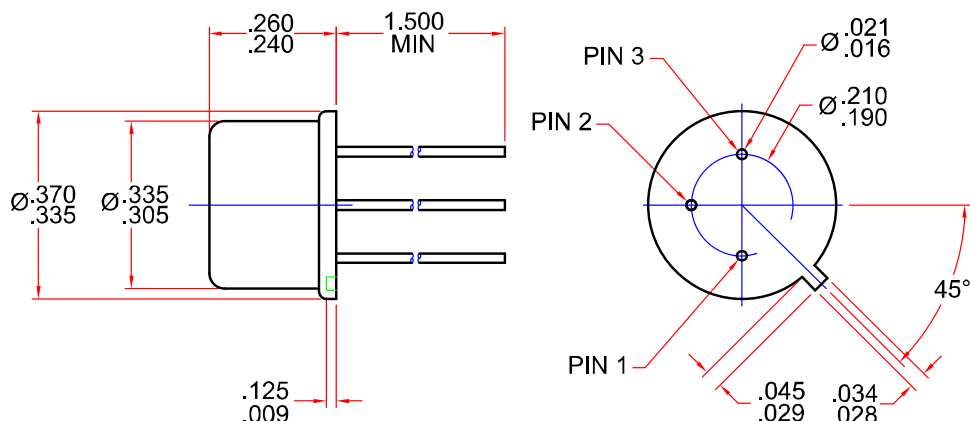


Solid State Devices, Inc.

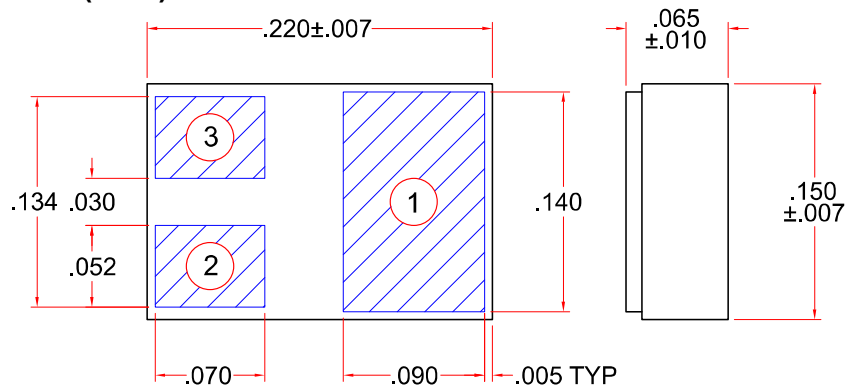
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SFT5010 - SFT5012 Series

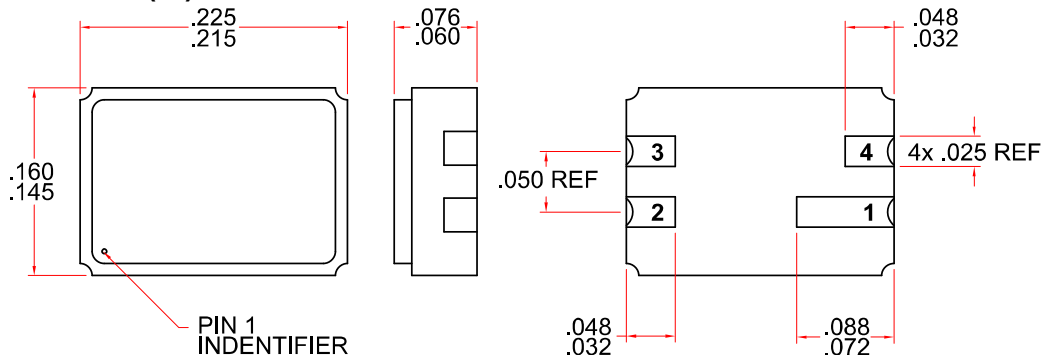
Case Outline: TO-5 (/5)



Case Outline: SMD.22 (S.22)



Case Outline: LCC4 (-4)



All dimensions are in inches
Tolerances: (unless otherwise specified)
XX: ±0.01"
XXX: ±0.005"

Notes: *Pulsed per MIL-STD-750.
For thermal derating curves and other characteristic curves
please contact SSDI Marketing Department.

PIN ASSIGNMENT

Package	Emitter	Base	Collector
TO-5	Pin 1	Pin 2	Pin 3 / Case
SMD.22	Pin 2	Pin 3	Pin 1
LCC4**	Pin 2	Pin 3	Pin 1

**LCC4: Pin 4 N/C

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