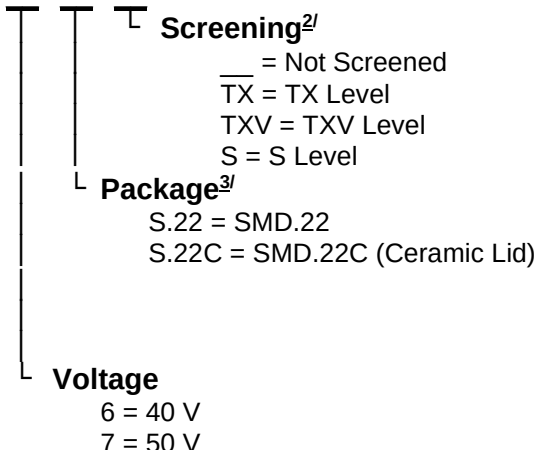


SFT3506 - SFT3507 Series

DESIGNER'S DATA SHEET

Part Number / Ordering Information ^{1/}

SFT350



**3 Amp
NPN Transistor
40 - 50 Volts**

Features:

- High Linear Gain
- Very Low Leakage and Saturation
- Fast Switching
- Hermetically Sealed
- Higher Voltage Versions Available (V_{CEO} up to 90 V) – Consult Factory
- PNP Complement Available – Contact Factory
- Replacement for 2N3506 – 2N3507 Series
- TX, TXV, and S Level Screening Available^{2/}

Maximum Ratings	Symbol	SFT3506	SFT3507	Unit
Collector – Emitter Voltage	V_{CEO}	40	50	V
Collector – Base Voltage	V_{CBO}	60	80	V
Emitter – Base Voltage	V_{EBO}	5		V
Continues Collector Current	I_C	3		A
Power Dissipation @ $T_C = 25^\circ\text{C}$	P_D	5		W
Operating & Storage Temperature	T_{OP} & T_{STG}	-65 to +200		$^\circ\text{C}$
Maximum Thermal Resistance Junction to Case	$R_{\theta JC}$	18		$^\circ\text{C/W}$

NOTES: *Pulsed per MIL-STD-750.

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

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

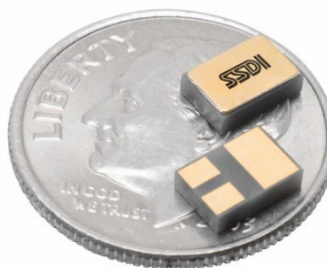
^{3/} Unless otherwise specified, all electrical characteristics @ 25°C .

^{4/} For SMD.22C (Ceramic Lid), package height = .070" $\pm$.010".

Available Part Numbers: SFT3506S.22, SFT3507S.22

SMD.22 (S.22)

SMD.22C (S.22C)



**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.

DATA SHEET #: TR0152A

DOCX

**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

SFT3506 - SFT3507 Series

Electrical Characteristics^{3/} Off Characteristics		Symbol	Min	Max	Unit
Collector – Emitter Breakdown Voltage $I_C = 10 \text{ mA}$	SFT3506 SFT3507	BV_{CEO}	40 50	— —	V
Collector – Emitter Cutoff Current $V_{CE} = 40 \text{ V}, V_{EB} = 4 \text{ V}$ $V_{CE} = 60 \text{ V}, V_{EB} = 4 \text{ V}$	SFT3506 SFT3507	I_{CEO}	— —	1 1	μA
Collector – Base Breakdown Voltage $I_C = 100 \mu\text{A}$	SFT3506 SFT3507	BV_{CBO}	60 80	— —	V
Emitter – Base Breakdown Voltage $I_E = 10 \mu\text{A}$		BV_{EBO}	5	—	V
Electrical Characteristics^{3/} On Characteristics		Symbol	Min	Max	Unit
Forward – Current Transfer Ratio $V_{CE} = 1 \text{ V}, I_C = 500 \text{ mA}$	SFT3506 SFT3507	h_{FE}	50 35	250 175	—
Forward – Current Transfer Ratio $V_{CE} = 2 \text{ V}, I_C = 1.5 \text{ A}$	SFT3506 SFT3507	h_{FE}	40 30	200 150	—
Forward – Current Transfer Ratio $V_{CE} = 3 \text{ V}, I_C = 2.5 \text{ A}$	SFT3506 SFT3507	h_{FE}	30 25	— —	—
Forward – Current Transfer Ratio $V_{CE} = 5 \text{ V}, I_C = 3.0 \text{ A}$	SFT3506 SFT3507	h_{FE}	25 20	— —	—
Forward – Current Transfer Ratio $V_{CE} = 1.0 \text{ V @ } -55^\circ\text{C}, I_C = 500 \text{ mA}$	SFT3506 SFT3507	h_{FE}	25 17	— —	—
Collector – Emitter Saturation Voltage* $I_C = 500 \text{ mA}, I_B = 50 \text{ mA}$		$V_{CE(Sat)}$	—	0.5	V
Collector – Emitter Saturation Voltage* $I_C = 1.5 \text{ A}, I_B = 150 \text{ mA}$		$V_{CE(Sat)}$	—	1.0	V
Collector – Emitter Saturation Voltage* $I_C = 2.5 \text{ A}, I_B = 250 \text{ mA}$		$V_{CE(Sat)}$	—	1.5	V
Base – Emitter Saturation Voltage* $I_C = 500 \text{ mA}, I_B = 50 \text{ mA}$		$V_{BE(Sat)}$	—	1.0	V
Base – Emitter Saturation Voltage* $I_C = 1.5 \text{ A}, I_B = 150 \text{ mA}$		$V_{BE(Sat)}$	0.8	1.3	V
Base – Emitter Saturation Voltage* $I_C = 2.5 \text{ A}, I_B = 250 \text{ mA}$		$V_{BE(Sat)}$	—	2.0	V

NOTES: *Pulsed per MIL-STD-750.

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

3/ Unless otherwise specified, all electrical characteristics @ 25°C.

4/ For SMD.22C (Ceramic Lid), package height = .070" ± .010".

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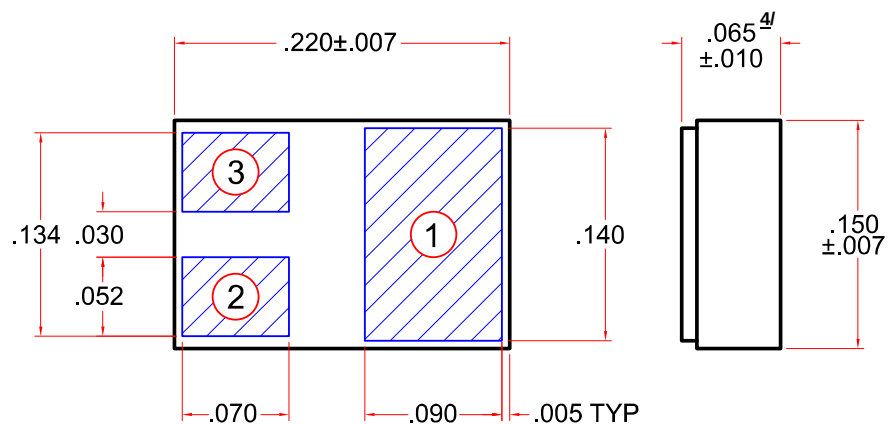
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SFT3506 - SFT3507 Series

Electrical Characteristics ^{3/} Dynamic Characteristics		Symbol	Min	Max	Unit
Magnitude of Common Emitter Small-Signal Short-Circuit Forward Current Transfer Ratio $V_{CE} = 5\text{ V}$, $I_C = 100\text{ mA}$, $f = 20\text{ MHz}$		$ h_{FE} $	3.0	15	—
Output Capacitance	$V_{CB} = 10\text{ V}$, $I_E = 0$, $100\text{ kHz} \leq f \leq 1.0\text{ MHz}$	C_{OBO}	—	40	pF
Input Capacitance	$V_{EB} = 3.0\text{ V}$, $I_C = 0$, $100\text{ kHz} \leq f \leq 1.0\text{ MHz}$	C_{IBO}	—	300	pF
Electrical Characteristics ^{3/} Switching Characteristics		Symbol	Min	Max	Unit
Delay Time	$I_C = 1.5\text{ A}$, $I_{B1} = 150\text{ mA}$	t_d	—	15	ns
Rise Time	$I_C = 1.5\text{ A}$, $I_{B1} = 150\text{ mA}$	t_r	—	30	ns
Storage Time	$I_C = 1.5\text{ A}$, $I_{B1} = I_{B2} = 150\text{ mA}$	t_s	—	55	ns
Fall Time	$I_C = 1.5\text{ A}$, $I_{B1} = I_{B2} = 150\text{ mA}$	t_f	—	35	ns

SMD.22 (S.22)



Dimensions are Pre-Solder Dip

NOTES: *Pulsed per MIL-STD-750.

1/ For ordering information, price, and availability, contact factory.

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

3/ Unless otherwise specified, all electrical characteristics @ 25°C.

4/ For SMD.22C (Ceramic Lid), package height = .070" ± .010".

Available Part Numbers: SFT3506S.22, SFT3507S.22

PIN ASSIGNMENT

Package	Pin 1	Pin 2	Pin 3
SMD.22	Collector	Emitter	Base

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