



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

SFT5671 and SFT5672 SFT5672E

30 – 50 AMPS
90 - 130 Volts
High Power
NPN Transistors

DESIGNER'S DATA SHEET

Part Number / Ordering Information ^{1/}

SFT5671
 SFT5672
 SFT5672E

Screening = No Screening
 TX = TX Level
 TXV = TXV Level
 S = S Level

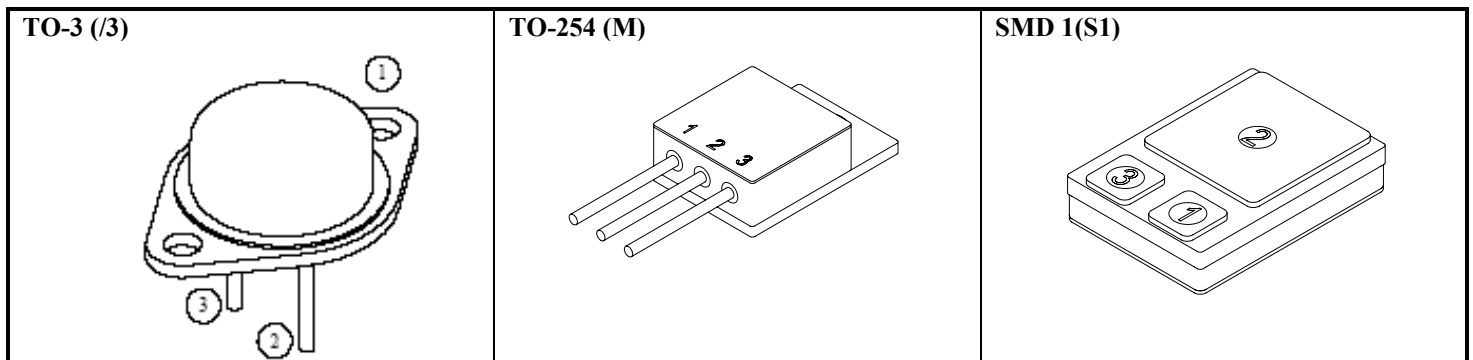
Lead Bend ^{3/4/} = Straight Leads
 UB = Up Bend
 DB = Down Bend

Package ^{3/} /3 = TO-3
 M = TO-254
 S1 = SMD 1

Features:

- High Frequency transistor with V_{CE0} to 130 Volts
- Enhanced SOA capability and Fast Switching
- High Power Dissipation 140 Watts
- 200°C Operating Temperature
- TX, TXV, S-Level Screening per MIL-PRF-19500 available; consult factory
- Enhanced performance version: SFT5672E

Maximum Ratings		Symbol	Value	Units
Collector – Emitter Voltage	SFT5671 SFT5672 SFT5672E	V_{CE0}	90 120 130	Volts
Collector – Base Voltage	SFT5671 SFT5672 SFT5672E	V_{CBO}	120 150 250	Volts
Emitter – Base Voltage		V_{EBO}	7	Volts
Collector Current	SFT5671, SFT5672 SFT5672E	I_C	30 50	Amps
Base Current		I_B	10	Amps
Total Power Dissipation	TO-3 ($T_C \leq 25^\circ C$) TO-254 ($T_C \leq 25^\circ C$) SMD 1 ($T_C \leq 25^\circ C$)	P_D	140 116 175	Watts
Operating & Storage Temperature		T_J & T_{STG}	-65 to +200	°C
Maximum Thermal Resistance (Junction to Case)	TO-3 TO-254 SMD 1	$R_{\theta JC}$	1.25 1.5 1.0	°C/W



NOTES:

^{1/} For Ordering Information, Price, and Availability Contact Factory.

^{3/} For Package Outlines Contact Factory.

^{4/} Up and Down Bend Configurations are Available for 'M' (TO-254) Packages Only.

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

DATA SHEET #: TR0076C

DOC



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

SFT5671 and SFT5672

SFT5672E

Electrical Characteristics	unless otherwise specified, T _A = 25°C * pulse test; pw= 300 us, duty cycle= 2%	Symbol	Min	Max	Units			
Collector – Emitter Blocking Voltage *	(I _C = 200 mA) SFT5671	BV_{CEO}	90	—	Volts			
	SFT5672		120	—				
	SFT5672E		130	—				
	(I _C = 200 mA, R _{BE} = 50 Ω) SFT5671	BV_{CER}	110	—	Volts			
	SFT5672		140	—				
	SFT5672E		250	—				
Collector – Emitter Blocking Voltage *	(I _C = 200 mA, V _{BE} = -1.5 V) SFT5671	BV_{CEX}	120	—	Volts			
	SFT5672		150	—				
	SFT5672E		350	—				
Emitter – Base Blocking Voltage	(I _E = 100 μA)	BV_{EBO}	7	—	Volts			
Collector Cutoff Current	(V _{CE} = 80 V) SFT5671, SFT5672	I_{CEO}	—	10	mA			
	SFT5672E		—	0.1				
Collector Cutoff Current	(V _{CB} = 120 V) SFT5671	I_{CBO}	—	25	mA			
	(V _{CB} = 150 V) SFT5672		—	25				
	(V _{CB} = 150 V) SFT5672E		—	0.1				
Emitter Cutoff Current	(V _{EB} = 7 V) SFT5671, SFT5672	I_{EBO}	—	10	mA			
	SFT5672E		—	0.1				
Collector Cutoff Current T _A = 25°C T _A = 25°C T _A = 25°C T _A = 150°C T _A = 150°C	(V _{CE} = 110 V, V _{BE} = 1.5 V) SFT5671	I_{CEX}	—	12	mA			
	(V _{CE} = 135 V, V _{BE} = 1.5 V) SFT5672		—	10				
	(V _{CE} = 135 V, V _{BE} = 1.5 V) SFT5672E		—	0.1				
	(V _{CE} = 100 V, V _{BE} = 1.5 V) SFT5671		—	15				
	(V _{CE} = 100 V, V _{BE} = 1.5 V) SFT5672		—	10				
	(V _{CE} = 100 V, V _{BE} = 1.5 V) SFT5672E		—	10				
DC Current Gain *	(I _C = 15 A, V _{CE} = 2 V)	h_{FE}	20	100				
	(I _C = 20 A, V _{CE} = 5 V)		20	—				
	(I _C = 50 A, V _{CE} = 5 V) SFT5672E		10	—				
	(I _C = 15 A, V _{CE} = 2 V, T _A = -65°C)		10	—				
Small Signal Common-Emitter Forward Current Transfer Ratio	(I _C = 2 A, V _{CE} = 10 V, f = 5 MHz)	h_{fe}	10	40				
Collector-Emitter Saturation Voltage *	TO-3, SMD 1 (I _C = 15 A, I _B = 1.2 A)	V_{CE(SAT)}	—	0.75	Volts			
	(I _C = 30 A, I _B = 6.0 A)		—	5.0				
	TO-254 (I _C = 15 A, I _B = 1.2 A)		—	0.77				
	(I _C = 30 A, I _B = 6.0 A)		—	5.25				
Base-Emitter Saturation Voltage *	(I _C = 15 A, I _B = 1.2 A)	V_{BE(SAT)}	—	1.5	Volts			
Output Capacitance	V _{CB} = 10 V, I _E = 0 A, f = 1.0MHz	C_{ob}	—	900	pF			
Safe Operating Area	V _{CE} = 4.67 V, I _C = 30 A, t = 1 s	SOA1						
	V _{CE} = 24 V, I _C = 5.0 A, t = 1 s	SOA2						
	V _{CE} = 45 V, I _C = 0.9 A, t = 1 s	SOA3						
	V _{CE} = 90 V, I _C = 0.19 A, t = 1 s, SFT5671, SFT5672	SOA4						
	V _{CE} = 120 V, I _C = 0.11 A, t = 1 s, SFT5672E	SOA4						
Turn-on Time	(V _{CC} = 30 V, I _C = 15.0 A, I _{B1} = I _{B2} = 1.2 A)	t_(on)	—	500	ns			
Turn-off Time		t_(off)	—	1.5	μs			
Available Part Numbers:		PIN ASSIGNMENT (Standard)						
SFT5671/3	SFT5671M	SFT5671MUB	SFT5671MDB	SFT5671S1	Package	Collector	Emitter	Base
SFT5672/3	SFT5672M	SFT5672MUB	SFT5672MDB	SFT5672S1	TO-3 (3)	Case	Pin 2	Pin 3
SFT5672E/3	SFT5672EM	SFT5672EMUB	SFT5672EMDB	SFT5672ES1	TO-254 (M)	Pin 1	Pin 2	Pin 3
					SMD 1(S1)	Pin 1	Pin 2	Pin 3