



Solid State Devices, Inc.

14701 Firestone Blvd * La Mirada, CA 90638

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DESIGNER'S DATA SHEET

Part Number / Ordering Information ^{1/}

SFT6032

--- + Screening ^{2/} --- = No Screening

TX = TX Level

TXV = TXV Level

S = S Level

--- + Lead Bend ^{3/ 4/} --- = Straight Leads

+ Package ^{3/} /3 = TO-3 0.060" pin

SFT6032, SFT6033

50 AMPS
90 - 120 Volts
High Power
NPN Transistors

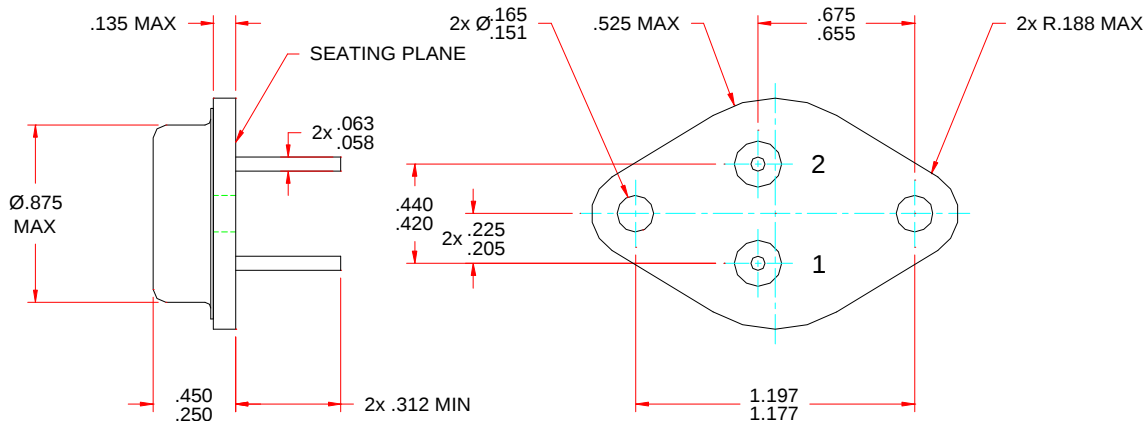
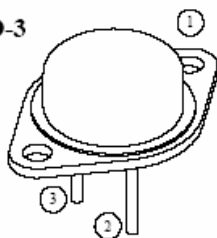
Features:

- High Frequency transistor with BV_{CEO} to 120 Volts
- Enhanced SOA capability and Fast Switching
- High Power Dissipation 140 Watts
- 200°C Operating Temperature
- TX, TXV, S-Level Screening Available. Consult Factory

Maximum Ratings		Symbol	Value	Units
Collector – Emitter Voltage	SFT6032 SFT6033	V_{CEO}	90 120	Volts
Collector – Base Voltage	SFT6032 SFT6033	V_{CBO}	120 150	Volts
Emitter – Base Voltage		V_{EBO}	7	Volts
Collector Current		I_C	50	Amps
Base Current		I_B	10	Amps
Total Power Dissipation	$T_C = 25^\circ C$	P_D	140	Watts
Operating & Storage Temperature		T_J & T_{STG}	-65 to +200	°C
Maximum Thermal Resistance (Junction to Case)		$R_{\theta JC}$	1.25 (typ. 0.75)	°C/W

TO-3 (/3)

TO-3



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

DATA SHEET #: TR0092A

DOC



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SFT6032

SFT6033

Electrical Characteristics			Symbol	Min	Max	Units
Collector – Emitter Blocking Voltage *	(I _C = 200 mA) SFT6032	SFT6033	BV _{CEO}	90	—	Volts
				120	—	
	(I _C = 200 mA, R _{BE} = 50 Ω) SFT6032	SFT6033	BV _{CER}	110	—	
				140	—	
Collector – Emitter Blocking Voltage *(I _C = 200 mA, V _{BE} = -1.5 V)			SFT6032	120	—	Volts
			SFT6033	150	—	
Collector Cutoff Current (V _{CE} = 80 V)			I _{CEO}	—	1	mA
Collector Cutoff Current	(V _{CB} = 120 V) SFT6032		I _{CBO}	—	1	mA
	(V _{CB} = 150 V) SFT6033			—	1	
Emitter Cutoff Current (V _{EB} = 7 V)			I _{EBO}	—	1	mA
Collector Cutoff Current	T _A = 25°C (V _{CE} = 110 V, V _{BE} = 1.5 V) SFT6032		I _{CEX}	—	1	mA
	T _A = 25°C (V _{CE} = 135 V, V _{BE} = 1.5 V) SFT6033			—	1	
	T _A = 150°C (V _{CE} = 100 V, V _{BE} = 1.5 V) SFT6032			—	15	
	T _A = 150°C (V _{CE} = 100 V, V _{BE} = 1.5 V) SFT6033			—	10	
DC Current Gain *	I _C = 50 A, V _{CE} = 2.6 V, SFT6032		h _{FE}	10	50	
	I _C = 40 A, V _{CE} = 2 V, SFT6033			10	50	
	I _C = 50 A, V _{CE} = 2.6 V, T _A = -55°C SFT6032			5	—	
	I _C = 40 A, V _{CE} = 2 V, T _A = -55°C, SFT6033			5	—	
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 *	(I _C = 50 A, I _B = 5 A) SFT6032		V _{CE (SAT)}	—	1.3	Volts
	(I _C = 40 A, I _B = 4 A) SFT6033			—	1.0	
Base-Emitter Saturation Voltage *	(I _C = 50 A, I _B = 5 A) SFT6032		V _{BE (SAT)}	—	2.5	Volts
	(I _C = 40 A, I _B = 4 A) SFT6033			—	2.5	
Output Capacitance V _{CB} = 10 V, I _E = 0 A, f = 1.0MHz			C _{ob}	—	1000	pF
Safe Operating Area	V _{CE} = 2.8 V, I _C = 50 A, t = 1 s, SFT6032		SOA1a			
	V _{CE} = 3.5 V, I _C = 40 A, t = 1 s, SFT6033		SOA1b			
	V _{CE} = 24 V, I _C = 5.8 A, t = 1 s		SOA2			
	V _{CE} = 40 V, I _C = 0.9 A, t = 1 s		SOA3			
	V _{CE} = 90 V, I _C = 0.18 A, t = 1 s, SFT6032		SOA4a			
	V _{CE} = 120 V, I _C = 0.10 A, t = 1 s, SFT6033		SOA4b			
Turn-on Time	(V _{CC} = 30 V, I _C = 50.0 A, I _{B1} = I _{B2} = 5.0 A) SFT6032		t _(on)	—	500	ns
Turn-off Time	(V _{CC} = 30 V, I _C = 40.0 A, I _{B1} = I _{B2} = 4.0 A) SFT6033		t _(off)	—	2.0	μs

NOTES: * Pulse Test: Pulse Width = 300μsec, Duty Cycle = 2%

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

2/ Screening per MIL-PRF-19500

3/ For Package Outlines Contact Factory.

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

5/ Unless Otherwise Specified, All Electrical Characteristics @25°C.

Available Part Numbers:

SFT6032/3
SFT6033/3

PIN ASSIGNMENT (Standard)

Package	Collector	Emitter	Base
TO-3 (3)	Case	Pin 2	Pin 3

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