



Solid State Devices, Inc.

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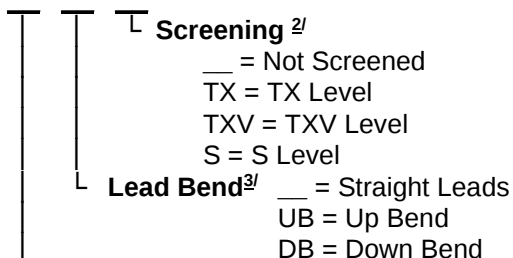
SFT4100 Series

15 AMP HIGH SPEED NPN TRANSISTOR 200 VOLTS

DESIGNER'S DATA SHEET

Part Number / Ordering Information ^{1/}

SFT4100



/3 = TO-3
 S1 = SMD1
 M = TO-254

Features:

- Fast Switching, $t_r = 60$ nsec typ.
- Very Low Leakage and Saturation
- BVCEO 165 Volts Min
- High Linear Gain
- 200°C Operating Temperature
- Gold Eutectic Die Attach
- Available in Hermetic Isolated and "Hot Case" Power Packages
- Higher Current Devices Available

Maximum Ratings	Symbol	Value	Unit
Collector – Emitter Voltage	V_{CEO}	165	V
Collector – Base Voltage	V_{CBO}	250	V
Emitter – Base Voltage	V_{EBO}	7	V
Continues Collector Current	I_C	15	A
Base Current	I_B	3	A
Power Dissipation @ $T_c = 25^\circ\text{C}$	P_D	120	W
Operating & Storage Temperature	Top & Tstg	-65 to +200	°C
Maximum Thermal Resistance	Junction to Case	$R_{\theta JC}$	1.46 °C/W

NOTES:

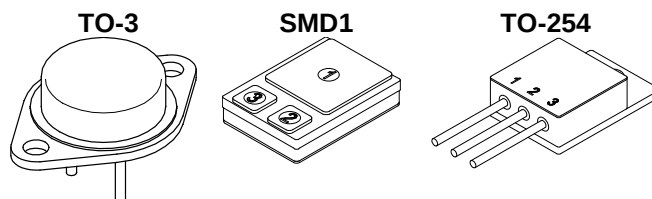
*Pulse Test: Pulse Width = 300 μsec , Duty Cycle = 2%

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

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

^{3/} Up and down bend configurations are available for 'M' (TO-254) packages only.

^{4/} Unless otherwise specified, all electrical characteristics @ 25°C.



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

DATA SHEET #: TR0105C

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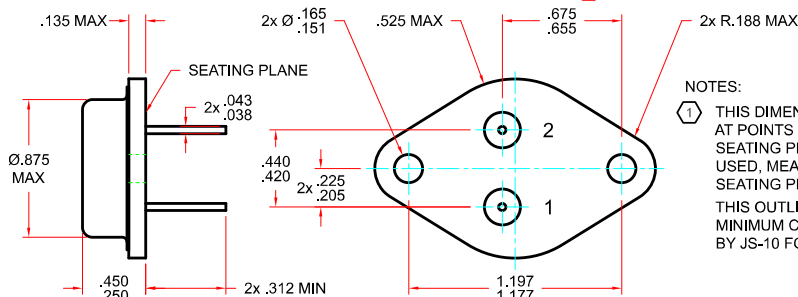
SFT4100 Series

Electrical Characteristic ^{4/}		Symbol	Min	Typ	Max	Unit
Collector – Emitter Breakdown Voltage	I _C = 200 mA	BV _{CEO}	165	200	—	V
Collector – Base Breakdown Voltage	I _C = 200 μ A	BV _{CBO}	—	250	—	V
Emitter – Base Breakdown Voltage	I _E = 50 mA	BV _{EBO}	7	15	—	V
Collector – Cutoff Current	V _{CE} = 160 V	I _{CEO}	—	0.03	1000	μ A
Collector – Cutoff Current	V _{CE} = 250 V, V _{EB} = 1.5 V V _{CE} = 250 V, V _{EB} = 1.5 V, T _C = 125°C	I _{CEX}	—	0.01 1.0	1000 5000	μ A
Emitter – Cutoff Current	V _{EB} = 5 V	I _{EBO}	—	0.01	1000	μ A
DC Current Gain*	V _{CE} = 4 V, I _C = 5 A V _{CE} = 4 V, I _C = 8 A	h _{FE}	15 8	30 30	45 —	—
Collector – Emitter Saturation Voltage*	I _C = 5.0 A, I _B = 500 mA I _C = 8.0 A, I _B = 1.0 A	V _{CE(Sat)}	— —	0.25 0.35	1.2 1.6	V
Base – Emitter Saturation Voltage*	I _C = 8.0 A, I _B = 1.0 A	V _{BE(Sat)}	—	1.12	2.0	V
Current Gain Bandwidth Product	V _{CE} = 15 V, I _C = 1.0 A, f = 10 MHz	f _T	8	20	—	MHz
Clamped E _{SiB} Collector Current	V _{Clamp} = 200 V, L = 500 μ H		8	—	—	A
Safe Operating Area	V _{CE} = 30 V, I _C = 4.0 A, t = 1 s V _{CE} = 135 V, I _C = 0.15 A, t = 1 s	SOA1 SOA2	—	—	—	—
ON Time	V _{CC} = 150 V, I _C = 8 A, I _{B1} = I _{B2} = 1 A	t _{ON}	—	100	1000	nsec
Storage Time		t _S	—	1200	1700	nsec
Fall Time		t _f	—	60	800	nsec

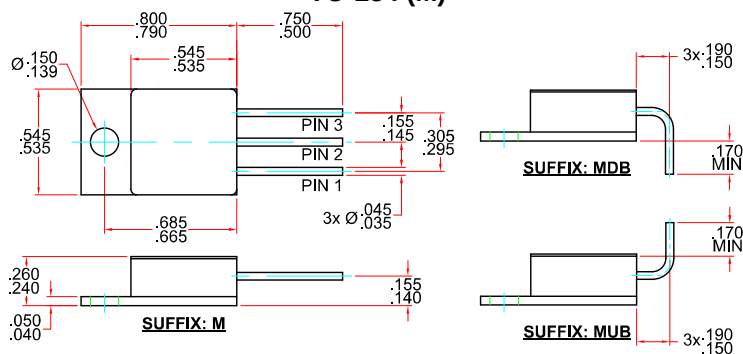
CASE OUTLINES:

TO-3 (I/3)

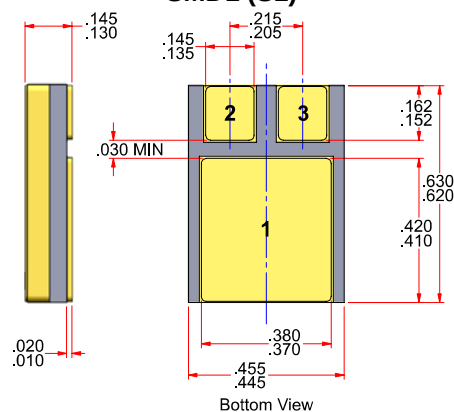
PIN ASSIGNMENT (Standard)			
Package	Collector	Emitter	Base
TO-3	Case	Pin 2	Pin 1
TO-254	Pin 1	Pin 2	Pin 3
SMD1	Pin 1	Pin 2	Pin 3



TO-254 (M)



SMD1 (S1)



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