



Solid State Devices, Inc.

14701 Firestone Blvd * La Mirada, Ca 90638
Phone: (562) 404-4474 * Fax: (562) 404-1773
ssdi@ssdi-power.com * www.ssdi-power.com

SFT4100 Series

15 AMP HIGH SPEED NPN TRANSISTOR 200 VOLTS

DESIGNER'S DATA SHEET

Part Number / Ordering Information ^{1/}

SFT4100

└ Screening ^{2/} = Not Screen
 TX = TX Level
 TXV = TXV Level
 S = S Level

└ Package ^{3/}

/3 = TO-3
S1 = SMD1
M = TO254

Features:

- Fast Switching, $t_f = 60$ 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	Units
Collector – Emitter Voltage	V_{CEO}	165	Volts
Collector – Base Voltage	V_{CBO}	250	Volts
Emitter – Base Voltage	V_{EBO}	7	Volts
Continues Collector Current	I_C	15	Amps
Base Current	I_B	3	Amps
Power Dissipation @ TC = 25°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 = 300µsec, Duty Cycle = 2%

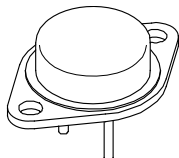
^{1/} For Ordering Information, Price, and Availability Contact Factory.

^{2/} Screening to MIL-PRF-19500

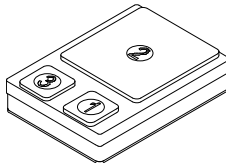
^{3/} For Package Outlines Contact Factory.

^{4/} Unless Otherwise Specified, All Electrical Characteristics @25°C.

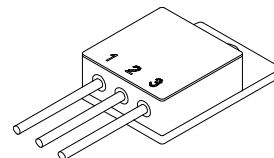
TO-3



SMD1



TO-254



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

DATA SHEET #: TR0105B

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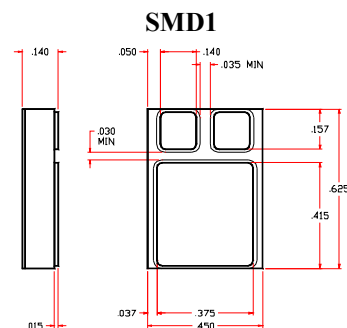
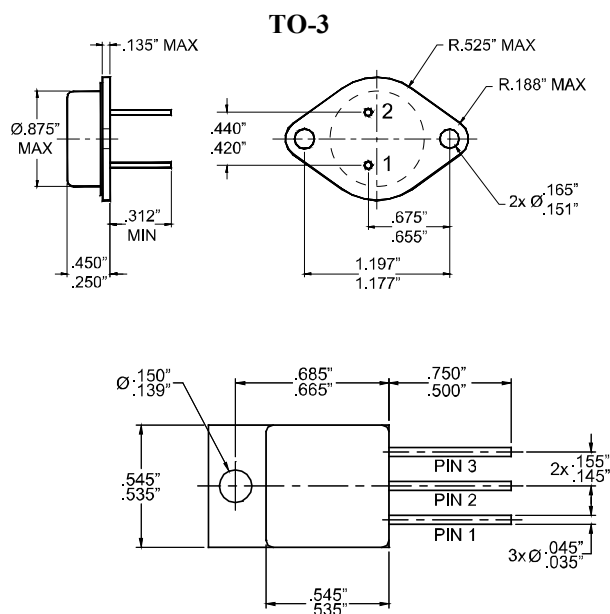
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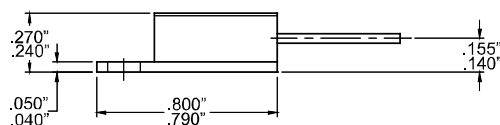
SFT4100 Series

Electrical Characteristic ^{4/}		Symbol	Min	Typ	Max	Units
Collector – Emitter Breakdown Voltage	$I_C = 200\text{mA}$	BV_{CEO}	165	200	—	Volts
Collector – Base Breakdown Voltage	$I_C = 200\mu\text{A}$	BV_{CBO}	-	250	—	Volts
Emitter – Base Breakdown Voltage	$I_E = 50\text{mA}$	BV_{EBO}	7	15	—	Volts
Collector – Cutoff Current	$V_{CE} = 160\text{ V}$	I_{CEO}	—	0.03	1000	μA
Collector – Cutoff Current	$V_{CE} = 250\text{ V}, V_{EB} = 1.5\text{ V}$ $V_{CE} = 250\text{V}, V_{EB} = 1.5\text{V}, T_C = 125\text{C}$	I_{CEX}	—	0.01 1.0	1000 5000	μA
Emitter – Cutoff Current	$V_{EB} = 5\text{ V}$	I_{EBO}	—	0.01	1000	μA
DC Current Gain *	$V_{CE} = 4\text{V}, I_C = 5\text{A}$ $V_{CE} = 4\text{V}, I_C = 8\text{A}$	h_{FE}	15 8	30 30	45 —	—
Collector – Emitter Saturation Voltage *	$I_C = 5.0\text{A}, I_B = 500\text{mA}$ $I_C = 8.0\text{A}, I_B = 1.0\text{A}$	$V_{CE(Sat)}$	— —	0.25 0.35	1.2 1.6	Volts
Base – Emitter Saturation Voltage *	$I_C = 8.0\text{A}, I_B = 1.0\text{A}$	$V_{BE(Sat)}$	—	1.12	2.0	Volts
Current Gain Bandwidth Product	$V_{CE} = 15\text{V}, I_C = 1.0\text{A}, f = 10\text{MHz}$	f_T	8	20	—	MHz
Clamped $E_{S/B}$ Collector Current	$V_{Clamp} = 200\text{V}, L = 500\text{ uH}$		8			A
Safe Operating Area	$V_{CE} = 30\text{V}, I_C = 4.0\text{A}, t = 1\text{s}$ $V_{CE} = 135\text{V}, I_C = 0.15\text{A}, t = 1\text{s}$	SOA1 SOA2				
ON Time	$V_{CC} = 150\text{V},$ $I_C = 8\text{A},$ $I_{B1} = I_{B2} = 1\text{A}$	t_{ON}	—	100	1000	nsec
Storage Time		t_S	—	1200	1700	nsec
Fall Time		t_f	—	60	800	nsec

CASE OUTLINES:



TO-254



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