



Solid State Devices, Inc.

14701 Firestone Blvd * La Mirada, Ca 90638
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SFT4399/3

30 AMP PNP TRANSISTOR 60 VOLTS

DESIGNER'S DATA SHEET

Part Number / Ordering Information ^{1/}

SFT4399

└─ Screening^{2/}

 — = Not Screened
 TX = TX Level
 TXV = TXV Level
 S = S Level

└─ Package

 /3 = TO-3

Features:

- BV_{CEO} 60 Volts
- Low Saturation Voltage
- 200°C Operating Temperature
- Hermetically Sealed, Isolated Package
- Replacement for 2N4399
- TX, TXV, S-Level Screening Available - Consult Factory^{2/}

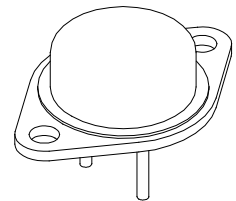
Maximum Ratings		Symbol	Value	Unit
Collector – Emitter Voltage		V _{CEO}	60	V
Collector – Base Voltage		V _{CBO}	60	V
Emitter – Base Voltage		V _{EB}	5	V
Collector Current	Continuous	I _C	30	A
Base Current	Continuous	I _B	7.5	A
Total Power Dissipation	@ T _A = 25°C	P _D	5	W
Derate above 100°C	@ T _C = 100°C		115 1.15	
Operating & Storage Temperature		T _J & T _{STG}	-55 to +200	°C
Maximum Thermal Resistance (Junction to Case)		R _{θJC}	0.875	°C/W

NOTES:

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

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

TO-3 (/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 #: TR0141A

DOCX



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Electrical Characteristics, $T_c = 25^\circ\text{C}$		Symbol	Min	Typ	Max	Unit
Collector – Emitter Voltage	$I_c = 200 \text{ mA}$	$V_{CEO(sus)}$	-60	-120	—	V
Collector Cutoff Current	$V_{EC} = 60 \text{ V}$	I_{CEO}	—	-20	-100	μA
Collector Cutoff Current ($V_{EC} = 60 \text{ V}$, $V_{BE} = 1.5 \text{ V}$)	$T_A = 25^\circ\text{C}$ $T_A = 150^\circ\text{C}$	I_{CEX}	—	0.0005 -3	-5 -10	μA mA
Emitter Cutoff Current	$V_{BE} = 5 \text{ V}$, $I_c = 0$	I_{EBO}	—	0.02	5	μA
DC Current Gain*	$V_{EC} = 2 \text{ V}$, $I_c = -1 \text{ A}$ $V_{EC} = 2 \text{ V}$, $I_c = -15 \text{ A}$ $V_{EC} = 5 \text{ V}$, $I_c = -30 \text{ A}$ $V_{EC} = 2 \text{ V}$, $I_c = -15 \text{ A}$, $T_A = -55^\circ\text{C}$	H_{FE}	40 15 5 7	— — — 22	425 60 — —	
Collector-Emitter Saturation Voltage*	$I_c = -5 \text{ A}$, $I_B = -0.5 \text{ A}$ $I_c = -10 \text{ A}$, $I_B = -1 \text{ A}$	$V_{EC(SAT)}$	— —	0.2 0.4	0.55 0.75	V
Base-Emitter Saturation Voltage*	$I_c = -15 \text{ A}$, $I_B = -1.5 \text{ A}$ $I_c = -10 \text{ A}$, $I_B = -1 \text{ A}$	$V_{EB(SAT)}$	—	1.5 1.2	1.8 1.7	V
Small Signal Short-Circuit Forward Current Transfer Ratio	$V_{EC} = 10 \text{ V}$, $I_c = -1 \text{ A}$, $f = 1 \text{ MHz}$ $V_{EC} = 10 \text{ V}$, $I_c = -1 \text{ A}$, $f = 1 \text{ kHz}$	$ h_{fe} $ h_{fe}	4 40	9 150	40 425	
Safe Operating Area, DC (1 sec)	-6.67 V, -30 A -20 V, -10 A -40 V, -3 A -50 V, -0.6 A	SOA₁ SOA₂ SOA₃ SOA₄	— — — —	— — — —	— — — —	
Output Capacitance	$V_{EC} = 10 \text{ V}$, $I_E = 0 \text{ A}$, $f = 1 \text{ MHz}$	C_{ob}	—	550	1000	pF
ON Time	<p style="text-align: center;">TURN-ON (t_{on}) TIME TEST CIRCUIT A</p>	$t_{(on)}$	—	0.2	1.2	μs
OFF Time	<p style="text-align: center;">TURN-OFF (t_{off}) TIME TEST CIRCUIT B</p>	$t_{(off)}$	—	1.25	2.5	μs

CASE OUTLINE: TO-3

Pin Out:
Case – Collector
1 – Base
2 – Emitter

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

NOTES:
 ① THIS DIMENSION SHALL BE MEASURED AT POINTS .050 - .055" BELOW THE SEATING PLANE. WHEN GAGE IS NOT USED, MEASUREMENT WILL BE MADE AT SEATING PLANE.
 THIS OUTLINE DOES NOT MEET THE MINIMUM CRITERIA ESTABLISHED BY JS-10 FOR REGISTRATION.