



Solid State Devices, Inc.

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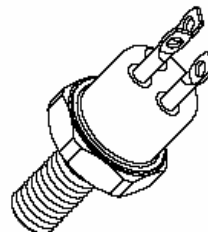
DESIGNER'S DATA SHEET

FEATURES:

- Typical V_{CEO} TO 200 V
- Fast Switching
- Very Low Leakage
- Low Saturation Voltage
- 200°C Operating, Gold Eutectic Die Attach
- Replacement for 2N3852
- TX, TXV, and Space Level Screening Available. Contact Factory.

SFT3852/59

5 AMP / 60 VOLTS NPN TRANSISTOR



TO-59

MAXIMUM RATINGS	Symbol	Value	Units
Collector – Emitter Voltage $R_{BE} = 1 \text{ k}\Omega$	V_{CEO} V_{CER}	40 60	Volts
Collector – Base Voltage	V_{CBO}	60	Volts
Emitter – Base Voltage	V_{EBO}	5	Volts
Collector Current	I_C	5	Amps
Base Current	I_B	0.5	Amps
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	23 133	W mW/ $^\circ\text{C}$
Operating and Storage Temperature Range	$T_{OP} \text{ \& } T_{STG}$	-65 to +200	$^\circ\text{C}$
Thermal Resistance, Junction to Case	R_{qJC}	7.5	$^\circ\text{C/W}$

CASE OUTLINE:

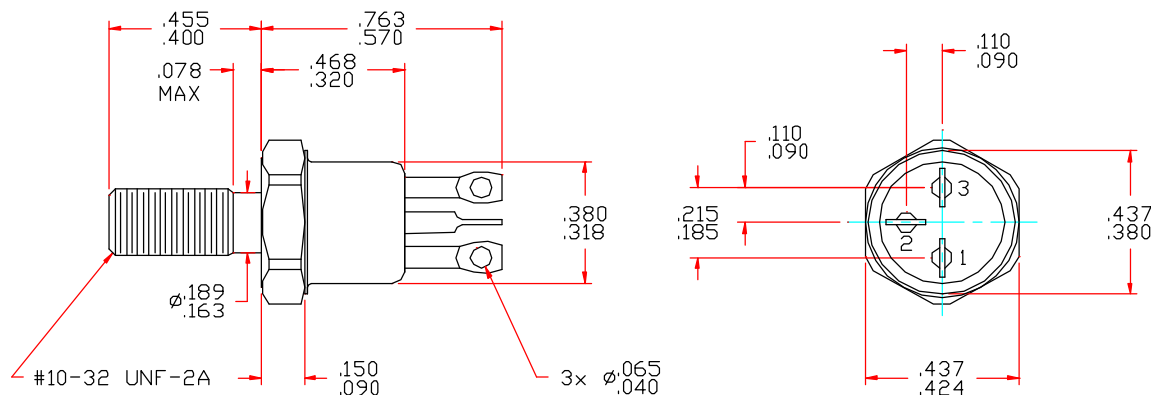
TO-59

Pin 1 – Emitter

Pin 2 – Base

Pin 3 – Collector

Case – isolated



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

DATA SHEET #: TR0085A

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ELECTRICAL CHARACTERISTICS, T _A = 25°C, unless otherwise specified		Symbol	Min	Typ	Max	Units
Collector – Emitter Breakdown Voltage (I _C = 100 mA)		BV _{CEO}	40	175	—	V
Collector – Base Breakdown Voltage (I _C = 100 μA _{DC})		BV _{CBO}	60	200	—	V
Emitter – Base Breakdown Voltage (I _E = 20 μA _{DC})		BV _{EBO}	5	11	—	V
Emitter Cutoff Current (V _{EB} = 5 V _{DC})		I _{EBO}	—	0.005	10	uA
Collector Cutoff Current (V _{CE} = 40 V _{DC})		I _{CES1}	—	5	100	nA
Collector Cutoff Current (V _{CE} = 40 V _{DC} , T _A = 150°C)		I _{CES2}	—	—	50	uA
DC Current Gain* (V _{CE} = 1 V _{DC})		H _{FE}	50	80	200	
			30	75	--	
			15	50	--	
Collector – Emitter Saturation Voltage* (I _C = 1 A _{DC} , I _B = 50 mA _{DC})		V _{CE (SAT)1}	—	150	250	mV _{DC}
Collector – Emitter Saturation Voltage* (I _C = 2 A _{DC} , I _B = 200 mA _{DC})		V _{CE (SAT)2}	—	160	500	mV _{DC}
Collector – Emitter Saturation Voltage* (I _C = 5 A _{DC} , I _B = 500 mA _{DC})		V _{CE (SAT)3}	—	450	2000	mV _{DC}
Base – Emitter Saturation Voltage* (I _C = 1 A _{DC} , I _B = 50 mA _{DC})		V _{BE (SAT)1}	—	0.78	1.2	V _{DC}
Base – Emitter Saturation Voltage* (I _C = 2 A _{DC} , I _B = 200 mA _{DC})		V _{BE (SAT)2}	—	0.85	1.3	V _{DC}
Current Gain Bandwidth Product (I _C = 500 mA _{DC} , V _{CE} = 5 V _{DC} , f = 20 MHz)		f _T	20	38	—	MHz
Collector Capacitance (V _{CB} = 10 V _{DC} , I _E = 0 A _{DC} , f = 1.0 MHz)		C _J	—	85	125	pF
Turn On Time	(V _{CC} = 30 V _{DC} , I _C = 500 mA _{DC} , I _{B1} = I _{B2} = 50 mA _{DC} , V _{gen} = 15 V	t _(d)	—	48	60	ns
		t _(r)	—	115	150	
Turn Off Time		t _(s)	—	650	700	ns
		t _(f)	—	65	200	

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

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