Solid State Devices, Inc.
14830 Valley View Blvd * La Mirada, Ca 90638
Phone: (562) 404-7855 * Fax: (562) 404-1773
ssdi@ssdi-power.com * www.ssdi-power.com

SFT3904A2 Series

Dual Microminiature Package
200 mA 40 Volts
Dual NPN Transistor

DESIGNER'S DATA SHEET

Part Number / Ordering Information [1/]

SFT3904A2

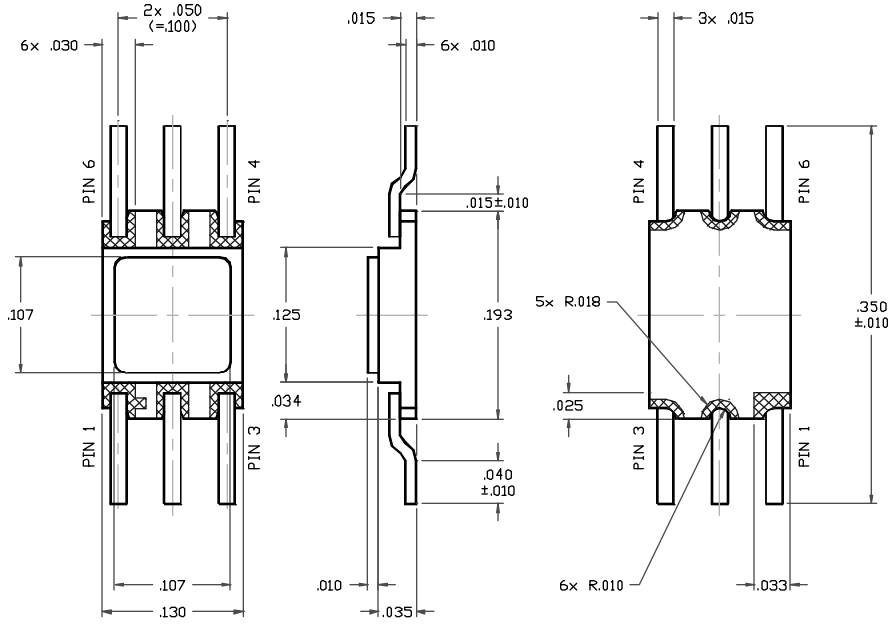
Screening [2/] __ = Commercial
TX = TX Level
TXV = TXV Level
S = S Level

Package GW = Gullwing

Features:
- High Speed Switching Transistor
- Multiple Devices Reduce Board Space
- High Power Dissipation: Up to 600 mW / device
- Replacement for 2N3904AU
- TX, TXV, S-Level screening available
- PNP complimentary parts available (SFT3906A2)

Maximum Ratings	Symbol	Value	Units
Collector – Emitter Voltage	V_{CEO}	40	Volts
Collector – Base Voltage	V_{CBO}	60	Volts
Emitter – Base Voltage	V_{EBO}	6	Volts
Continues Collector Current	I_C	200	mAmps
Power Dissipation @ TC = 25ºC	P_D	600	mW
Operating & Storage Temperature	Top & Tstg	-65 to +200	ºC
Maximum Thermal Resistance (Junction to Case)	$R_{\theta JC}$	0.29	ºC/mW

Gullwing (GW)



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Electrical Characteristic [4/]			Symbol	Min	Max	Units
Collector – Emitter Sustaining Voltage		I_C = 1 mA	BV_{CEO}	40	—	Volts
Collector – Base Breakdown Voltage		I_C = 10 µA	BV_{CBO}	60	—	Volts
Emitter – Base Breakdown Voltage		I_C = 10 µA	BV_{EBO}	6	—	Volts
Collector Cutoff Current		Vce = 30 V, Vbe = - 3.0 V	I_{CEX}	—	50	nA
Collector Cutoff Current		Vcb = 30 V	I_{CBO}	—	50	nA
Emitter Cutoff Current		Veb = 3.0 V	I_{EBO}	—	50	nA
DC Forward Current Transfer Ratio *		V_{CE} = 1.0V, I_C = 0.1 mA V_{CE} = 1.0V, I_C = 1.0 mA V_{CE} = 1.0V, I_C = 10 mA V_{CE} = 1.0V, I_C = 50 mA V_{CE} = 1.0V, I_C = 100 mA	H_{FE}	40 70 100 60 30	— — 300 — —	
Collector – Emitter Saturation Voltage *		I_C = 10mA, I_B = 1.0mA I_C = 50mA, I_B = 5.0mA	$V_{CE(Sat)}$	— —	0.2 0.3	Volts
Base – Emitter Saturation Voltage *		I_C = 10mA, I_B = 1.0mA I_C = 50mA, I_B = 5.0mA	$V_{BE(Sat)}$	0.65 —	0.85 0.95	Volts
Frequency Transition		V_{CE} = 20V, I_C = 20mA	f_T	300	—	MHz
Output Capacitance		V_{CE} = 10V, f = 1MHz	c_{ob}	—	4.0	pF
Input Capacitance		V_{CE} = 0.5V, f = 1MHz	c_{ib}	—	8.0	pF
Switch Times	**Turn-on Delay Time** **Rise Time** **Storage Time** **Fall Time**	Vcc=3V, IC = 10 mA IB1 = 1mA, IB2=-1mA Vbe(off) = 0.5 V	**td** **tr** **ts** **tf**	— — — —	35 35 200 50	n sec
Small Signal Current Gain (f = 1 kHz)		V_{CE} = 10V, I_C = 1.0 mA	h_{fe}	100	400	
Noise Figure		Ic = 100 uA, Vce = 5 V, Rs = 1.0 kΩ, f = 1 kHz	**NF**	—	5.0	db

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

Available Part Numbers:

SFT3904A2GW

PIN ASSIGNMENT						
Package	**Pin 1**	**Pin 2**	**Pin 3**	**Pin 4**	**Pin 5**	**Pin 6**
GW	Collector1	Base1	Emitter1	Collector2	Base2	Emitter2