Solid State Devices, Inc.
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SFT85707GW

DESIGNER'S DATA SHEET

Part Number / Ordering Information [1/]

SFT85707 __ __

Screening [2/] __ = Not Screened
TX = TX Level
TXV = TXV Level
S = S Level

Package [3/] GW = GULLWING

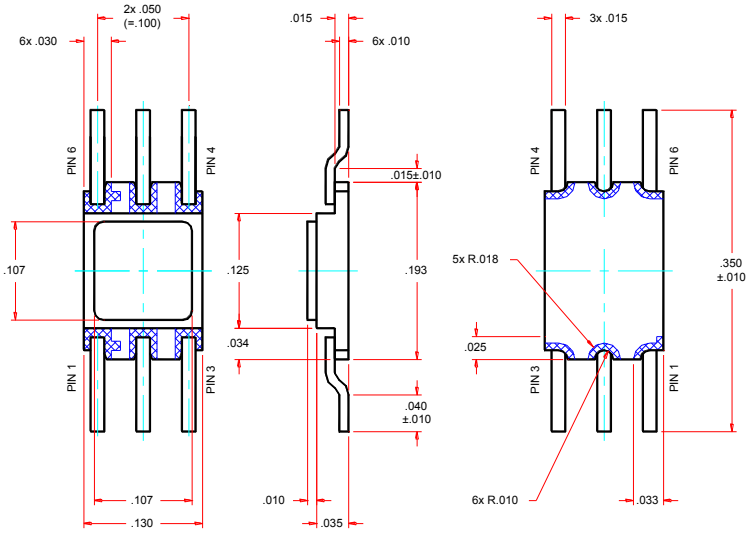
Dual Microminiature Package
NPN & PNP Pair
Small Signal / RF Transistor

Features:

- High Speed, Saturated Switching, and Driver Applications
- Low Power IF and RF Amplifier Applications in the UHF Range
- TX, TXV, S-Level Screening Available [2/]

Maximum Ratings		Symbol	2N2857 NPN	2N2907 PNP	Units
Collector – Emitter Voltage		V_{CEO}	15	60	Volts
Collector – Base Voltage		V_{CBO}	30	60	Volts
Emitter – Base Voltage		V_{EBO}	3.0	5.0	Volts
Collector Current		I_C	40	600	mA
Power Dissipation Per Device	T_A = 25ºC	P_D [5/]	200	500	mW
Total Power Dissipation	T_A = 25ºC	P_D [5/]	660		mW
Maximum Thermal Resistance	(Junction to Ambient)	$R_{\theta JA}$ [5/]	880	350	ºC/W
Operating & Storage Temperature		T_J & T_{STG}	-65 to +200	-65 to +200	ºC

PACKAGE OUTLINE: GULLWING (GW)



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

DATA SHEET #: TR0079D | **DOC**

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Electrical Characteristics 4/	Symbol	NPN Bias	Limit	PNP Bias	Limit
Collector – Emitter Blocking Voltage *	BV_{CEO}	I_C=3 mA	15 V min	I_C = 10 mA	-60 V min
Collector – Base Leakage Current	I_{CBO1}	V_{CB} = 30 V	1 uA max	V_{CB} = 60 V	-10 uA max
Emitter – Base Leakage Current	I_{EBO}	V_{BE} = 3 V	10 uA max	V_{BE} = 5 V V_{BE} = 4 V	-10 uA max -50 nA max
Collector Cutoff Current	I_{CBO2}	V_{CB} = 15 V V_{CB} = 15 V, T_A = 150ºC	10 nA max 1 µA max	V_{CB} = -50 V, T_A = 25ºC V_{CB} = -50 V, T_A = 150ºC	-10 nA max -10 µA max
Emitter Cutoff Current	I_{CES}	V_{CE} = 16 V, V_{BE} = 0 V	100 nA	V_{CE} = -50 V, V_{BE} = 0 V	50 nA
DC Current Forward Transfer Ratio *	h_{FE}	I_C = 3 mA, V_{CE} = 1 V	30 - 150	—	—
DC Current Forward Transfer Ratio *	h_{FE}	— — — — —	— — — — —	I_C = 100 µA, V_{CE} = 10 V I_C = 1 mA, V_{CE} = 10 V I_C = 10 mA, V_{CE} = 10 V I_C = 150 mA, V_{CE} = 10 V I_C = 500 mA, V_{CE} = 10 V	75 min 100 - 450 100 min 100 - 300 50 min
Small Signal Current Gain * (f = 1 kHz)	h_{fe}	I_C = 2 mA, V_{CE} = 6 V	20 - 220	I_C = 1 mA, V_{CE} = 10 V	100 min
Collector-Emitter Saturation Voltage *	$V_{CE\ (SAT)}$	I_C = 10 mA, I_B = 1 mA	0.4 V max	I_C = 150 mA, I_B = 15 mA I_C = 500 mA, I_B = 50 mA	-0.4 V max -1.6 V max
Base-Emitter Saturation Voltage *	$V_{BE\ (SAT)}$	I_C = 10 mA, I_B = 1 mA	1.0 V max	I_C = 150 mA, I_B = 15 mA I_C = 500 mA, I_B = 50 mA	-1.3 V max -2.6 V max
Small-Signal Power Gain	G_{pe}	I_C = 1.5 mA, V_{CE} = 6 V, f = 450 MHz 6/	12.5 – 21 dB	—	—
Noise Figure	NF	I_C = 1.5 mA, V_{CE} = 6 V, f = 450 MHz 6/	4.5 dB max	—	—
Current Gain – Bandwidth Product	f_T	V_{CE} = 6 V, I_C = 5 mA, f = 100 MHz	1.0 GHz min	V_{CE} = -20 V, I_C = 20 mA, f = 100 MHz	200 MHz min
Collector Base Time Constant	R_bC_c	V_{CB} = 6 V, I_E = 2 mA, f = 31.9 MHz 6/	4 - 15 ps	—	—
Output Capacitance	$C_{ob/cb}$	V_{CB} = 10 V, I_E = 0 A, f = 0.1 to 1 MHz	1.0 pF max	V_{CB} = -10 V, I_E = 0 A, f = 1.0 MHz	8 pF max
Input Capacitance	C_{ib}	—	—	V_{BE} = -2.0 V, I_C = 0 A, f = 1.0 MHz	30 pF max
Delay Time	$t_{(on)}$ t_d	—	—	V_{CC} = -30 V, I_C = 150 mA, I_{B1} = I_{B2} = 15 mA	45 ns max
Rise Time	t_r	—	—		
Storage Time	$t_{(off)}$ t_s	—	—	V_{CC} = -6 V, I_C = 150 mA, I_{B1} = I_{B2} = 15 mA	300 ns max
Fall Time	t_f	—	—		

NOTES:

* Pulse Test: Pulse Width = 300µsec, 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/ For Package Outlines Contact Factory.

4/ Unless Otherwise Specified, All Electrical Characteristics @25ºC

5/ Mounted on F__ PCB

6/ parameter guaranteed by design

Available Part Numbers:
SFT85707GW

PIN ASSIGNMENT

Package	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6
Gullwing	Collector	Base	Emitter	Collector	Base	Emitter
	PNP	PNP	PNP	NPN	NPN	NPN