



Solid State Devices, Inc.


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**SFT22907GW
Series**

**Dual Microminiature Package
600 mA 60 Volts
Complimentary NPN & PNP
Transistor**

DESIGNER'S DATA SHEET

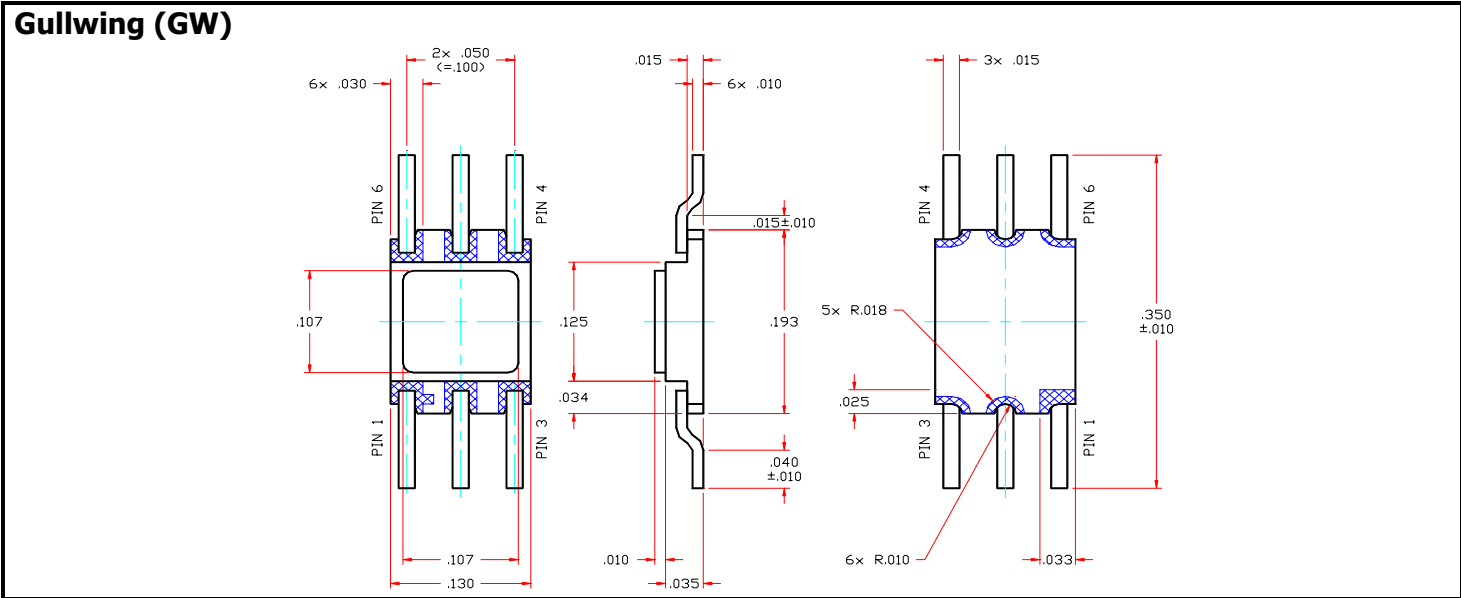
Part Number / Ordering Information^{1/}

SFT22907 **GW**  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 1.2 W / device
 - TX, TXV, S-Level screening available
 - Replaces both 2N2222AU & 2N2907AU

Maximum Ratings	Symbol	2N2222 NPN	2N2907 PNP	Units
Collector – Emitter Voltage	V_{CEO}	50	60	Volts
Collector – Base Voltage	V_{CBO}	75	60	Volts
Emitter – Base Voltage	V_{EBO}	6	5	Volts
Continues Collector Current	I_C	800	600	mAmps
Power Dissipation @ $T_A = 25^\circ C$ Per device	P_D	500	500	mW
Power Dissipation @ $T_A = 25^\circ C$ Total		660		
Operating & Storage Temperature	T_{op} & T_{stg}	-65 to +200	-65 to +200	$^\circ C$
Maximum Thermal Resistance Junction to PCB	$R_{\theta J-PCB}$	245	245	$^\circ C/W$



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

DATA SHEET #: TR0032E



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Electrical Characteristics ^{4/}	Symbol	NPN Bias	Limit	PNP Bias	Limit
Collector – Emitter Sustaining Voltage	BV_{CEO}	$I_C = 10 \text{ mA}$	50V	$I_C = 10 \text{ mA}$	60V
Collector Cutoff Current	I_{CES}	$V_{CE} = 50 \text{ V}$	50 nA max	$V_{CE} = 30 \text{ V}$	50 nA max
Collector Cutoff Current	I_{CBO}	$V_{CB} = 60 \text{ V}$ $V_{CB} = 75 \text{ V}$ $V_{CB} = 60 \text{ V}, T_A = 150^\circ\text{C}$	10 nA max 10 μA max 10 μA max	$V_{CB} = 50 \text{ V}$ $V_{CB} = 60 \text{ V}$ $V_{CB} = 50 \text{ V}, T_A = 150^\circ\text{C}$	10 nA max 10 μA max 10 μA max
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 4 \text{ V}$ $V_{EB} = 6 \text{ V}$	10 nA max 10 μA max	$V_{EB} = 4 \text{ V}$ $V_{EB} = 5 \text{ V}$	50 nA max 10 μA max
DC Current Forward Transfer Ratio *	h_{FE}	$I_C = 0.1 \text{ mA}, V_{CE} = 10 \text{ V}$ $I_C = 1.0 \text{ mA}, V_{CE} = 10 \text{ V}$ $I_C = 10 \text{ mA}, V_{CE} = 10 \text{ V}$ $I_C = 150 \text{ mA}, V_{CE} = 10 \text{ V}$ $I_C = 500 \text{ mA}, V_{CE} = 10 \text{ V}$	50 min 75 - 325 100 min 100 - 300 30 min	$I_C = 100 \mu\text{A}, V_{CE} = 10 \text{ V}$ $I_C = 1 \text{ mA}, V_{CE} = 10 \text{ V}$ $I_C = 10 \text{ mA}, V_{CE} = 10 \text{ V}$ $I_C = 150 \text{ mA}, V_{CE} = 10 \text{ V}$ $I_C = 500 \text{ mA}, V_{CE} = 10 \text{ V}$	75 min 100 - 450 100 min 100 - 300 50 min
DC Current Forward Transfer Ratio *	h_{FE}	$I_C = 10 \text{ mA}, V_{CE} = 10 \text{ V}$ $T_A = -55^\circ\text{C}$	35 min	$I_C = 10 \text{ mA}, V_{CE} = 10 \text{ V}$ $T_A = -55^\circ\text{C}$	50 min
Small Signal Current Gain ($f = 1 \text{ kHz}$)	h_{fe}	$I_C = 1.0 \text{ mA}, V_{CE} = 10 \text{ V}$	50 - 300	—	—
Collector-Emitter Saturation Voltage *	$V_{CE(SAT)}$	$I_C = 150 \text{ mA}, I_B = 15 \text{ mA}$ $I_C = 500 \text{ mA}, I_B = 50 \text{ mA}$	0.3V max 1.0V max	$I_C = 150 \text{ mA}, I_B = 15 \text{ mA}$ $I_C = 500 \text{ mA}, I_B = 50 \text{ mA}$	0.4 V max 1.6 V max
Base-Emitter Saturation Voltage *	$V_{BE(SAT)}$	$I_C = 150 \text{ mA}, I_B = 15 \text{ mA}$ $I_C = 500 \text{ mA}, I_B = 50 \text{ mA}$	0.6 – 1.2V 2.0V max	$I_C = 150 \text{ mA}, I_B = 15 \text{ mA}$ $I_C = 500 \text{ mA}, I_B = 50 \text{ mA}$	0.6 - 1.3 V 2.6 V max
Frequency Transition (Small signal current gain) @ $f = 100\text{MHz}$	f_T	$V_{CE} = 20 \text{ V}, I_C = 20 \text{ mA},$ $f = 100 \text{ MHz}$	250 MHz min	$V_{CE} = 20 \text{ V}, I_C = 20 \text{ mA},$ $f = 100 \text{ MHz}$	200 MHz min
Output Capacitance	C_{ob}	$V_{CB} = 10 \text{ V}, f = 1 \text{ MHz}$	8.0 pF max	$V_{CB} = 10 \text{ V}, f = 1.0 \text{ MHz}$	8.0 pF max
Input Capacitance	C_{ib}	$V_{EB} = 0.5 \text{ V}, f = 1 \text{ MHz}$	25 pF max	$V_{BE} = 2.0 \text{ V}, f = 1.0 \text{ MHz}$	30 pF max
Switching Times	$t_{(on)}$	$V_{cc} = -30 \text{ V}, I_C = 150 \text{ mA}, I_{B1}$ $= I_{B2} = 15 \text{ mA}, V_{BE(off)} = 3\text{V}$	35 ns max	$V_{cc} = -30 \text{ V}, I_C = 150 \text{ mA}, I_{B1}$ $= I_{B2} = 15 \text{ mA}, V_{BE(off)} = 3\text{V}$	45 ns max
	$t_{(off)}$	$V_{cc} = -30 \text{ V}, I_C = 150 \text{ mA}, I_{B1}$ $= I_{B2} = 15 \text{ mA}, V_{BE(off)} = 3\text{V}$	300 ns max	$V_{cc} = -30 \text{ V}, I_C = 150 \text{ mA}, I_{B1}$ $= I_{B2} = 15 \text{ mA}, V_{BE(off)} = 3\text{V}$	300 ns max

NOTES:
 * Pulse Test: Pulse Width = 300 μsec , 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: SFT22907GW	PIN ASSIGNMENT						
	Package	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6
	GW	Collector SFT2222	Base SFT2222	Emitter SFT2222	Collector SFT2907	Base SFT2907	Emitter SFT2907