



**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

# SFF4393A2GW

## Dual Microminiature Package 50 mA 40 Volts Dual N-Channel JFET Transistor

### DESIGNER'S DATA SHEET

**Part Number / Ordering Information**<sup>1/</sup>

SFF4393A2

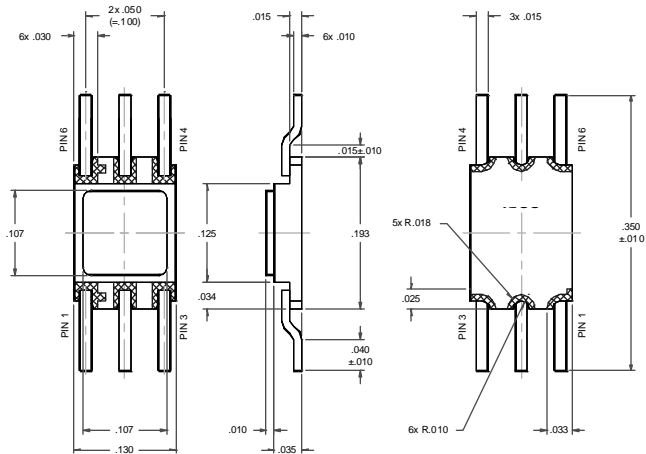
Screening<sup>2/</sup>        = Not Screened  
 TX = TX Level  
 TXV = TXV Level  
 S = S Level

Package<sup>3/</sup> GW = GULLWING

- Features:**
- Low ON Resistance
  - Low Capacitance, < 4 pF
  - Fast Switching,  $t_{on} < 5$  ns
  - Used for Analog Switches, Choppers, Current Limiters, and Sample-and-Hold Applications
  - TX, TXV, and S-Level Screening Available. Consult Factory.

Maximum Ratings		Symbol	Value	Units
Drain – Source Voltage		$V_{DS}$	40	Volts
Drain – Gate Voltage		$V_{DG}$	40	Volts
Reverse Gate – Source Voltage		$V_{SG}$	40	Volts
Drain Current		$I_D$	50	mA
Power Dissipation @ $T_A = 25^\circ\text{C}$	Per Device	$P_D$	500	mW
	Total		660	mW
Maximum Thermal Resistance Junction to Ambient		$R_{\theta JA}$ <sup>5/</sup>	245	$^\circ\text{C/W}$
Lead Temperature (1/16" from the seated surface for 60 seconds)		$T_L$	300	$^\circ\text{C}$
Operating & Storage Temperature		$T_{OP}$ & $T_{STG}$	-65 to +200	$^\circ\text{C}$

### PACKAGE OUTLINE: GULLWING (GW)



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

**DATA SHEET #: FT0010B**

**DOC**



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Electrical Characteristics <sup>4/</sup>		Symbol	Min	Max	Units
Gate – Source Breakdown Voltage	$I_G = -1\mu A, V_{DS} = 0 V$	$BV_{GSS}$	-40	—	Volts
Static, Drain – Source ON State Resistance	$I_D = 1 mA, V_{GS} = 0 V$	$r_{DS(ON)}$		100	Ohms
Gate to Source Cutoff Voltage	$V_{DS} = 20 V, I_D = 1 nA$	$V_{GS(OFF)}$	-0.5	-3.0	Volts
Gate to Source Leakage Current	$V_{GS} = -20 V, V_{DS} = 0 V$ $V_{DG} = -20 V, V_{DS} = 0 V, T_A = 150^\circ C$	$I_{GSS}$		-100 -200	pA nA
Zero Gate Voltage Drain Current	$V_{DS} = 20 V, V_{GS} = 0 V$	$I_{DSS}$		35	mA
Drain Cutoff Current	$V_{DS} = 20 V, V_{GS} = -5 V$ $V_{DS} = 20 V, V_{GS} = -5 V, T_A = 150^\circ C$	$I_{D(OFF)}$		100 200	pA nA
Gate to Source Forward Voltage	$I_G = 1 mA, V_{DS} = 0 V$	$V_{GS(F)}$		1.2	Volts
Drain to Source “ON” Voltage	$I_D = 3.0 mA, V_{GS} = 0 V$	$V_{DS(ON)}$		0.4	Volts
Small Signal, Drain – Source ON Resistance	$V_{GS} = 0 V, I_D = 0 A, f = 1 kHz$	$r_{ds(on)}$		100	Ohms
Small Signal, Common-Source, Short-Circuit Input Capacitance	$V_{DS} = 20 V, V_{GS} = 0 V, f = 1 MHz$	$C_{iss}$	—	16	pF
Small Signal, Common-Source, Short-Circuit Reverse Transfer Capacitance	$V_{DS} = 0 V, V_{GS} = -5 V, f = 1 MHz$	$C_{rss}$	—	4.5	pF
Turn ON Delay Time	$V_{DD} = 10 V, V_{GS(on)} = 0 V,$ $I_{D(on)} = 3.0 mA, V_{GS(off)} = -5 V$	$t_{d(on)}$	—	15	ns
Rise Time		$t_r$	—	5	ns
Turn OFF Delay Time	$V_{DD} = 10 V, V_{GS(on)} = 0 V,$ $I_{D(on)} = 3.0 mA, V_{GS(off)} = -5 V$	$t_{d(off)}$	—	50	ns
Fall Time		$t_f$	—	30	ns

<b>NOTES:</b> * Pulse Test: Pulse Width = 100 μsec, Duty Cycle = 2% <sup>1/</sup> For Ordering Information, Price, and Availability Contact Factory. <sup>2/</sup> Screening per MIL-PRF-19500	<sup>3/</sup> For Package Outlines Contact Factory. <sup>4/</sup> Unless Otherwise Specified, All Electrical Characteristics @25°C <sup>5/</sup> Mounted on FR1 PCB
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**Available Part Numbers:**  
**SFF4393A2GW**

PIN ASSIGNMENT						
Package	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6
Gullwing	Gate	Source	Drain	Gate	Source	Drain