



Solid State Devices, Inc.

14701 Firestone Blvd * La Mirada, CA 90638
 Phone: (562) 404-4474 * Fax: (562) 404-1773
 ssdi@ssdi-power.com * www.ssdi-power.com

SFF6661/39

SFF6661S.22

DESIGNER'S DATA SHEET

Part Number / Ordering Information ^{1/}

SFF6661**/39**

Screening ^{2/}

— = Not Screened

TX = TX Level

TXV = TXV Level

S = S Level

Package

/39 = TO-39

S.22 = SMD.22

0.86 AMP

N-CHANNEL MOSFET

90 Volts, 4 Ω

Features:

- Rugged construction
- Low RDS(on) and high transconductance
- Fast recovery and superior dv/dt performance
- Increased reverse energy capability
- Low input and transfer capacitance for easy paralleling
- Hermetically sealed package
- Surface mount option with small footprint available (SFF6661S.22)
- Very fast switching speed
- TX, TXV, S-Level screening available^{2/}
- Replacement for 2N6661

Maximum Ratings ^{3/}	Symbol	Value	Unit
Drain - Source Voltage	V_{DS}	90	V
Gate - Source Voltage	V_{GS}	±20	V
Max. Continuous Drain Current $T_C = 25^\circ\text{C}$ $T_C = 100^\circ\text{C}$	I_D	0.86 0.54	A
Max. Instantaneous Drain Current (Tj limited)	I_{DM}	3	A
Total Power Dissipation $T_C = 25^\circ\text{C}$, TO-39 $T_C = 25^\circ\text{C}$, SMD.22 $T_A = 25^\circ\text{C}$	P_D	5.40 4.16 0.725	W
Operating & Storage Temperature	$T_{OP} \text{ \& } T_{STG}$	-65 to +150	°C
Maximum Thermal Resistance Junction to Ambient Junction to Case, TO-39 Junction to Case, SMD.22	$R_{\theta JA}$ $R_{\theta JC}$ $R_{\theta JC}$	170 23 30	°C/W

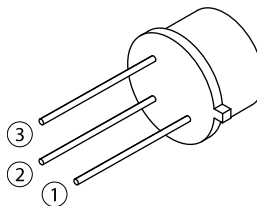
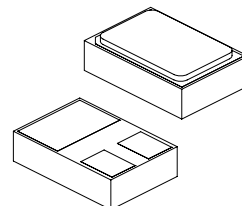
NOTES:

*Pulsed per MIL-STD-750.

^{1/} For ordering information, price, and availability - contact factory.

^{2/} Screening based on MIL-PRF-19500. Screening flows available on request.

^{3/} Unless otherwise specified, all electrical characteristics @25°C.

TO-39 (/39)**SMD.22 (S.22)**

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

DATA SHEET #: FT0041F**DOCX**



Solid State Devices, Inc.

14701 Firestone Blvd * La Mirada, CA 90638

Phone: (562) 404-4474 * Fax: (562) 404-1773

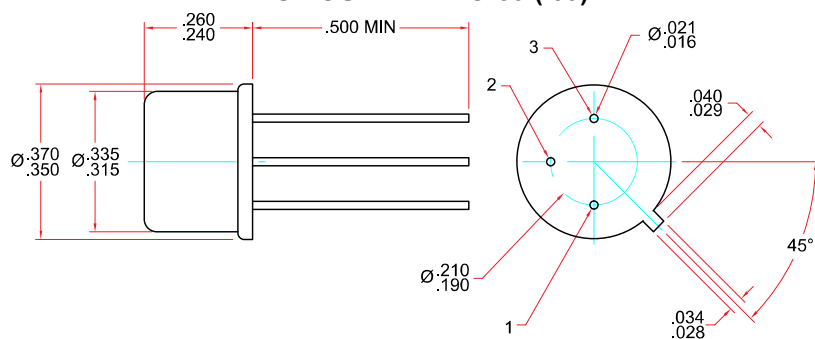
ssdi@ssdi-power.com * www.ssdi-power.com

SFF6661/39

SFF6661S.22

Electrical Characteristics ^{3/}		Symbol	Min	Typ	Max	Unit
Drain to Source Breakdown Voltage	$V_{DS} = 0 \text{ V}, I_D = 1.0 \mu\text{A}$	BV_{DSS}	90	125	—	V
Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = 1.0 \text{ mA}$	$V_{GS(th)}$	0.8	1.6	2	V
	$V_{DS} = V_{GS}, I_D = 1.0 \text{ mA}, T_A = -55^\circ\text{C}$		—	1.8	2.5	
	$V_{DS} = V_{GS}, I_D = 1.0 \text{ mA}, T_A = 125^\circ\text{C}$		0.3	1.3	—	
Gate to Body Leakage	$V_{DS} = 0 \text{ V}, V_{GS} = \pm 20 \text{ V}$ $V_{DS} = 0 \text{ V}, V_{GS} = \pm 20 \text{ V}, T_A = 125^\circ\text{C}$	I_{GSS}	—	—	± 100 ± 500	nA
Zero Gate Voltage Drain Current	$V_{DS} = 72 \text{ V}, V_{GS} = 0 \text{ V}$ $V_{DS} = 72 \text{ V}, V_{GS} = 0 \text{ V}, T_A = 125^\circ\text{C}$	I_{DSS}	—	—	1 100	μA
On-State Drain Current*	$V_{DS} = 10 \text{ V}, V_{GS} = 10 \text{ V}$	$I_{D(on)}$	—	1.8	—	mA
Drain to Source On State Resistance*	$V_{GS} = 5 \text{ V}, I_D = 0.3 \text{ A}$	$R_{DS(on)}$	—	3.8	5.3	Ω
	$V_{GS} = 10 \text{ V}, I_D = 1 \text{ A}$		—	3.6	4	
	$V_{GS} = 10 \text{ V}, I_D = 1 \text{ A}, T_A = 125^\circ\text{C}$		—	6.7	7.5	
Forward Transconductance*	$V_{DS} = 7.5 \text{ V}, I_D = 0.475 \text{ A}$	g_{fs}	170	340	—	mS
Diode Forward Voltage	$I_S = 0.86 \text{ A}, V_{GS} = 0 \text{ V}$	V_{SD}	0.7	0.9	1.4	V
Input Capacitance	$V_{GS} = 0 \text{ V}$ $V_{DS} = 25 \text{ V}$ $f = 1 \text{ MHz}$	C_{iss}	—	35	50	pF
Output Capacitance		C_{oss}	—	15	40	
Reverse Transfer Capacitance		C_{rss}	—	2	10	
Drain-Source Capacitance		C_{ds}	—	—	30	
Turn-On Time	$V_{DD} = 25 \text{ V}, R_L = 23 \Omega$	$t_{(on)}$	—	6	10	nsec
Turn-Off Time	$I_D = 1 \text{ A}, V_{GEN} = 10 \text{ V}, R_G = 23 \Omega$	$t_{(off)}$	—	8	10	

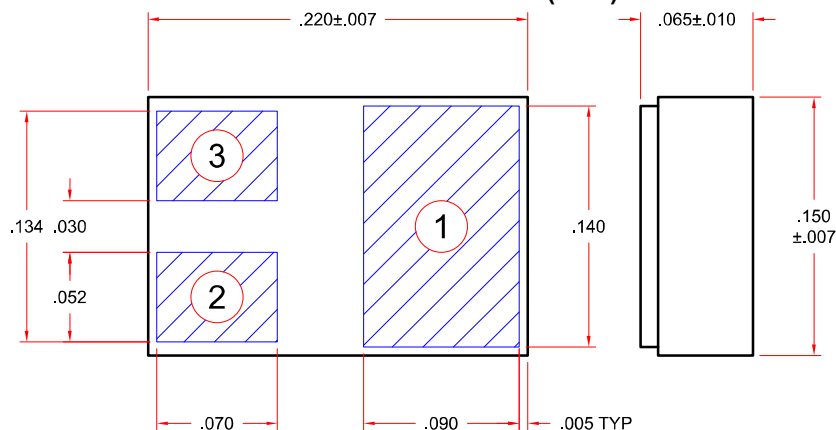
CASE OUTLINE: TO-39 (/39)



PIN ASSIGNMENT (Standard)

Package	Drain	Source	Gate
TO-39(/39)	Pin 3	Pin 1	Pin 2
SMD.22 (S.22)	Pin 1	Pin 2	Pin 3

CASE OUTLINE: SMD.22 (S.22)



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

DATA SHEET #: FT0041F

DOCX