

**Features**

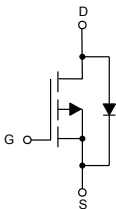
- TrenchFET Power Mosfet
- Load Switch for Portable Devices
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

**Maximum Ratings**

- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 90°C/W Junction to Ambient<sup>(Note 1)</sup>

Parameter	Symbol	Rating	Unit
Drain -source Voltage	V <sub>DS</sub>	-8	V
Gate -Source Voltage	V <sub>GS</sub>	±8	V
Drain Current-Continuous <sup>(Note 1)</sup>	I <sub>D</sub>	-4.1	A
Drain Source Current-Continuous	I <sub>S</sub>	-0.8	A
Total Power Dissipation	P <sub>D</sub>	1.4	W

**Internal Structure**

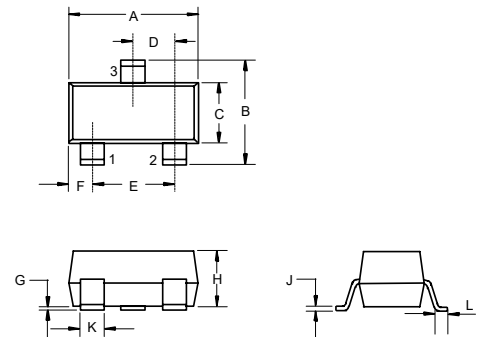


1. GATE
2. SOURCE
3. DRAIN

Marking:S5

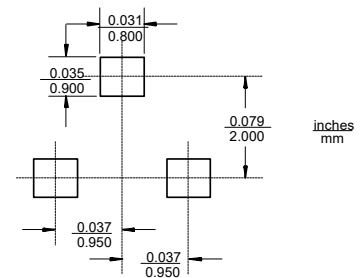
**P-Channel MOSFET**

**SOT-23**



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	0.110	0.120	2.80	3.04	
B	0.083	0.104	2.10	2.64	
C	0.047	0.055	1.20	1.40	
D	0.034	0.041	0.85	1.05	
E	0.067	0.083	1.70	2.10	
F	0.018	0.024	0.45	0.60	
G	0.0004	0.006	0.01	0.15	
H	0.035	0.043	0.90	1.10	
J	0.003	0.007	0.08	0.18	
K	0.012	0.020	0.30	0.51	
L	0.007	0.020	0.20	0.50	

**Suggested Solder Pad Layout**



**ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)**

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
<b>Static Characteristics</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-8			V
Gate-Threshold Voltage <sup>(Note 3)</sup>	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-0.55		-0.9	V
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}=\pm 8V, V_{DS}=0V$			$\pm 0.1$	$\mu A$
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-8V, V_{GS}=0V$			-1	$\mu A$
Drain-Source On-Resistance <sup>(Note 1)</sup>	$R_{DS(on)}$	$V_{GS}=-4.5V, I_D=-3.5A$			45	m $\Omega$
		$V_{GS}=-2.5V, I_D=-3.0A$			60	
		$V_{GS}=-1.8V, I_D=-2.0A$			90	
Forward Transconductance <sup>(Note 1)</sup>	$g_{FS}$	$V_{DS}=-5V, I_D=-4.1A$	6			S
<b>Dynamic Characteristics</b>						
Input Capacitance <sup>(Note 2,3)</sup>	$C_{iss}$			740		pF
Output Capacitance <sup>(Note 2,3)</sup>	$C_{oss}$	$V_{DS}=-4V, V_{GS}=0V, f=1MHz$		290		
Reverse Transfer Capacitance <sup>(Note 2,3)</sup>	$C_{rss}$			190		
Gate Resistance <sup>(Note 2,3)</sup>	$R_g$	$f=1MHz$	1.4	7	14	$\Omega$
Total Gate Charge <sup>(Note 2)</sup>	$Q_g$	$V_{DS}=-4V, V_{GS}=-4.5V, I_D=-4.1A$		7.8	15	} C
				4.5	9	
Gate-Source Charge <sup>(Note 2)</sup>	$Q_{gs}$	$V_{DS}=-4V, V_{GS}=-2.5V, I_D=-4.1A$		1.2		
Gate-Drain Charge <sup>(Note 2)</sup>	$Q_{gd}$			1.6		
Turn-On Delay Time <sup>(Note 2,3)</sup>	$t_{d(on)}$		$V_{DD}=-4V, V_{GEN}=-4.5V, I_D=-3.3A$ $R_L=1.2\Omega, R_{GEN}=1\Omega$		13	
Turn-On Rise Time <sup>(Note 2,3)</sup>	$t_r$			35	53	
Turn-Off Delay Time <sup>(Note 2,3)</sup>	$t_{d(off)}$			32	48	
Turn-Off Fall Time <sup>(Note 2,3)</sup>	$t_f$			1 $\epsilon$	20	
Turn-On Delay Time <sup>(Note 2,3)</sup>	$t_{d(on)}$	$V_{DD}=-4V, V_{GEN}=-8V, I_D=-3.3A$ $R_L=1.2\Omega, R_{GEN}=1\Omega$		5	1 $\epsilon$	
Turn-On Rise Time <sup>(Note 2,3)</sup>	$t_r$			11	17	
Turn-Off Delay Time <sup>(Note 2,3)</sup>	$t_{d(off)}$			22	33	
Turn-Off Fall Time <sup>(Note 2,3)</sup>	$t_f$			16	24	
<b>Drain-source body diode characteristics</b>						
Diode Forward Current	$I_S$	$T_C=25^\circ C$			-1.4	A
Diode Pulsed Forward Current <sup>(Note 1)</sup>	$I_{SM}$				-10	A
Diode Forward Voltage <sup>(Note 3)</sup>	$V_{SD}$	$I_F=-3.3A$		-0.8	-1.2	V

Note:

1. Pulse Test: Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$ .
2. Guaranteed by Design, Not Subject to Production Testing.
3. These Parameters Have No Way to Verify.

## Curve Characteristics

Fig. 1 - Output Characteristics

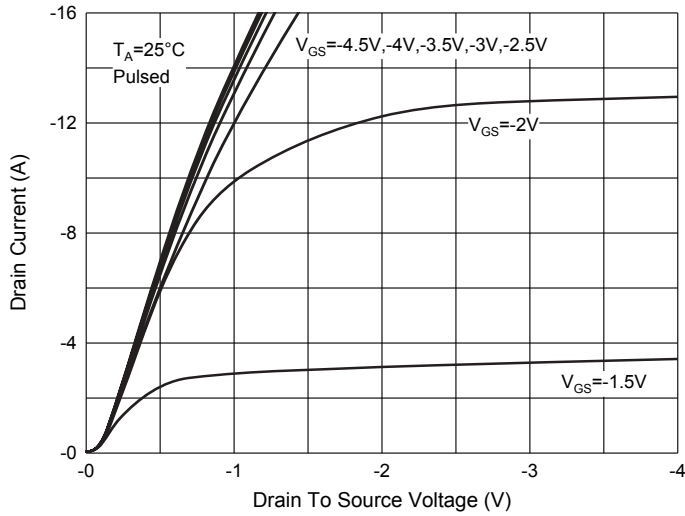


Fig. 2 - Transfer Characteristics

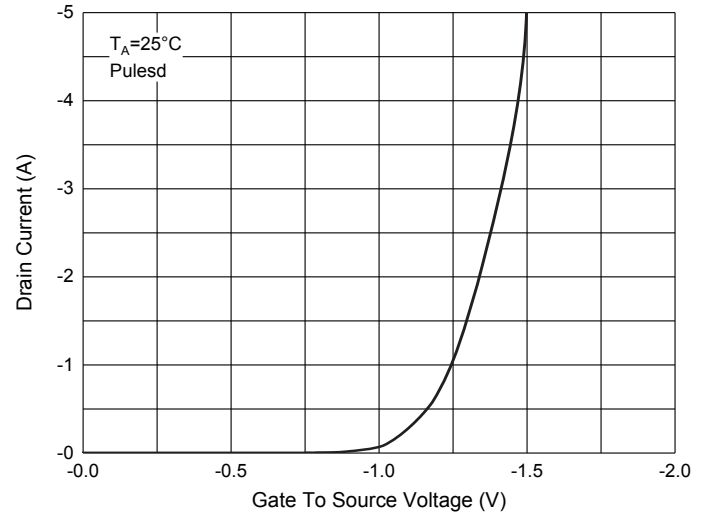


Fig. 3 -  $R_{DS(ON)} - I_D$

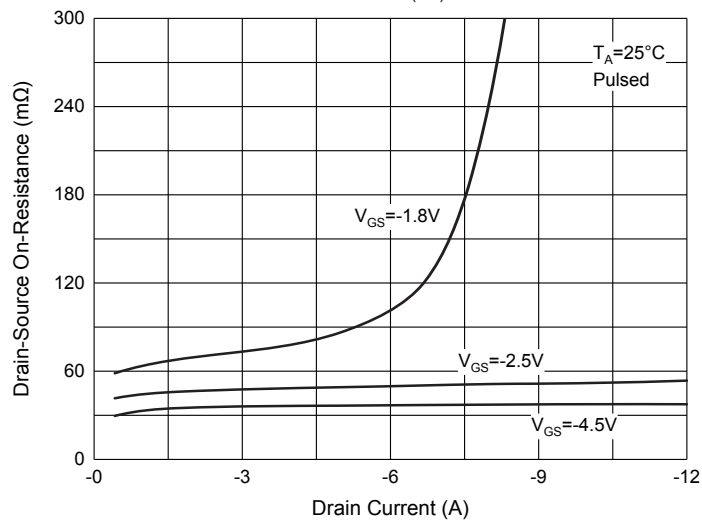


Fig. 4 -  $R_{DS(ON)} - V_{GS}$

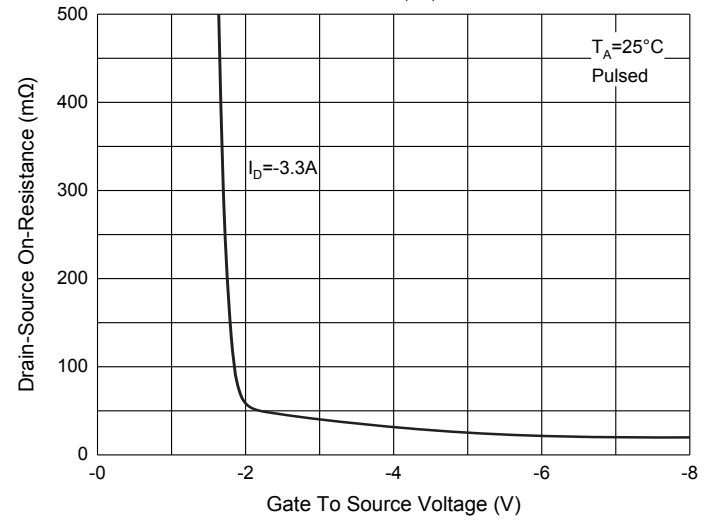
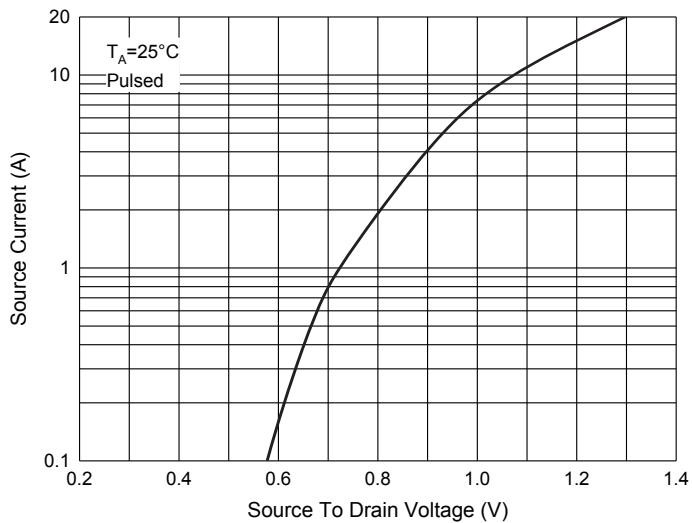


Fig. 5 -  $I_S - V_{SD}$



## Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:3Kpcs/Reel

Note : Adding "-HF" Suffix For Halogen Free, eg. Part Number-TP-HF

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