

Features

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

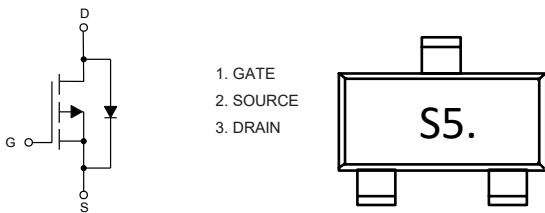
Maximum Ratings

- 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

Parameter	Symbol	Rating	Unit
Drain -source Voltage	V_{DS}	-8	V
Gate -Source Voltage	V_{GS}	±8	V
Drain Current-Continuous (Note 2)	I_D	-4.1	A
Drain Source Current-Continuous	I_S	-0.8	A
Total Power Dissipation	P_D	1.4	W

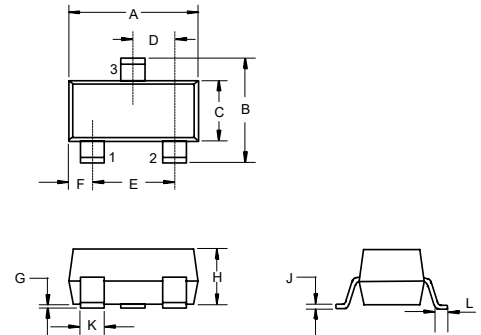
Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

Internal Structure and Marking Code



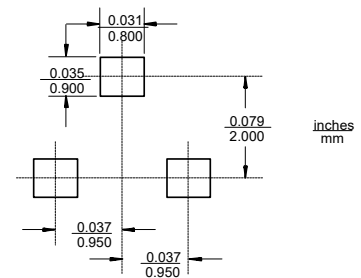
P-Channel MOSFET

SOT-23



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

Note:

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

Curve Characteristics

Fig. 1 - Output Characteristics

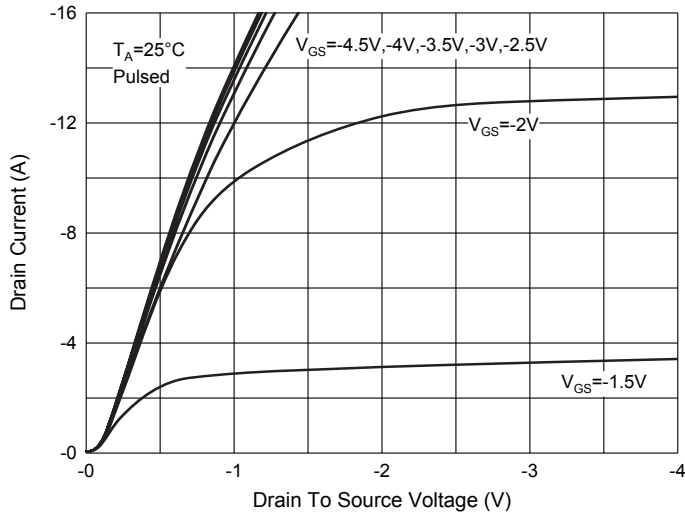


Fig. 2 - Transfer Characteristics

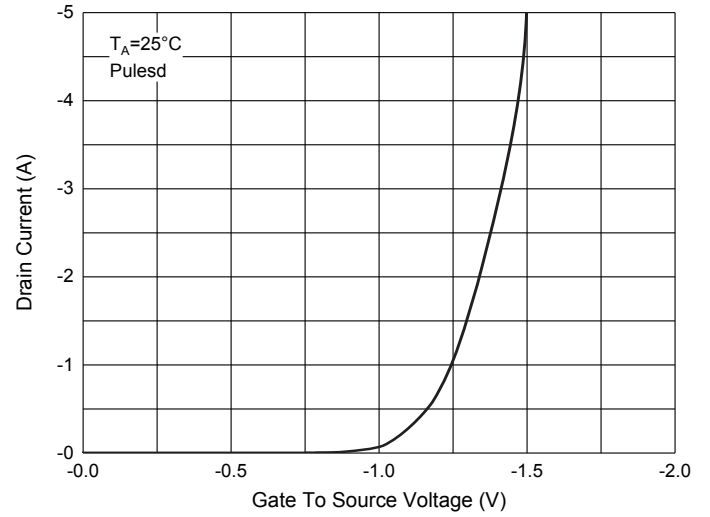


Fig. 3 - $R_{DS(ON)} - I_D$

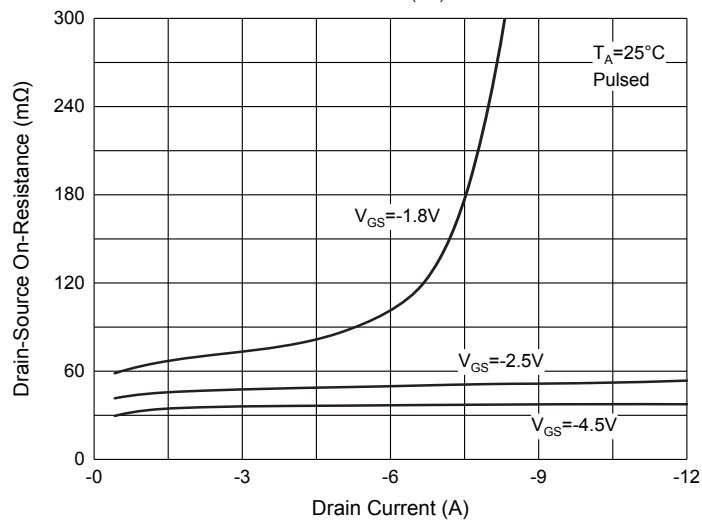


Fig. 4 - $R_{DS(ON)} - V_{GS}$

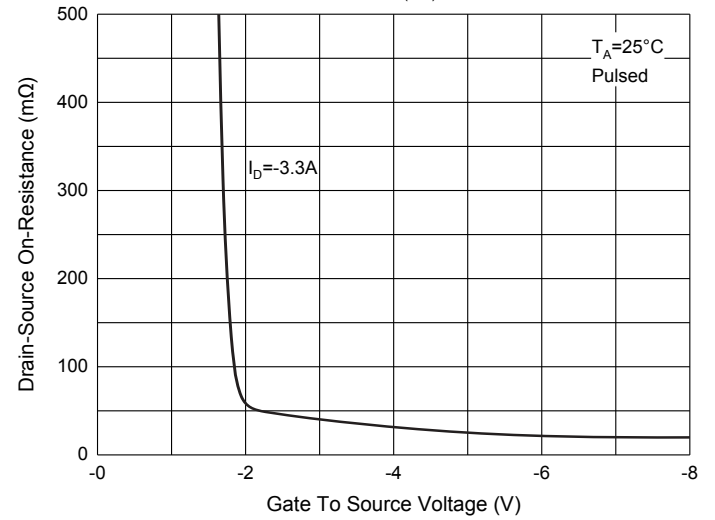
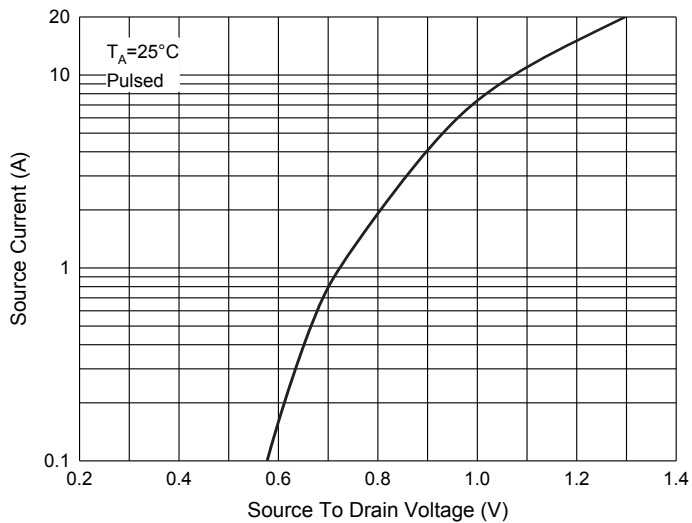


Fig. 5 - $I_S - V_{SD}$



Ordering Information

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

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