

## Features

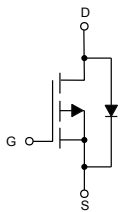
- TrenchFET Power MOSFET
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

## Maximum Ratings

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature: -55°C to +150°C
- Thermal Resistance: 114°C/W Junction to Ambient<sup>(Note 1)</sup>

Parameter	Symbol	Rating	Unit
Drain -source Voltage	$V_{DS}$	-30	V
Gate -Source Voltage	$V_{GS}$	±20	V
Continuous Drain Current	$I_D$	-2.7	A
Continuous Source-Drain Diode Current	$I_S$	-0.91	A
Power Dissipation	$P_D$	1.1	W

## Internal Structure

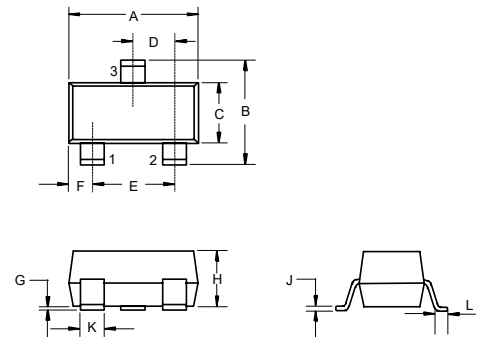


1. GATE
2. SOURCE
3. DRAIN

**Marking:S7**

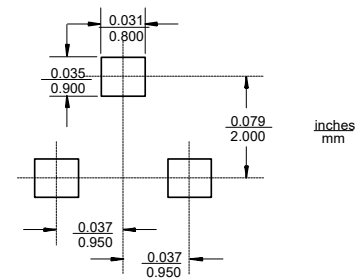
# P-Channel MOSFET

## 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	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=-250\mu A$	-30			V
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	-1.0		-3.0	V
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}=\pm 20V, V_{DS}=0V$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=-30V, V_{GS}=0V$			-1	$\mu A$
		$V_{DS}=-30V, V_{GS}=0V, T_J=55^\circ C$			-10	
Drain-Source On-Resistance <sup>(Note 2)</sup>	$R_{DS(on)}$	$V_{GS}=-4.5V, I_D=-2.5A$		110	138	m $\Omega$
		$V_{GS}=-10V, I_D=-3.5A$		73	88	
Forward Transconductance <sup>(Note 2)</sup>	$g_{FS}$	$V_{DS}=-10V, I_D=-3.5A$		7		S
<b>Dynamic Characteristics<sup>(Note 3)</sup></b>						
Input Capacitance	$C_{iss}$	$V_{DS}=-15V, V_{GS}=0V, f=1MHz$		340		pF
Output Capacitance	$C_{oss}$			67		
Reverse Transfer Capacitance	$C_{rss}$			51		
Total Gate Charge	Qg	$V_{DS}=-15V, V_{GS}=-4.5V, I_D=-2.5A$		4.1	6.2	nC
Gate-Source Charge	Qgs			1.3		
Gate-Drain Charge	Qgd			1.8		
Gate Resistance	Rg	f=1MHz		10		$\Omega$
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=-15V, V_{GEN}=-4.5V, R_L=15\Omega, I_D=-1A, R_G=1\Omega$		40	60	ns
Turn-On Rise Time	$t_r$			40	60	
Turn-Off Delay Time	$t_{d(off)}$			20	40	
Turn-Off Fall Time	$t_f$			17	30	
<b>Drain-Source Body Diode Characteristics</b>						
Body Diode Voltage	$V_{SD}$	$I_S=-0.75A, V_{GS}=0$		-0.8	-1.2	V

Note :

1. Surface Mounted on 1" x1" FR4 Board.
2. Pulse Test: Pulse Width $\leq 300\mu s$ , Duty Cycle $\leq 2\%$ .
3. Guaranteed by Design, Not Subject to Production Testing.

**Curve Characteristics**

Fig. 1 - Output Characteristics

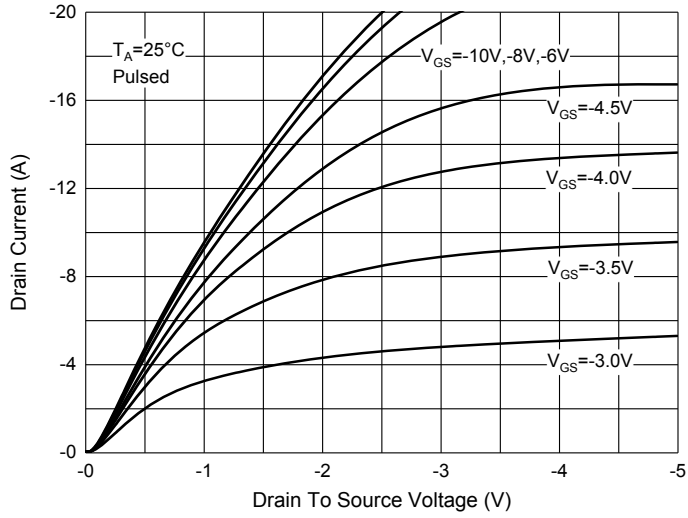


Fig. 2 - Transfer Characteristics

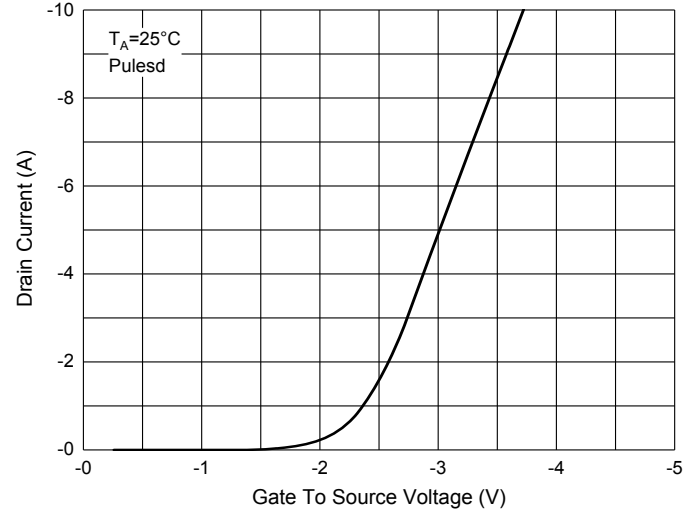


Fig. 3 -  $R_{DS(ON)} - I_D$

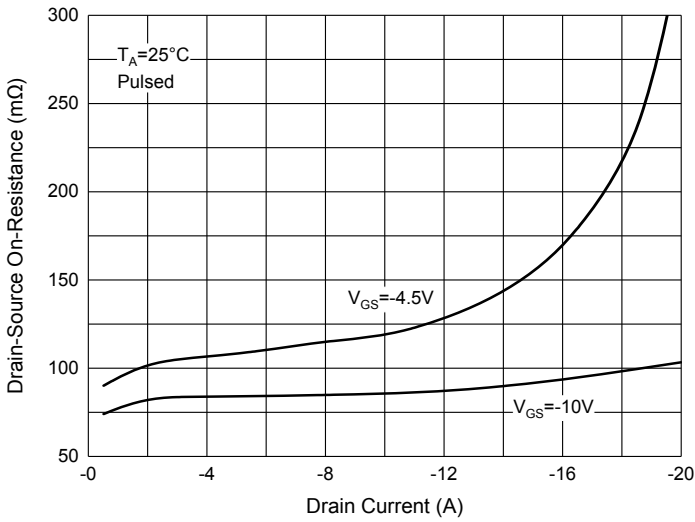


Fig. 4 -  $R_{DS(ON)} - V_{GS}$

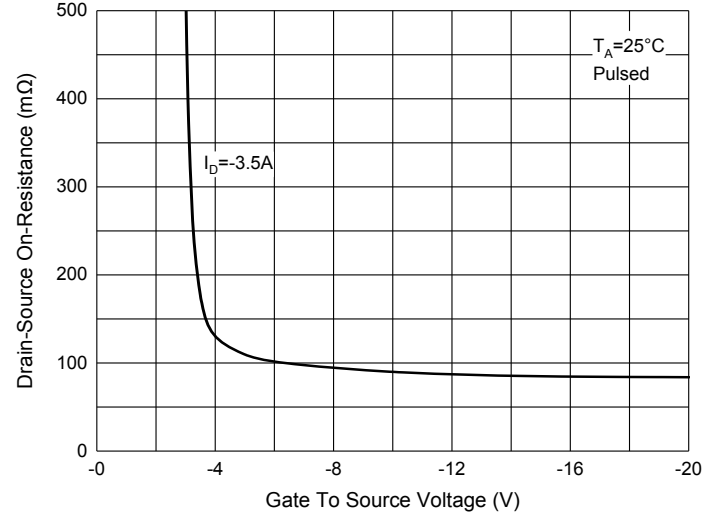
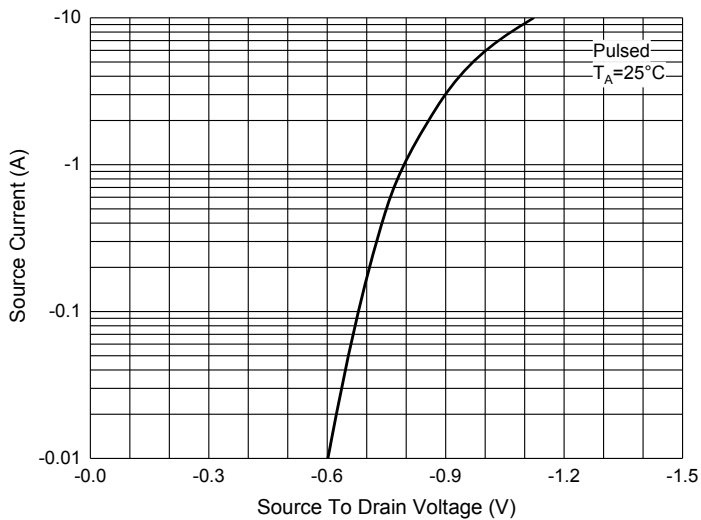


Fig. 5 -  $I_S - V_{SD}$



## 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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