

### Features

- TrenchFET Power MOSFET
- 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)

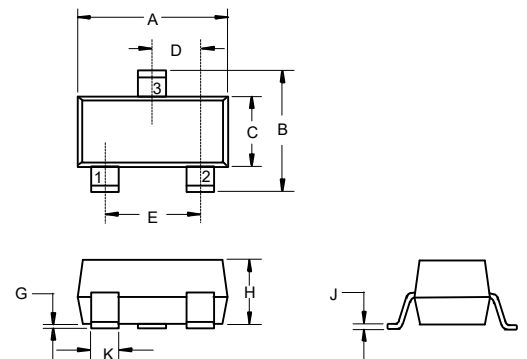
### Maximum Ratings

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature: -55°C to +150°C
- Thermal Resistance: 150°C/W Junction to Ambient<sup>(2,3)</sup>

Parameter	Symbol	Rating	Unit
Drain -source Voltage	$V_{DS}$	-100	V
Gate -Source Voltage	$V_{GS}$	±20	V
Continuous Drain Current <sup>(2,3)</sup>	$I_D$	-3	A
Continuous Source-Drain Diode Current	$I_S$	-3	A
Power Dissipation	$P_D$	0.83	W

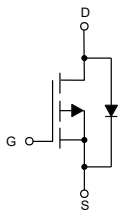
## P-Channel MOSFET

### SOT-23-3L

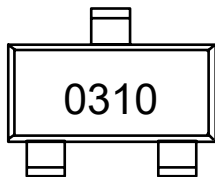


DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.113	0.117	2.87	2.97	
B	0.108	0.112	2.75	2.85	
C	0.061	0.065	1.55	1.65	
D	0.036	0.038	0.914	0.965	
E	0.073	0.077	1.85	1.95	
G	0.0016	0.0039	0.04	0.100	
H	0.041	0.045	1.05	1.15	
J	0.006	0.007	0.14	0.17	
K	0.012	0.020	0.30	0.50	

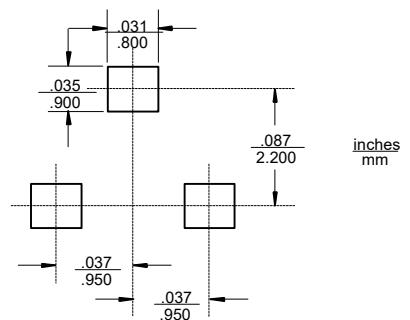
### Internal Structure and Marking Code



1. GATE
2. SOURCE
3. DRAIN



### Suggested Solder Pad Layout



**MOSFET ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$  unless otherwise noted)**

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
<b>Off Characteristics</b>						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = -250\mu A$	-100			V
Zero gate voltage drain current	$I_{DSS}$	$V_{DS} = -100V, V_{GS} = 0V$			-1	$\mu A$
Gate-body leakage current	$I_{GSS}$	$V_{GS} = \pm 20V, V_{DS} = 0V$			$\pm 100$	nA
<b>On Characteristics<sup>(4)</sup></b>						
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-1.1	-1.6	-2.0	V
Drain-source on-resistance	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -1.0A$		239	286	m $\Omega$
		$V_{GS} = -4.5V, I_D = -0.5A$		258	335	
<b>Dynamic Characteristics</b>						
Input Capacitance	$C_{iss}$	$V_{DS} = -50V, V_{GS} = 0V, f = 1MHz$		1010		pF
Output Capacitance	$C_{oss}$			26		
Reverse Transfer Capacitance	$C_{rss}$			27		
<b>Switching Characteristics</b>						
Total Gate Charge	$Q_g$	$V_{DS} = -50V, V_{GS} = -10V, I_D = -1A$		19		nC
Gate-Source Charge	$Q_{gs}$			4.6		
Gate-Drain Charge	$Q_{gd}$			1.8		
Turn-on delay time	$t_{d(on)}$	$V_{DD} = -50V, V_G = -10V, I_D = -1A$ $R_G = 3.9\Omega$		5.8		ns
Turn-on rise time	$t_r$			2.8		
Turn-off delay time	$t_{d(off)}$			28		
Turn-off fall time	$t_f$			18		
<b>Diode Characteristics</b>						
Reverse Recovery Time	$t_{rr}$	$I_F = -1A, di/dt = 100A/\mu s$		21		ns
Reverse Recovery Charge	$Q_{rr}$			18		nC
Diode Forward voltage	$V_{DS}$	$V_{GS} = 0V, I_S = -1A$			-1.3	V

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

2.  $R_{\theta JA}$  is measured with the device mounted on 1 in<sup>2</sup> FR4 board with 1oz. single side copper, in a still air environment with  $T_A = 25^\circ\text{C}$ .

3.  $R_{\theta JA}$  is measured in the steady state

4. Pulse test : Pulse width  $\leq 380\mu s$ , duty cycle  $\leq 2\%$ .

## Curve Characteristics

Fig. 1 - Typical Output Characteristics

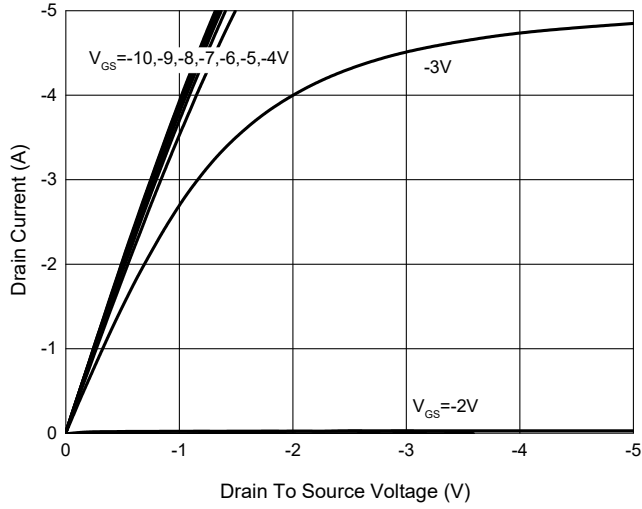


Fig. 2 - Transfer Characteristics

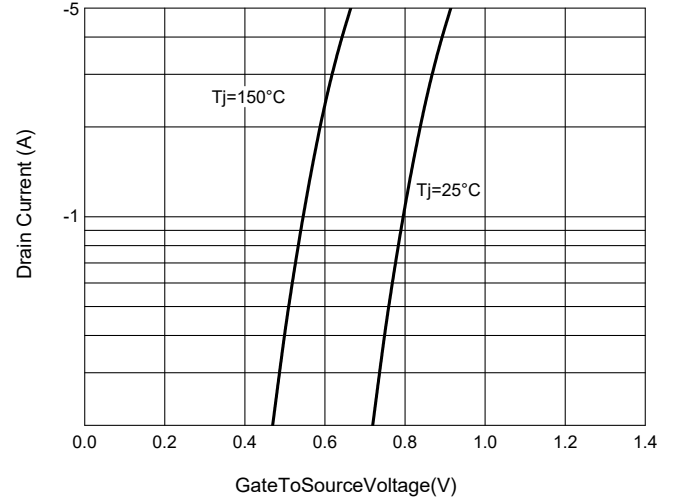


Fig. 3 -  $R_{DS(ON)} - I_D$

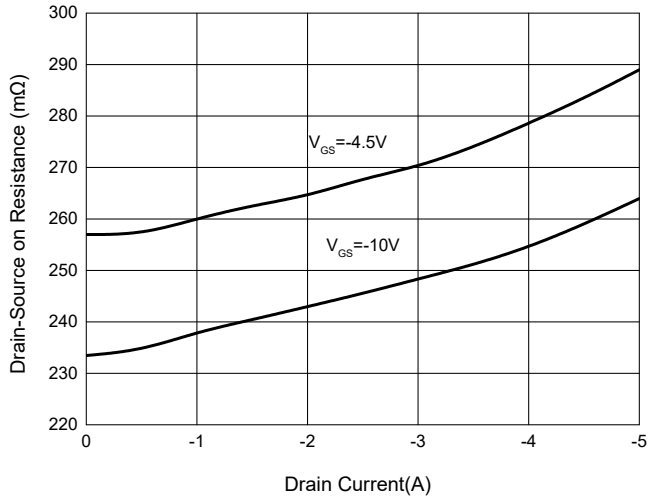


Fig. 4 - Normalized On Resistance Characteristics

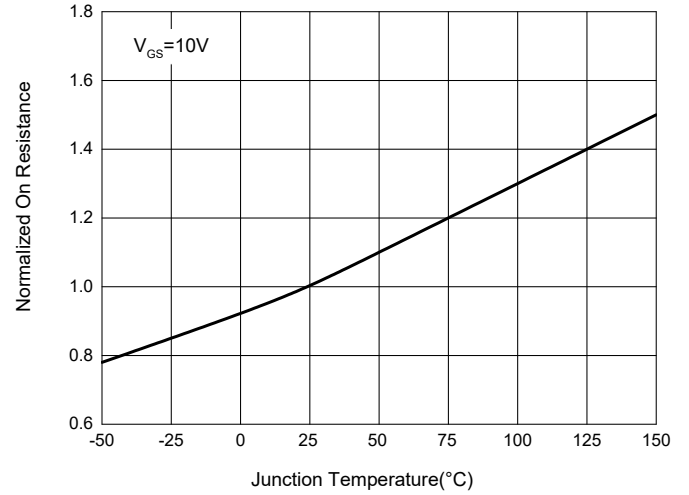


Fig. 5 - Gate Charge

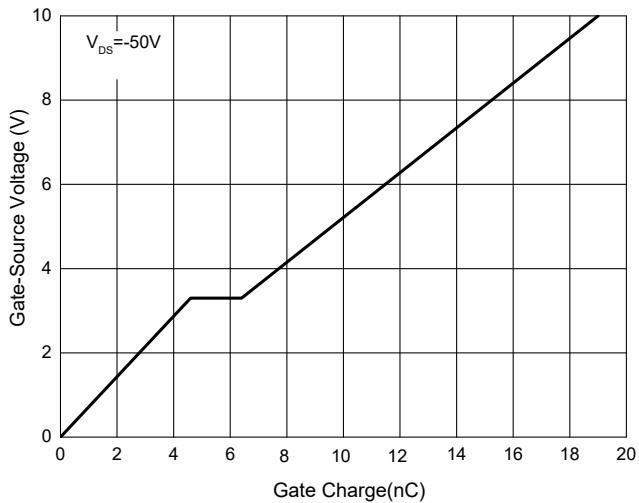
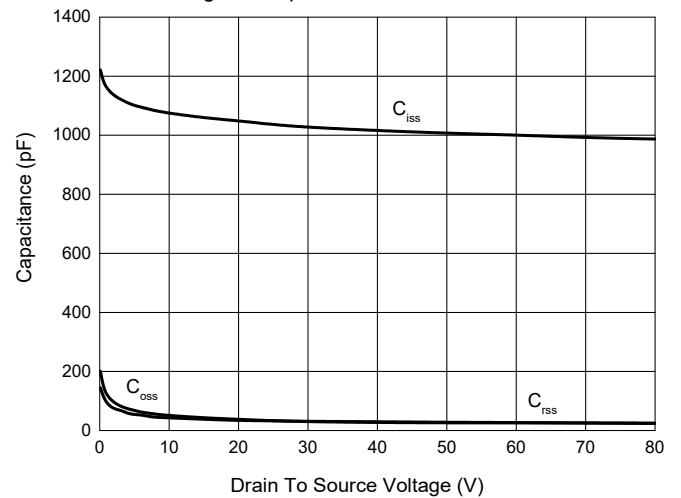


Fig. 6 - Capacitance Characteristics



## Ordering Information

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

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