

**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)

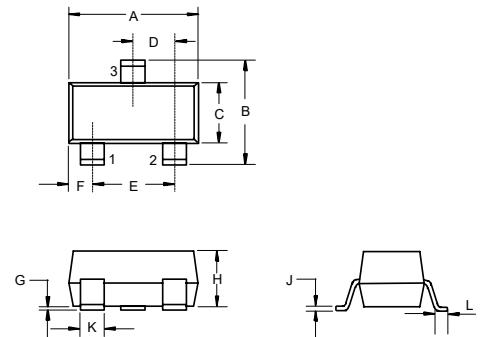
**Maximum Ratings**

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature: -55°C to +150°C
- Thermal Resistance: 162°C/W Junction to Ambient<sup>(2,3)</sup>

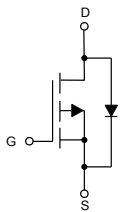
Parameter	Symbol	Rating	Unit
Drain -source Voltage	$V_{DS}$	-100	V
Gate -Source Voltage	$V_{GS}$	±20	V
Continuous Drain Current <sup>(2,3)</sup>	$I_D$	-1	A
Continuous Source-Drain Diode Current	$I_S$	-1	A
Power Dissipation	$P_D$	0.77	W

**P-Channel MOSFET**

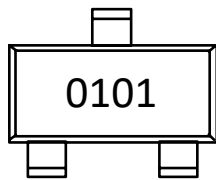
**SOT-23**



**Internal Structure and Marking Code**

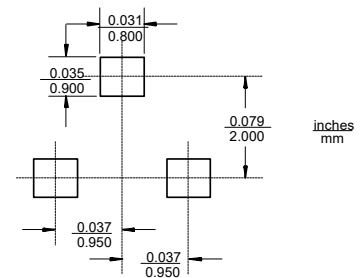


- 1. GATE
- 2. SOURCE
- 3. DRAIN



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**



**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	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -250\mu A$	-1.5	-2.2	-3.0	V
Drain-source on-resistance	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -1.0A$		580	800	m $\Omega$
		$V_{GS} = -4.5V, I_D = -0.5A$		650	1000	
<b>Dynamic Characteristics</b>						
Input Capacitance	$C_{iss}$	$V_{DS} = -40V, V_{GS} = 0V, f = 1MHz$		388		pF
Output Capacitance	$C_{oss}$			19		
Reverse Transfer Capacitance	$C_{rss}$			15		
<b>Switching Characteristics</b>						
Total Gate Charge	$Q_g$	$V_{DS} = -10V, V_{GS} = -10V, I_D = -1A$		3.2		nC
Gate-Source Charge	$Q_{gs}$			0.5		
Gate-Drain Charge	$Q_{gd}$			1.1		
Turn-on delay time	$t_{d(on)}$	$V_{DD} = -10V, V_G = -10V, I_D = -1A$ $R_G = 2.5\Omega$		10		ns
Turn-on rise time	$t_r$			32		
Turn-off delay time	$t_{d(off)}$			28		
Turn-off fall time	$t_f$			9		
<b>Diode Characteristics</b>						
Diode forward current	$I_S$	$T_A = 25^\circ\text{C}$			-1	A
Diode pulsed forward current	$I_{SM}$				-4	A
Diode Forward voltage	$V_{DS}$	$V_{GS} = 0V, I_S = -1A$			-1.2	V

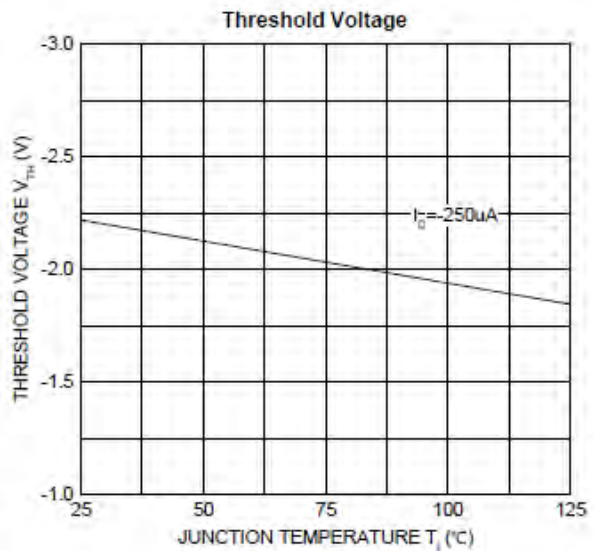
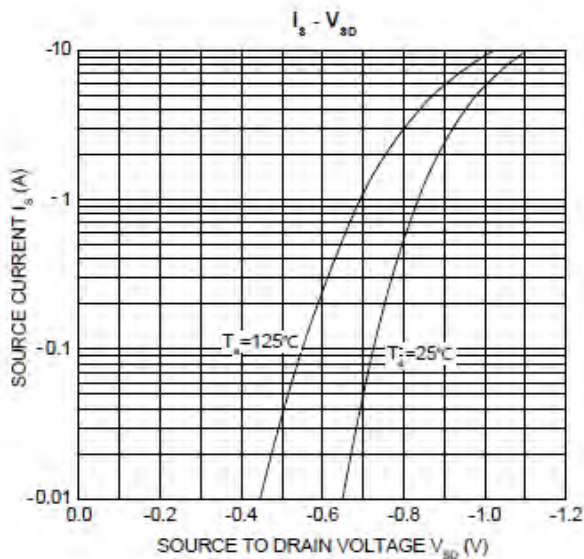
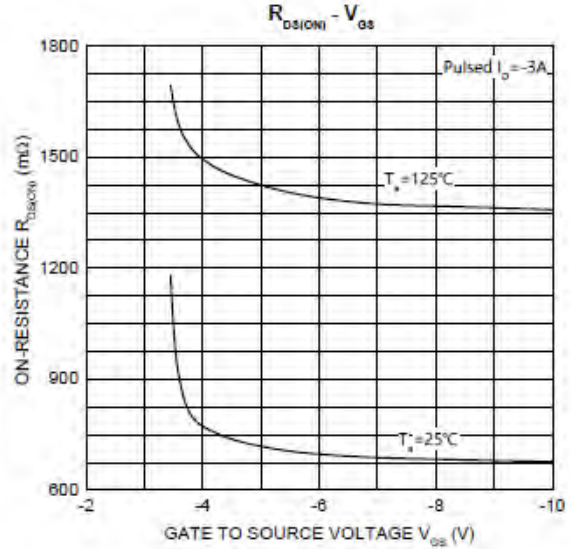
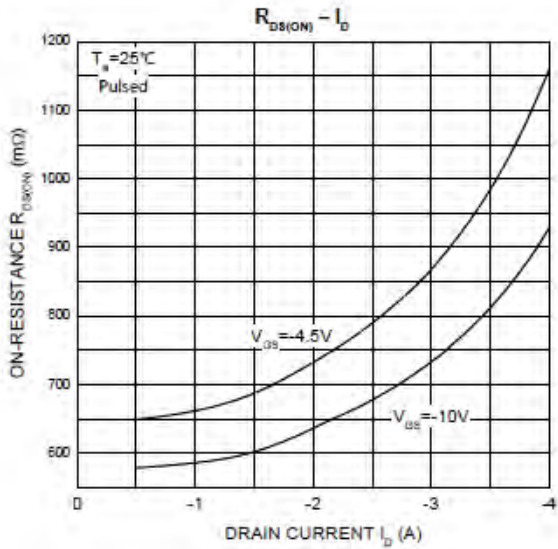
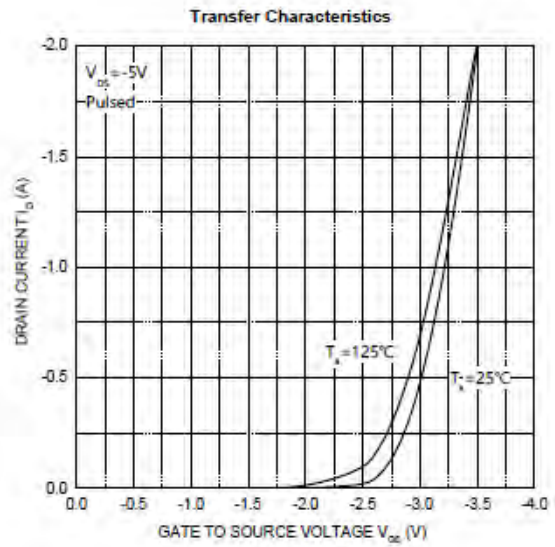
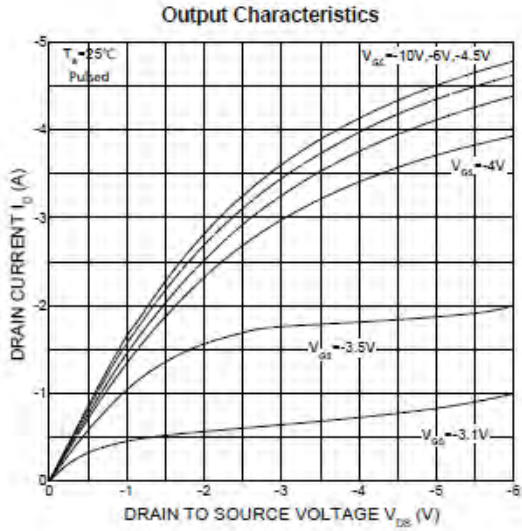
Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

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



## Ordering Information

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

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