

## Features

- Advanced trench cell design
- ESD Protected up to 2.5KV (HBM)
- Surface Mount Package
- 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

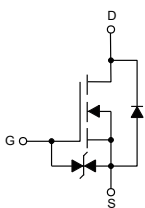
- Operating Junction Temperature Range : -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Maximum Thermal Resistance: 150°C/W Junction to Ambient (Note 2)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	30	V
Gate-Source Voltage	$V_{GS}$	$\pm 12$	V
Continuous Drain Current	$I_D$	1.1	A
Pulsed Drain Current	$I_{DM}$	4.4	A
Total Power Dissipation	$P_D$	0.83	W

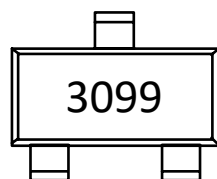
Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

2. The Value of  $R_{\theta JA}$  is Measured with the Device Mounted on 1in<sup>2</sup> FR-4 Board with 2oz. Copper, in a Still Air Environment With  $T_A=25^\circ\text{C}$

## Internal Structure and Marking Code

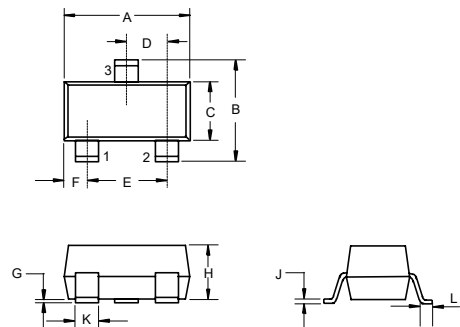


1. GATE
2. SOURCE
3. DRAIN



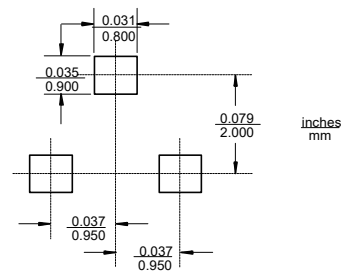
# N-Channel MOSFET

## 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 @ 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-Source Leakage Current	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 12V$			$\pm 10$	$\mu A$
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=24V, V_{GS}=0V$			100	nA
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.5	1	1.5	V
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=0.5A$		340	408	m $\Omega$
		$V_{GS}=4.5V, I_D=0.4A$		415	518	
		$V_{GS}=2.5V, I_D=0.3A$		616	800	
Diode Forward Voltage	$V_{SD}$	$V_{GS}=0V, I_S=0.5A$			1.2	V
Maximum Body-Diode Continuous Current	$I_S$				1.1	A
<b>Dynamic Characteristics</b>						
Input Capacitance	$C_{iss}$	$V_{DS}=15V, V_{GS}=0V, f=1MHz$		61		pF
Output Capacitance	$C_{oss}$			14		
Reverse Transfer Capacitance	$C_{riss}$			7		
<b>Switching Characteristics</b>						
Total Gate Charge	$Q_g$	$V_{DS}=15V, V_{GS}=10V, I_D=0.5A$		1.72		nC
Gate-Source Charge	$Q_{gs}$			0.35		
Gate-Drain Charge	$Q_{gd}$			0.17		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V, V_{DS}=15V, I_D=10A, R_{GEN}=2.2\Omega$		2.2		ns
Turn-On Rise Time	$t_r$			17.8		
Turn-Off Delay Time	$t_{d(off)}$			18.8		
Turn-Off Fall Time	$t_f$			21		

Curve Characteristics

Fig. 1 - Typical Output Characteristics

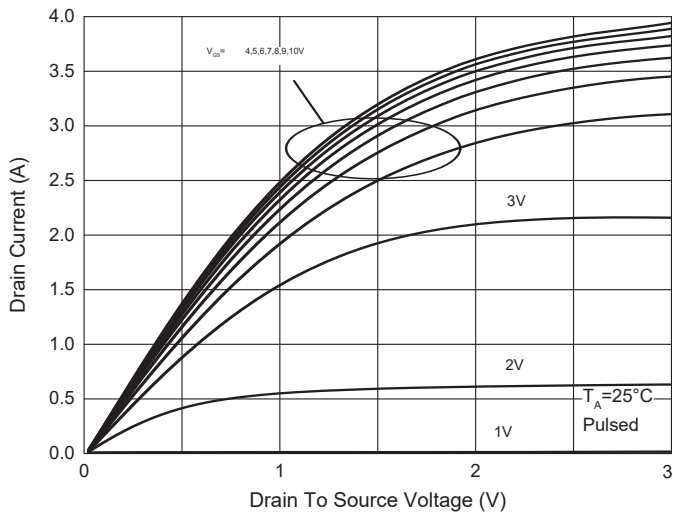


Fig. 2 -  $R_{DS(ON)} - I_D$

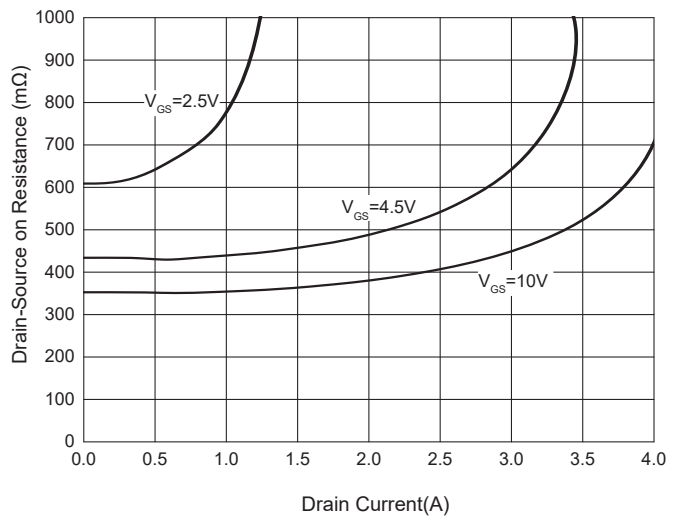


Fig. 3 - Capacitance Characteristics

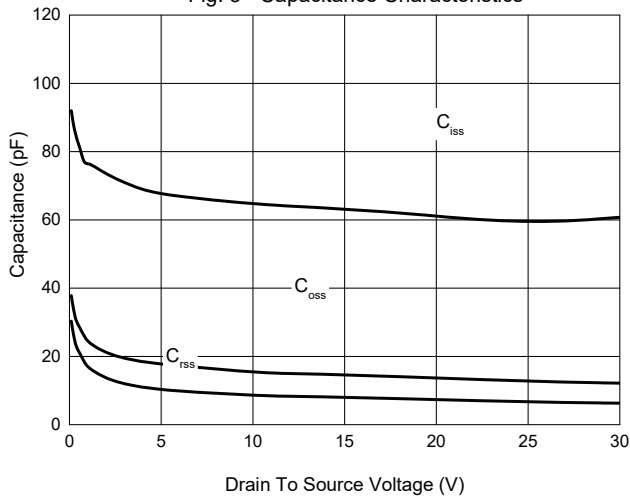


Fig. 4 - Gate Charge

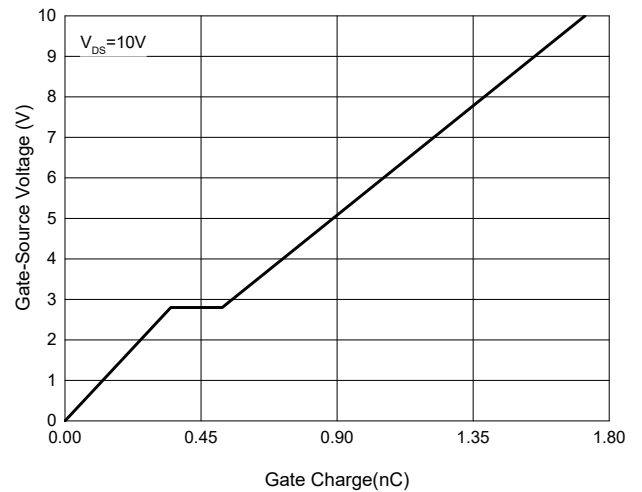


Fig. 5-  $I_S - V_{SD}$

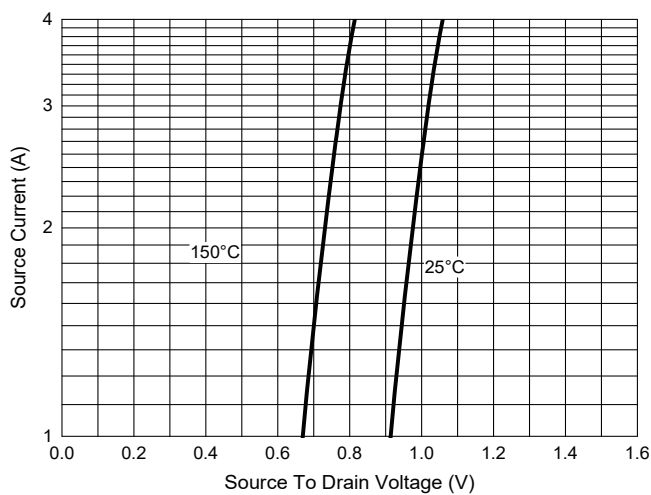
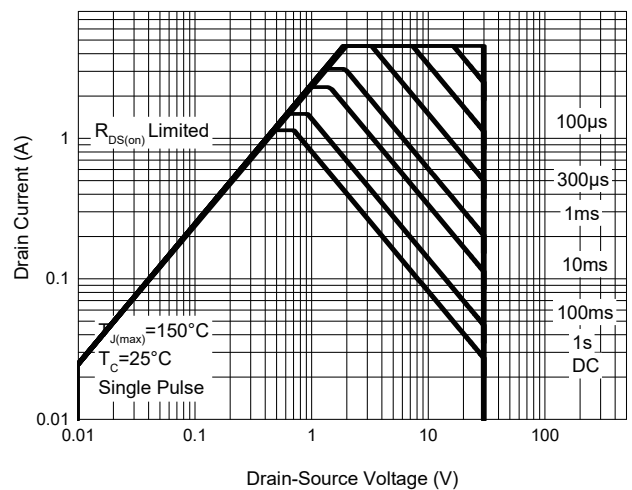


Fig. 6 - Safe Operation Area



## Ordering Information

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

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