

**Features**

- High Dense Cell Design For Extremely Low  $R_{DS(ON)}$
- Rugged and Reliable
- 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)

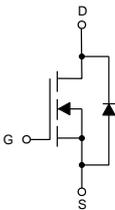
**Maximum Ratings**

- Operating Junction Temperature Range:  $-55^{\circ}\text{C}$  to  $+150^{\circ}\text{C}$
- Storage Temperature:  $-55^{\circ}\text{C}$  to  $+150^{\circ}\text{C}$
- Thermal Resistance:  $417^{\circ}\text{C/W}$  Junction to Ambient

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	50	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Drain Current-Continuous	$I_D$	0.22	A
Power Dissipation	$P_D$	0.30	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**

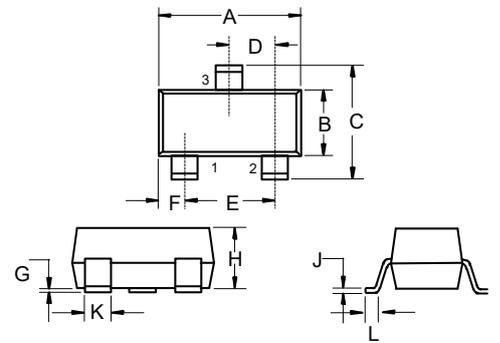


1. GATE
2. SOURCE
3. DRAIN

**Marking:SS**

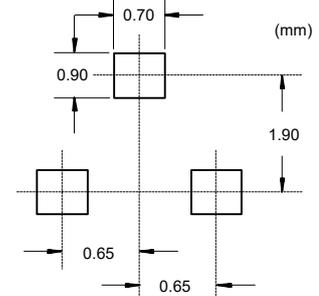
**N-Channel MOSFET**

**SOT-323**



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.071	0.087	1.80	2.20	
B	0.045	0.053	1.15	1.35	
C	0.083	0.096	2.10	2.45	
D	0.026		0.65		TYP.
E	0.047	0.055	1.20	1.40	
F	0.012	0.016	0.30	0.40	
G	0.000	0.004	0.00	0.10	
H	0.035	0.044	0.90	1.10	
J	0.002	0.010	0.05	0.25	
K	0.006	0.016	0.15	0.40	
L	0.010	0.018	0.26	0.46	

**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	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	50			V
Gate-Threshold Voltage <sup>(Note1)</sup>	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=1mA$	0.8		1.50	V
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}=\pm 20V, V_{DS}=0V$			$\pm 100$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=50V, V_{GS}=0V$			0.5	$\mu A$
		$V_{DS}=50V, V_{GS}=0V, T_J=125^\circ C$			5	
		$V_{DS}=30V, V_{GS}=0V$			0.1	
Drain-Source On-Resistance <sup>(Note2)</sup>	$R_{DS(on)}$	$V_{GS}=10V, I_D=0.22A$			3.5	$\Omega$
		$V_{GS}=4.5V, I_D=0.22A$			6	
Forward Transconductance <sup>(Note2)</sup>	$g_{FS}$	$V_{DS}=10V, I_D=0.22A$	0.12			S
Diode Forward Voltage <sup>(Note2)</sup>	$V_{SD}$	$V_{GS}=0V, I_S=0.44A$			1.4	V
<b>Dynamic Characteristics<sup>(Note3)</sup></b>						
Input Capacitance	$C_{iss}$	$V_{DS}=25V, V_{GS}=0V, f=1MHz$		27		$\mu F$
Output Capacitance	$C_{oss}$			13		
Reverse Transfer Capacitance	$C_{rss}$			6		
<b>Switching Characteristics</b>						
Turn-On Delay Time <sup>(Note2,3)</sup>	$t_{d(on)}$	$V_{DD}=30V, V_{DS}=10V, R_{GEN}=6\Omega, I_D=0.29A$			5	ns
Rise Time <sup>(Note2,3)</sup>	$t_r$				18	
Turn-Off Delay Time <sup>(Note2,3)</sup>	$t_{d(off)}$				36	
Fall Time <sup>(Note2,3)</sup>	$t_f$				14	

Note:

 2.Pulse Test: Pulse Width  $\leq 300\mu s$ , Duty Cycle  $\leq 2\%$ .

3.These Parameters Have No Way To Verify.

**Curve Characteristics**

Fig. 1 - Output Characteristics

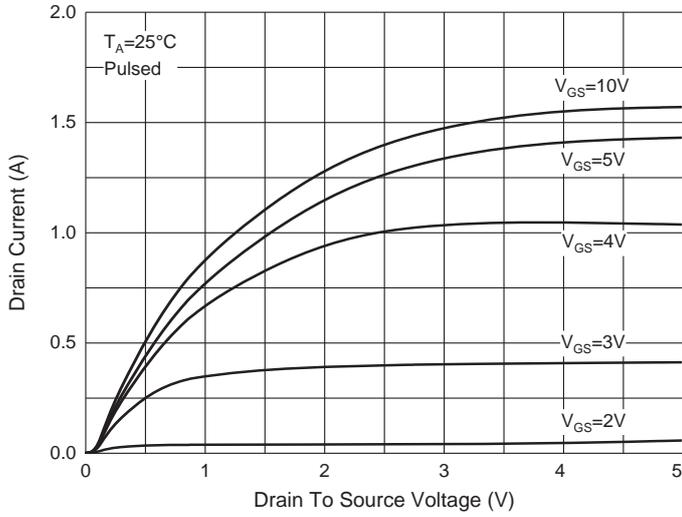


Fig. 2 - Transfer Characteristics

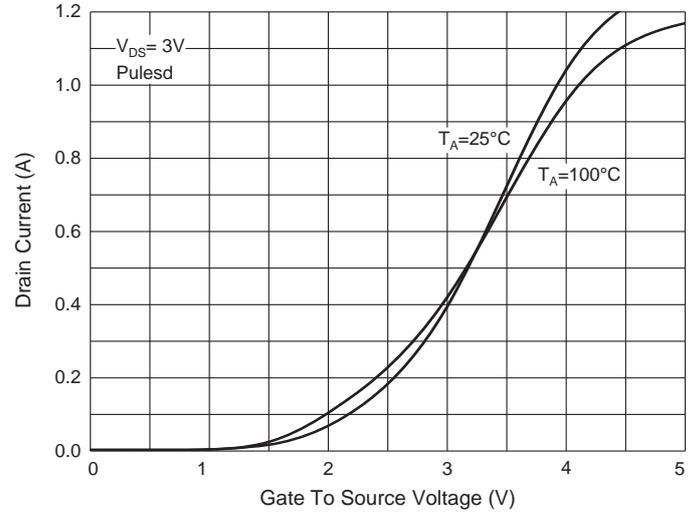


Fig. 3 -  $R_{DS(ON)}-I_D$

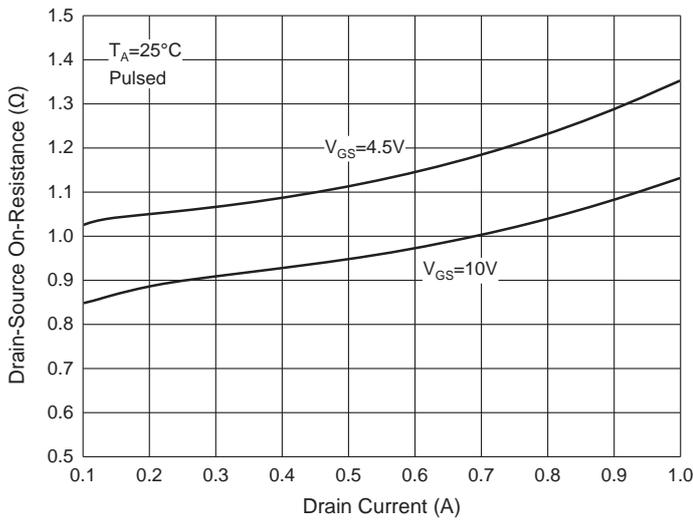


Fig. 4 -  $R_{DS(ON)}-V_{GS}$

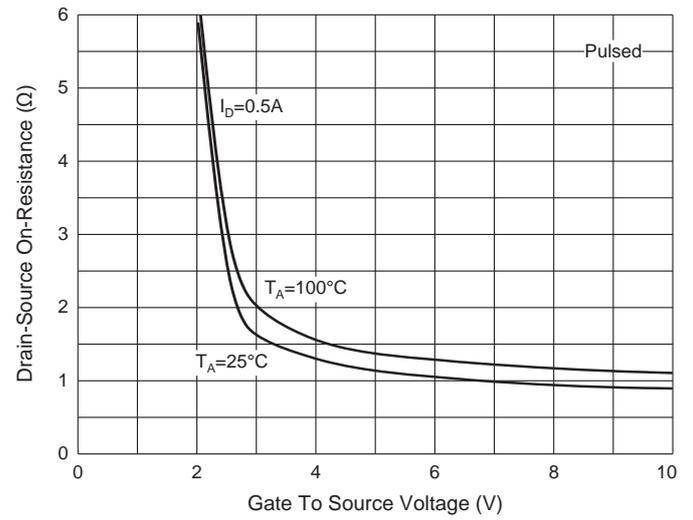


Fig. 5 -  $I_S-V_{SD}$

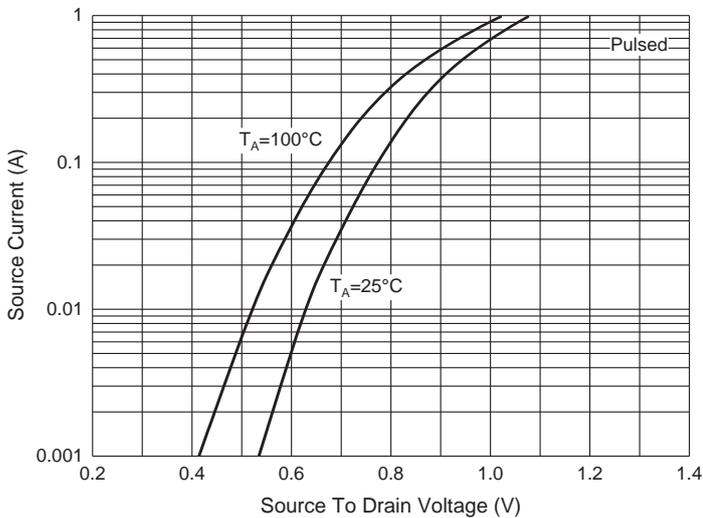
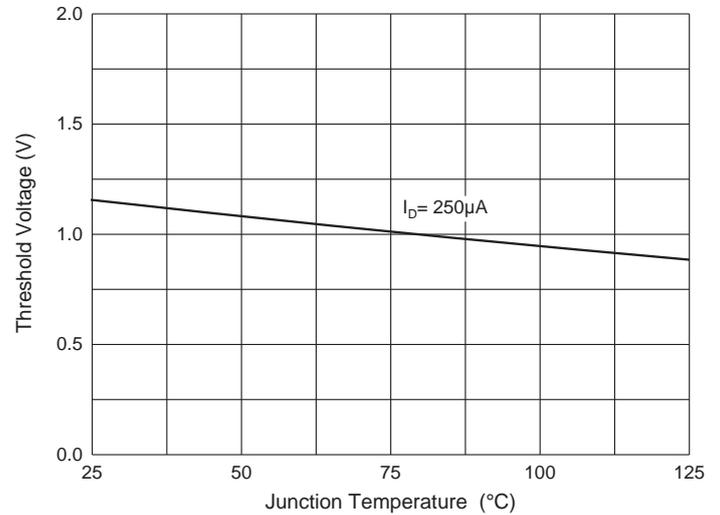


Fig. 6 - Threshold Voltage



## Ordering Information

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

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