

### Features

- High Density Cell Design for Low  $R_{DS(ON)}$
- Voltage Controlled Small Signal Switch
- 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)

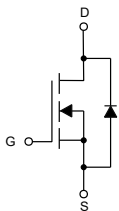
### Maximum Ratings

- 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	$V_{DS}$	60	V
Gate-Source Voltage	$V_{GS}$	$\pm 30$	V
Peak Gate-Source Voltage $T_p < 50\mu\text{s}$ , Duty Cycle=0.25	$V_{GSM}$	$\pm 40$	V
Drain Current-Continuous	$I_D$	0.115	A
Power Dissipation	$P_D$	0.3	W

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

### Internal Structure

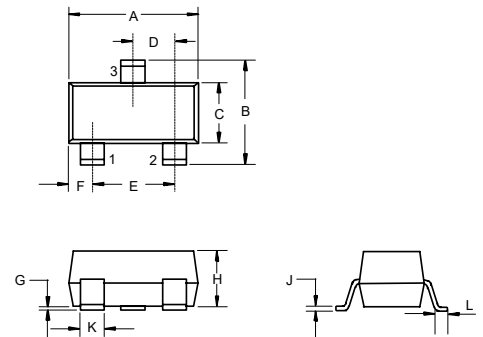


1. GATE
2. SOURCE
3. DRAIN

**Marking: 7002A**

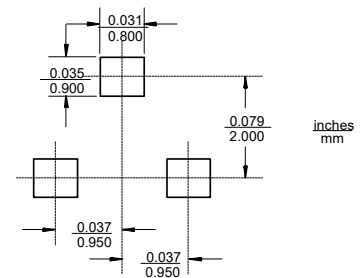
# N-Channel MOSFET

## SOT-23



DIM	INCHES		MM		NOTE
	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	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	60			V
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0	1.4	2.5	V
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}=\pm 30V, V_{DS}=0V$			$\pm 1$	$\mu A$
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=60V, V_{GS}=0V$			1	$\mu A$
On-State Drain Current	$I_{D(on)}$	$V_{DS}=7.0V, V_{GS}=10V$	500			mA
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=500mA$			3	$\Omega$
		$V_{GS}=4.5V, I_D=200mA$			4	
On-State Drain-Source Voltage	$V_{DS(on)}$	$V_{GS}=10V, I_D=500mA$			3	V
		$V_{GS}=5V, I_D=50mA$			0.375	
<b>Dynami Characteristics</b>						
Input Capacitance <sup>(2)</sup>	$C_{iss}$	$V_{DS}=25V, V_{GS}=0V, f=1MHz$			50	pF
Output Capacitance <sup>(2)</sup>	$C_{oss}$				25	
Reverse Transfer Capacitance <sup>(2)</sup>	$C_{rss}$				5	
<b>Switching Characteristics</b>						
Turn-On Delay Time <sup>(2)</sup>	$t_{d(on)}$	$V_{DD}=25V, V_{GEN}=10V, R_L=50\Omega, I_D=500mA, R_{GEN}=25\Omega$			20	ns
Turn-Off Delay Time <sup>(2)</sup>	$t_{d(off)}$				40	
<b>Source-Drain Diode Characteristics</b>						
Diode Forward Voltage	$V_{SD}$	$V_{GS}=0V, I_S=115mA$	0.6	0.82	1	V
Source Current Continuous	$I_S$				115	mA

Note: 2. These parameters have no way to verify.

Curve Characteristics

Fig. 1 - Output Characteristics

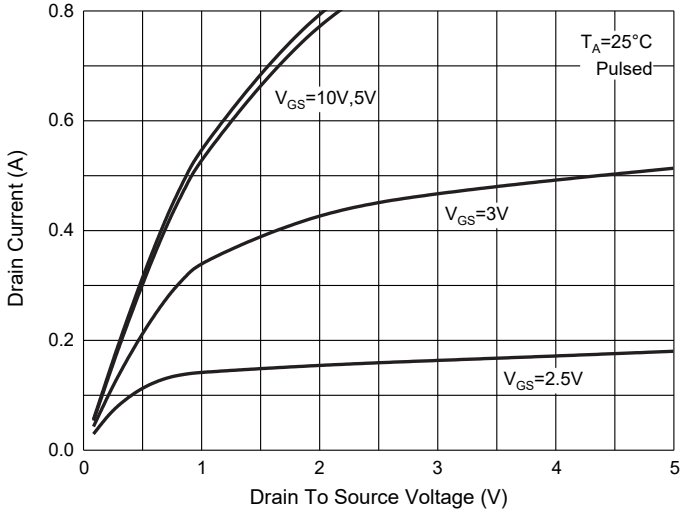


Fig. 2 - Transfer Characteristics

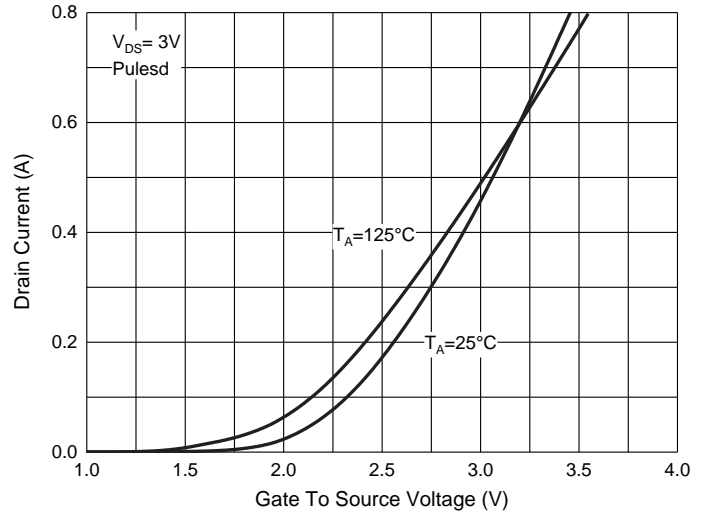


Fig. 3 -  $R_{DS(ON)} - I_D$

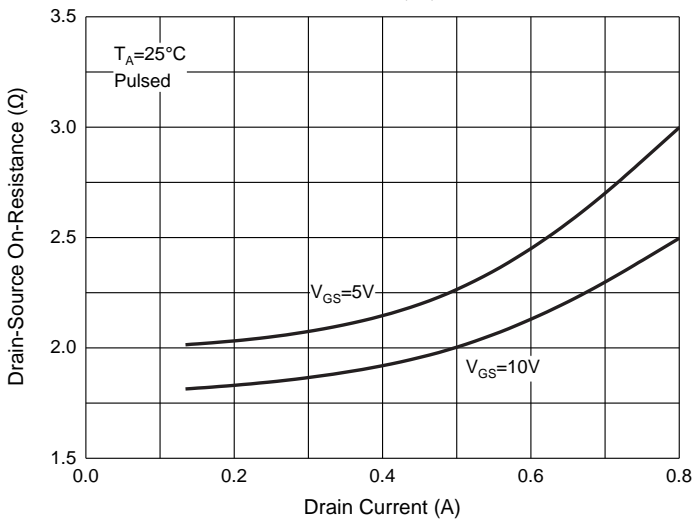


Fig. 4 -  $R_{DS(ON)} - V_{GS}$

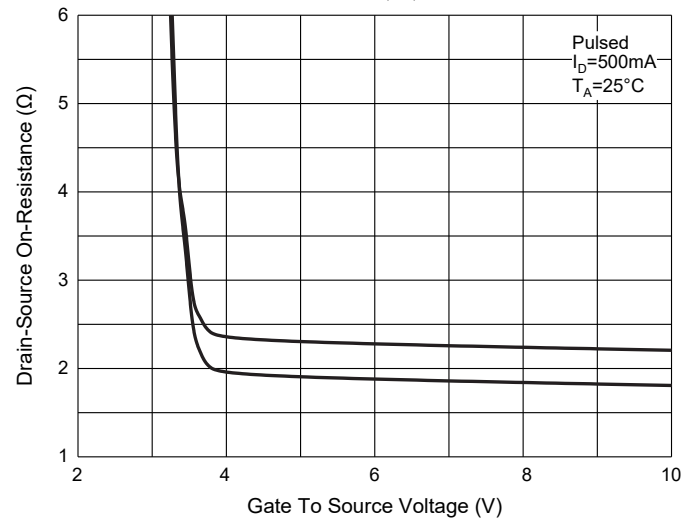


Fig. 5 -  $I_S - V_{SD}$

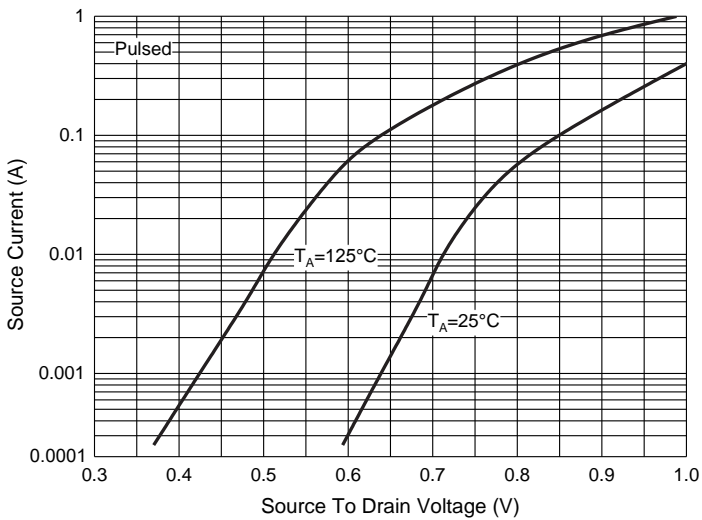
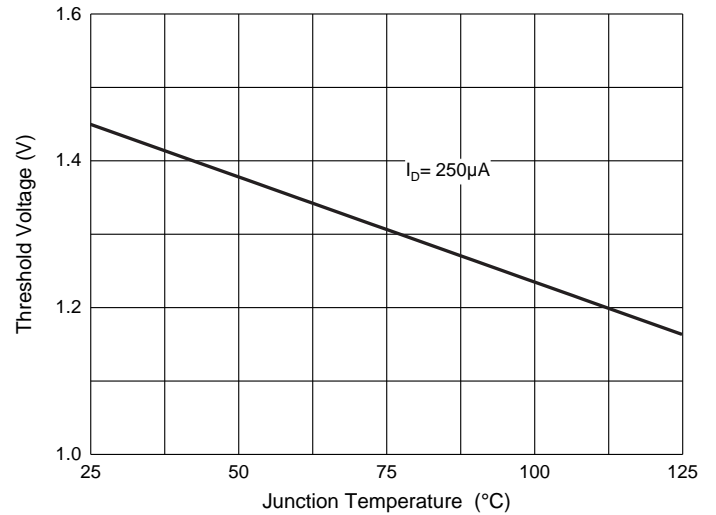


Fig. 6 - Threshold Voltage



## Ordering Information

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

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