

## Features

- Low Gate Threshold Voltage
- Low Input Capacitance
- Low On-Resistance
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Halogen Free. "Green" Device <sup>(1)</sup>
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

## Maximum Ratings

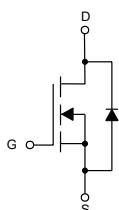
- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature: -55°C to +150°C
- Thermal Resistance: 833°C/W Junction to Ambient

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	60	V
Gate-Source Voltage	$V_{GS}$	Continuous	±20
		Pulsed	±40
Drain-Gate Voltage	$R_{GS} \leq 1.0M\Omega$	60V	V
Drain Current <sup>(2)</sup>	$I_D$	Continuous	0.115
		Continuous@100°C	0.073
		Pulsed	0.80
Power Dissipation <sup>(2)</sup>	$P_D$	0.15	W

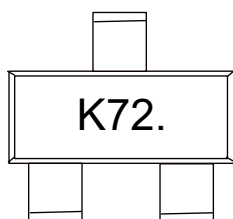
Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

2. Valid Provided That Terminals are Kept at Specified Ambient Temperature.

## Internal Structure and Marking Code

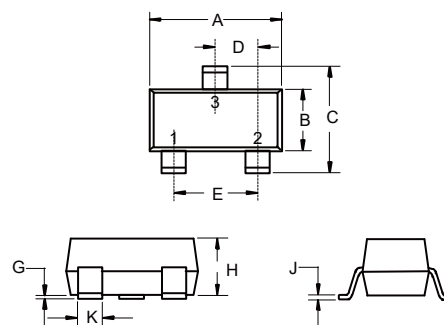


1. GATE
2. SOURCE
3. DRAIN



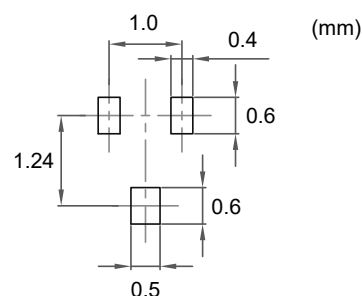
# N-Channel MOSFET

## SOT-523



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.059	0.067	1.50	1.70	
B	0.030	0.033	0.75	0.85	
C	0.057	0.069	1.45	1.75	
D	0.020		0.50		TYP.
E	0.035	0.043	0.90	1.10	
G	0.000	0.004	0.00	0.10	
H	0.024	0.031	0.60	0.80	
J	0.004	0.008	0.10	0.20	
K	0.006	0.014	0.15	0.35	

### Suggested Solder Pad Layout



**ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)**

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=10\mu A$	60			V
Gate-Threshold Voltage <sup>(3)</sup>	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0		2.0	V
Gate-Body Leakage	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 20V$			±10	μA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=60V, V_{GS}=0V, T_C=25^\circ C$			1.0	μA
		$V_{DS}=60V, V_{GS}=0V, T_C=125^\circ C$			500	
On-State Drain Current	$I_{D(on)}$	$V_{DS}=7.5V, V_{GS}=10V$	500	1000		mA
Drain-Source On-Resistance <sup>(3)</sup>	$R_{DS(on)}$	$V_{GS}=10V, I_D=500mA$		4.4	13.5	Ω
		$V_{GS}=5V, I_D=50mA$		2.0	7.5	
Forward Transconductance	$g_{fs}$	$V_{DS}=10V, I_D=200mA$	80			ms
Input Capacitance	$C_{iss}$	$V_{DS}=25V, V_{GS}=0V, f=1MHz$		22	50	pF
Output Capacitance	$C_{oss}$			11	25	
Reverse Transfer Capacitance	$C_{rss}$			2	5	
Turn-On Time	$t_{d(on)}$	$V_{DD}=30V, V_{GEN}=10V, R_L=150\Omega,$ $I_D=200mA, R_{GEN}=25\Omega$		7.0	20	ns
Turn-Off Time	$t_{d(off)}$			11	20	

Note: 2. Valid Provided That Terminals are Kept at Specified Ambient Temperature.

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

**Curve Characteristics**

Fig. 1 - Output Characteristics

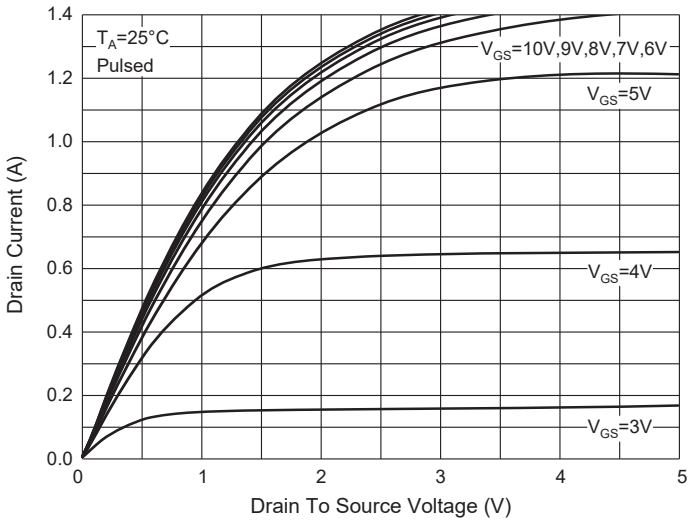


Fig. 2 - Transfer Characteristics

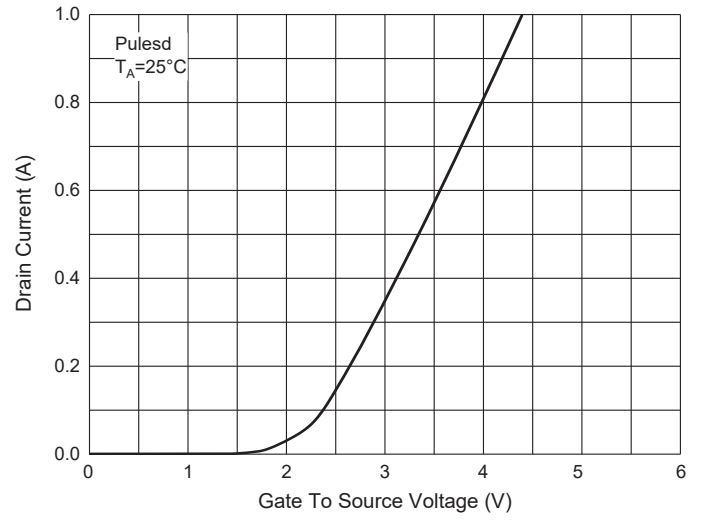


Fig. 3 -  $R_{DS(ON)} - I_D$

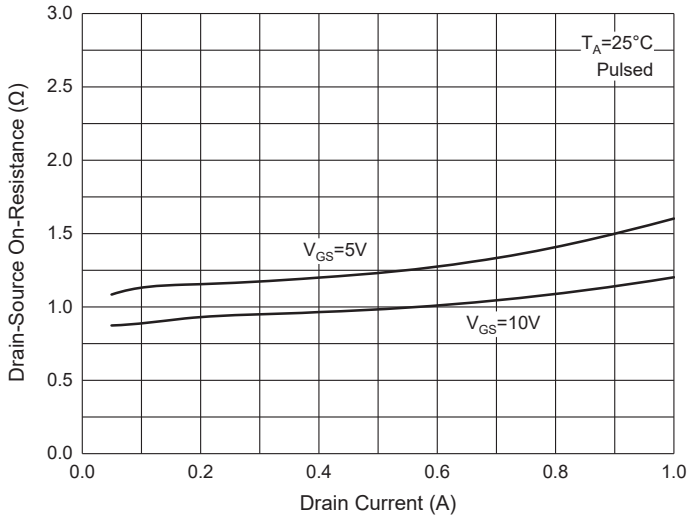


Fig. 3 -  $R_{DS(ON)} - V_{GS}$

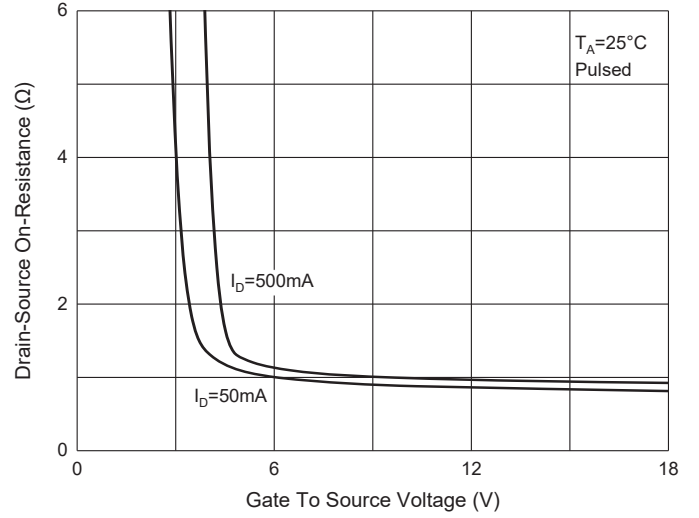
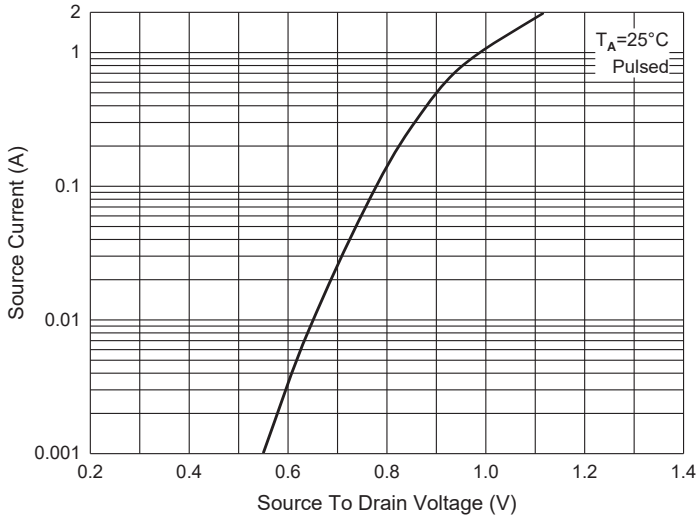


Fig. 5 -  $I_S - V_{SD}$



## Ordering Information

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

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