

**Features**

- Low ON-Resistance
- Fast Switching Speed
- 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)

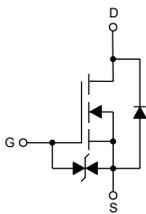
**Maximum Ratings**

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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	30	V
Gate-Source Voltage	$V_{GS}$	±20	V
Drain Current-Continuous	$I_D$	100	mA
Power Dissipation	$P_D$	150	mW

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**

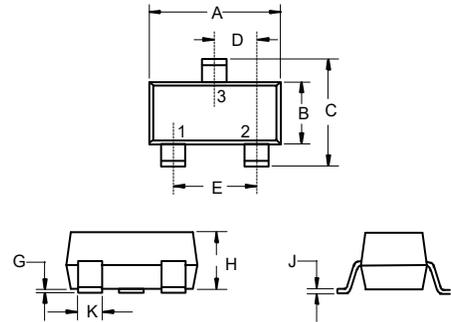


- 1. GATE
- 2. SOURCE
- 3. DRAIN

**Marking:KN**

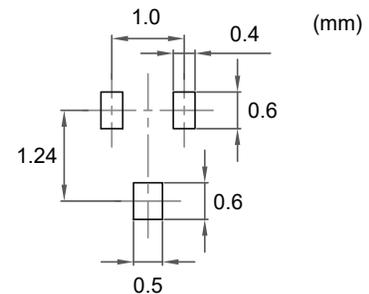
**N-Channel  
MOSFET**

**SOT-523**



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	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 @ 25°C (Unless Otherwise Specified)**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
<b>Static Characteristics</b>						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=10\mu A$	30			V
Gate-Source Leakage Current	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 20V$			$\pm 2$	$\mu A$
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=30V, V_{GS}=0V, T_j=50^\circ C$			100	nA
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS}=3V, I_D=100\mu A$	0.8		1.5	V
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=4V, I_D=10mA$			8	$\Omega$
		$V_{GS}=2.5V, I_D=1mA$			13	
Forward Transconductance	$g_{FS}$	$V_{DS}=3V, I_D=10mA$	20			mS
<b>Dynamic Characteristics<sup>(Note 2)</sup></b>						
Input Capacitance	$C_{iss}$	$V_{DS}=5V, V_{GS}=0V, f=1MHz$		13		pF
Output Capacitance	$C_{oss}$			9		
Reverse Transfer Capacitance	$C_{rss}$			4		
<b>Dynamic Characteristics Characteristics<sup>(Note 1)</sup></b>						
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=5V, V_{DD}=5V$ $I_D=10mA, R_g=10\Omega, R_L=500\Omega$		15		ns
Turn-On Rise Time	$t_r$			35		
Turn-Off Delay Time	$t_{d(off)}$			80		
Turn-Off Fall Time	$t_f$			80		

Note 2. These Parameters Have No Way to Verify.

## Curve Characteristics

Fig. 1 - Output Characteristics

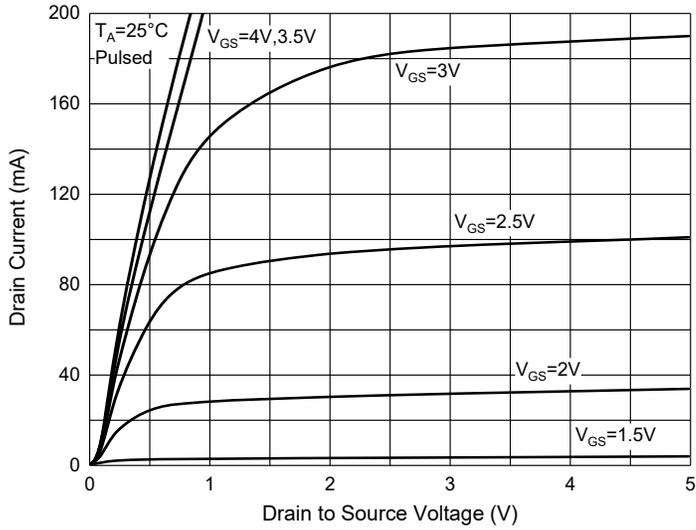


Fig. 2 - Transfer Characteristics

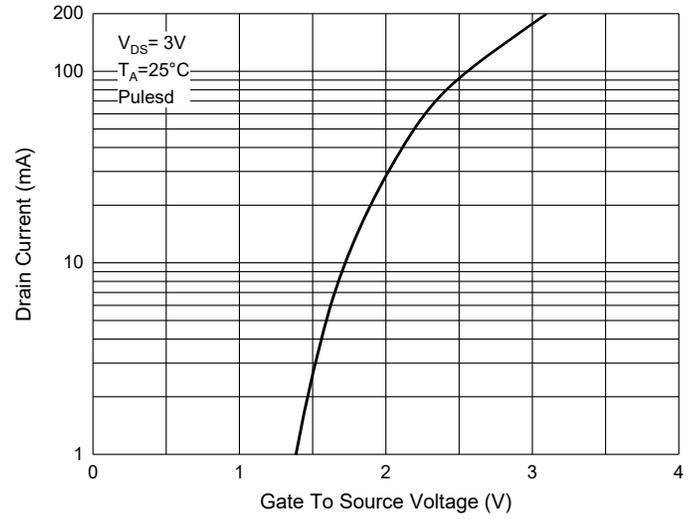


Fig. 3 -  $R_{DS(ON)} - I_D$

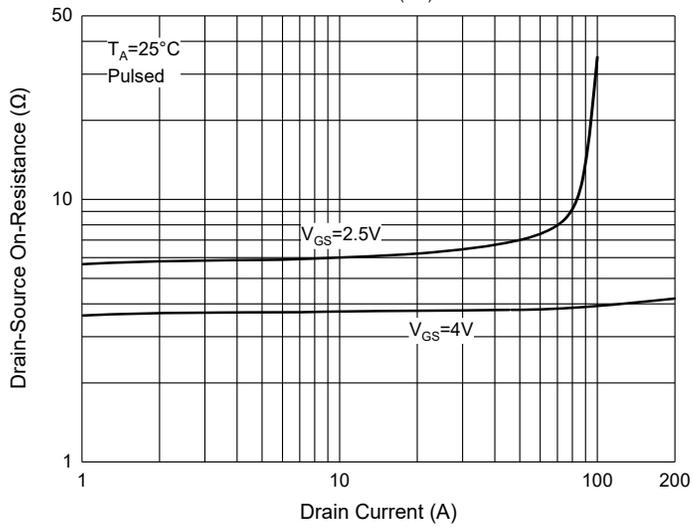


Fig. 4 -  $R_{DS(ON)} - V_{GS}$

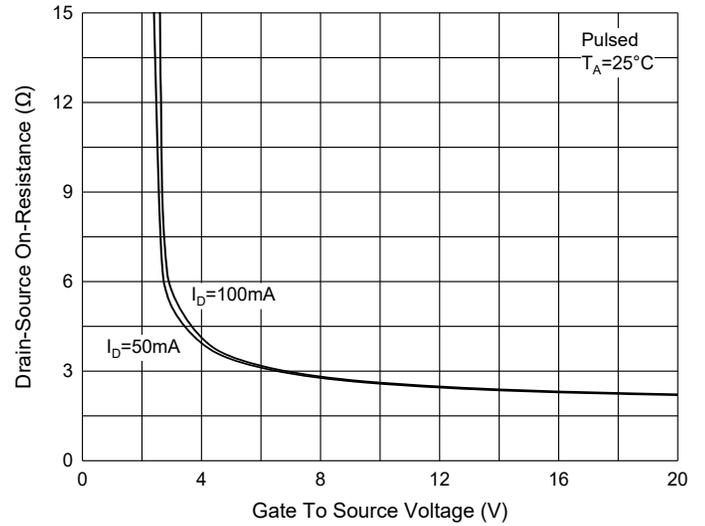
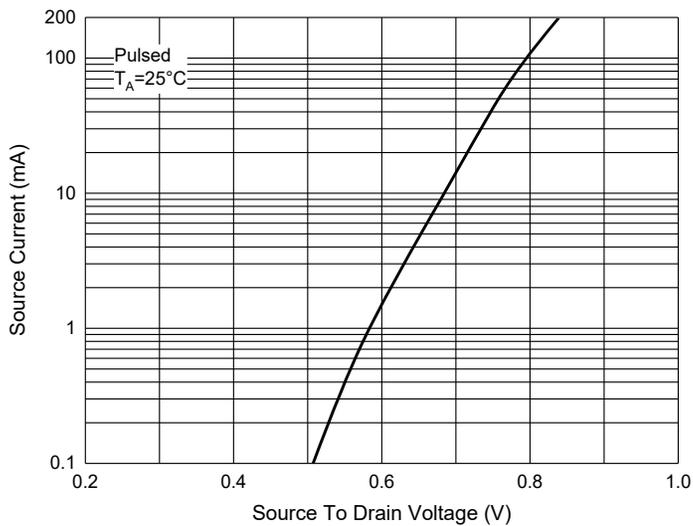


Fig. 5 -  $I_S - V_{SD}$



## Ordering Information

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

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