

## Features

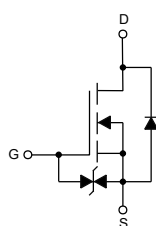
- Low On-resistance
- Fast Switching Speed
- Drive Circuits Can be Simple
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

## 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	$V_{DS}$	30	V
Gate-Source Voltage	$V_{GS}$	±20	V
Drain Current-Continuous	$I_D$	0.1	A
Power Dissipation	$P_D$	0.15	W

## Internal Structure

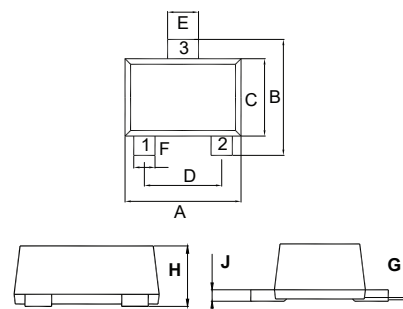


1. GATE
2. SOURCE
3. DRAIN

Marking: KN

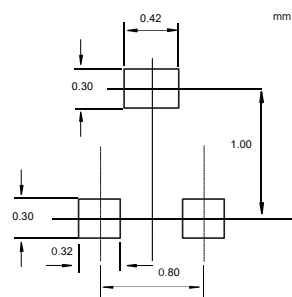
# N-Channel MOSFET

## SOT-723



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.043	0.051	1.10	1.30	
B	0.043	0.051	1.10	1.30	
C	0.028	0.035	0.70	0.90	
D	0.031		0.80		TYP.
E	0.009	0.017	0.22	0.42	
F	0.005	0.013	0.12	0.32	
G	0.000	0.002	0.00	0.05	
H	0.017	0.021	0.43	0.54	
J	0.003	0.006	0.08	0.15	

### 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	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=10\mu A$	30			V	
Gate-Source Leakage Current	$I_{GSS}$	$V_{DS}=0V, V_{GS}=\pm 20V$			$\pm 2$	$\mu A$	
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=30V, V_{GS}=0V$			1	$\mu A$	
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS}=3V, I_D=100\mu A$	0.5		1.5	V	
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=4.0V, I_D=10mA$		5	8	$\Omega$	
		$V_{GS}=2.5V, I_D=55mA$		7	13	$\Omega$	
Forward Transconductance	$g_{FS}$	$V_{DS}=3V, I_D=10mA$	20			mS	
<b>Dynamic Characteristics</b>							
Input Capacitance	$C_{iss}$	$V_{DS}=5V, V_{GS}=0V, f=1MHz$		13		pF	
Output Capacitance	$C_{oss}$				9		pF
Reverse Transfer Capacitance	$C_{rss}$				4		pF
<b>Switching Characteristics</b>							
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=5V, V_{DD}=5V, I_D=10mA,$ $R_L=500\Omega, R_G=10\Omega,$		15		ns	
Turn-Off Delay Time	$t_{d(off)}$				80		ns
Turn-on Rise Time	$t_r$				35		ns
Turn-off Fall Time	$t_f$				80		ns

**Curve Characteristics**

Fig. 1 - Output Characteristics

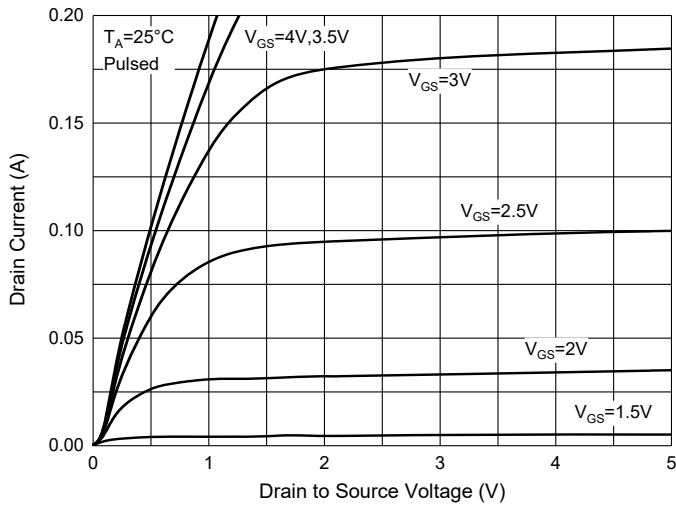


Fig. 2 - Transfer Characteristics

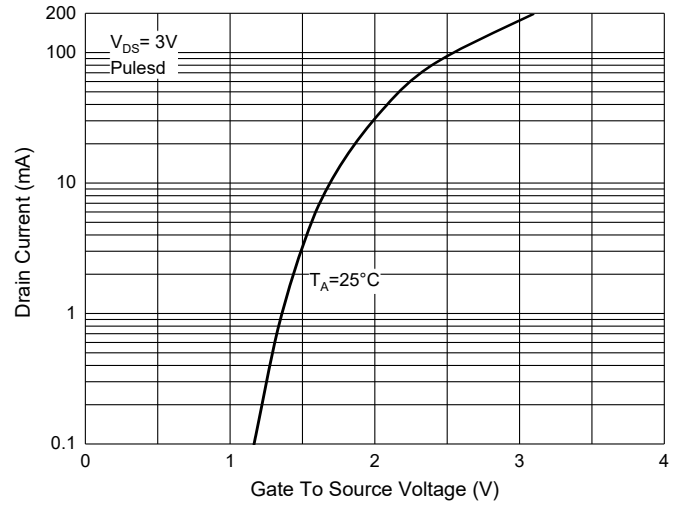


Fig. 3 -  $R_{DS(ON)} - I_D$

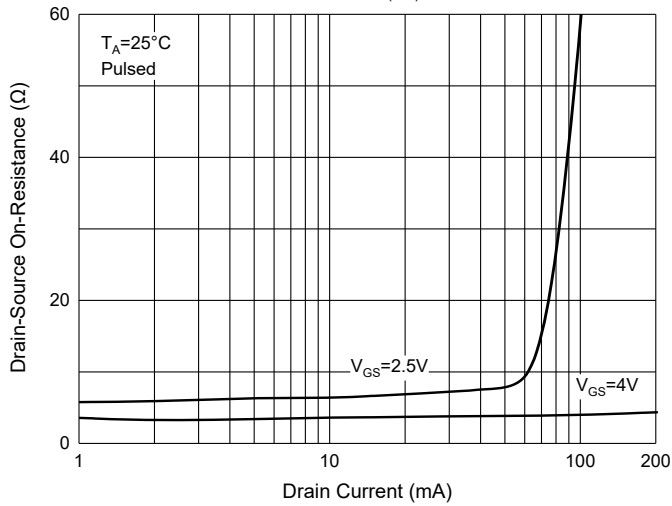


Fig. 4 -  $R_{DS(ON)} - V_{GS}$

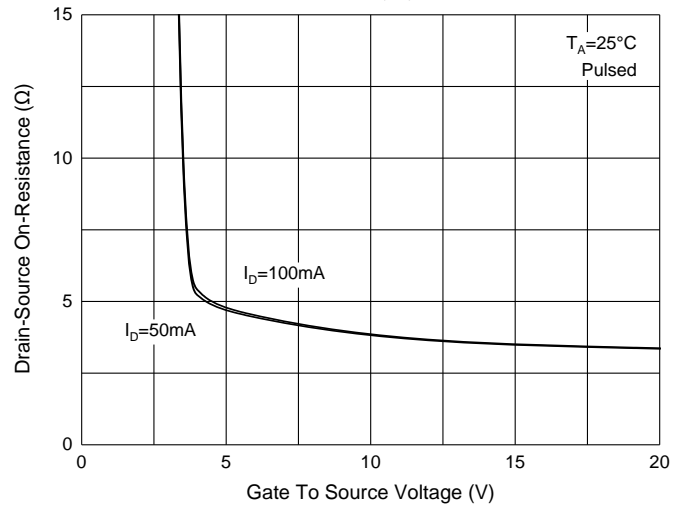
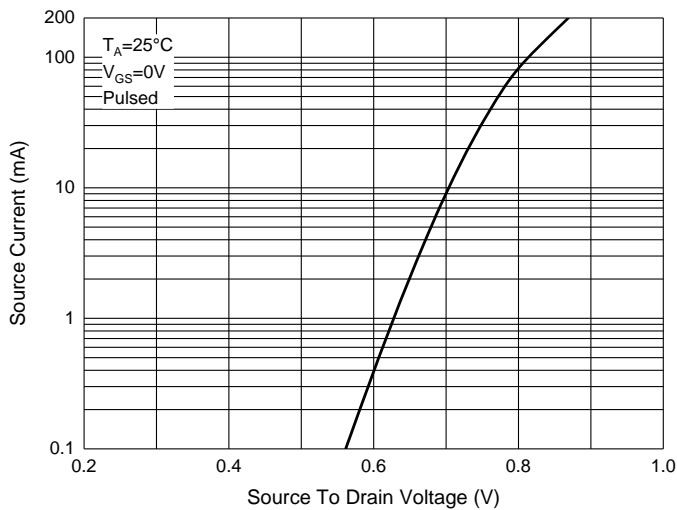


Fig. 5 -  $I_S - V_{SD}$



## Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:8Kpcs/Reel

Note : Adding "-HF" Suffix For Halogen Free, eg. Part Number-TP-HF

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