

## Features

- High Density Cell Design for Low  $R_{DS(ON)}$
- Voltage Controlled Small Signal Switch
- ESD Protected up to 2KV (HBM)
- 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)

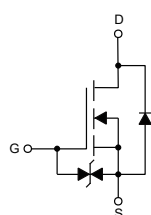
## Maximum Ratings

- 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:  $833^{\circ}\text{C/W}$  Junction to Ambient

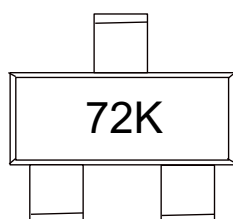
Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	60	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Drain Current-Continuous	$I_D$	0.34	A
Power Dissipation	$P_D$	0.15	W

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

## Internal Structure and Marking Code

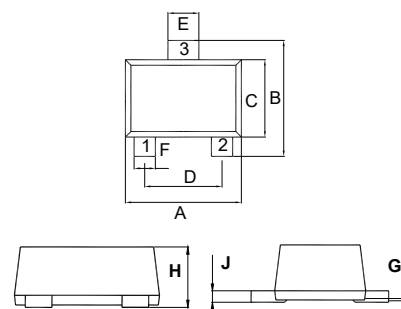


1. GATE
2. SOURCE
3. DRAIN



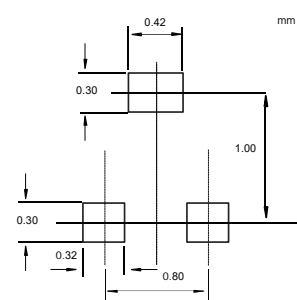
# N-Channel MOSFET

## 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	$V_{(BR)DSS}$	$V_{GS}=0V, I_D=250\mu A$	60			V
Gate-Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	1.0	1.4	2.5	V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=48V, V_{GS}=0V$			1.0	$\mu A$
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}=\pm 20V, V_{DS}=0V$			$\pm 10$	$\mu A$
		$V_{GS}=\pm 10V, V_{DS}=0V$			$\pm 200$	nA
		$V_{GS}=\pm 5V, V_{DS}=0V$			$\pm 100$	nA
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=500mA$		1.3	4.0	$\Omega$
		$V_{GS}=4.5V, I_D=200mA$		1.4	4.5	
Recovered Charge	$Q_r$	$V_{GS}=0V, I_S=300mA, V_R=25V$ $di/dt=-100A/\mu s$		30		nC
<b>Dynamic Characteristics</b>						
Input Capacitance	$C_{iss}$	$V_{DS}=10V, V_{GS}=0V, f=1MHz$			40	pF
Output Capacitance	$C_{oss}$				30	
Reverse Transfer Capacitance	$C_{rss}$				10	
<b>Switching Characteristics</b>						
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=25V, V_{GS}=10V, R_L=250\Omega,$ $R_{GS}=50\Omega, R_{GEN}=25\Omega$			10	ns
Turn-off Delay Time	$t_{d(off)}$				15	
Reverse Recovery Time	$t_{rr}$	$V_{GS}=0V, I_S=300mA, V_R=25V,$ $di/dt=-100A/\mu s$		30		
<b>Source-Drain Diode Characteristics</b>						
Diode Forward Voltage	$V_{SD}$	$V_{GS}=0V, I_S=200mA$		0.97	1.5	V

## Curve Characteristics

Fig. 1 - Output Characteristics

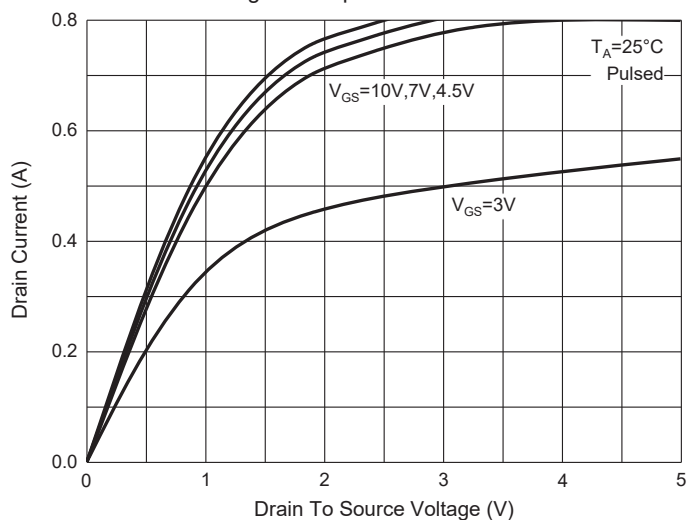


Fig. 2 - Transfer Characteristics

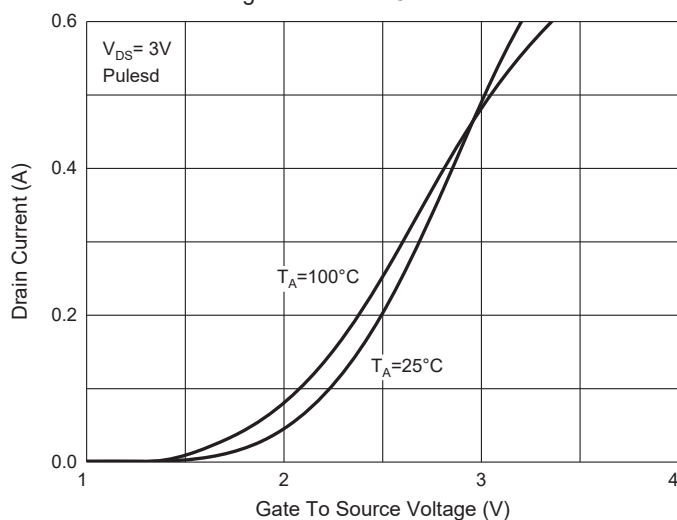


Fig. 3 -  $R_{DS(ON)} - I_D$

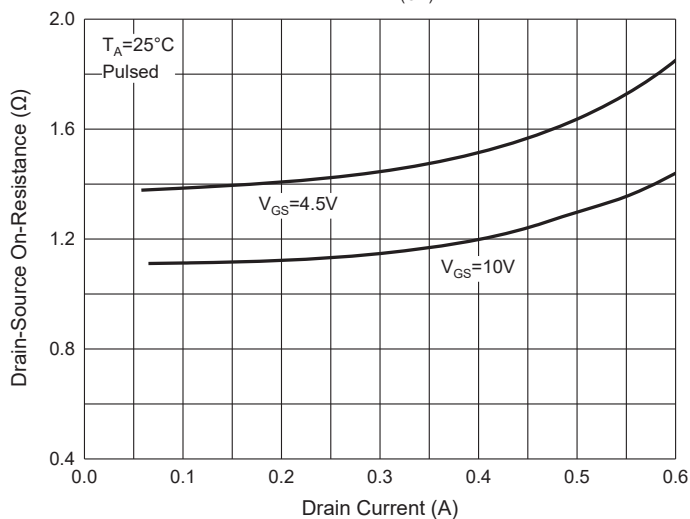


Fig. 4 -  $R_{DS(ON)} - V_{GS}$

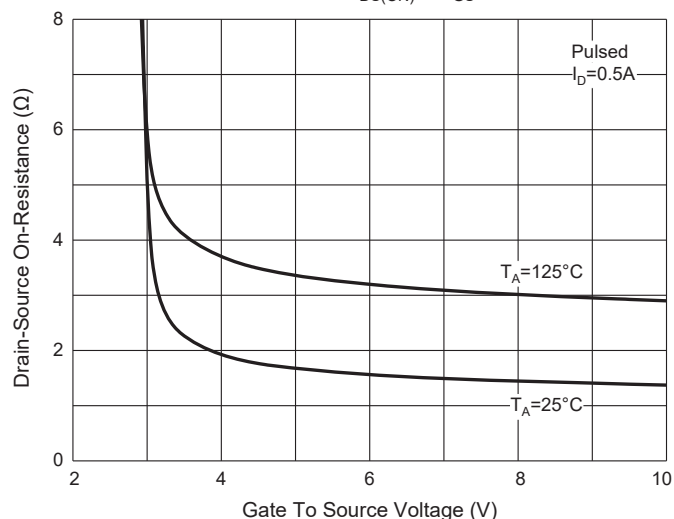


Fig. 5 -  $I_S - V_{SD}$

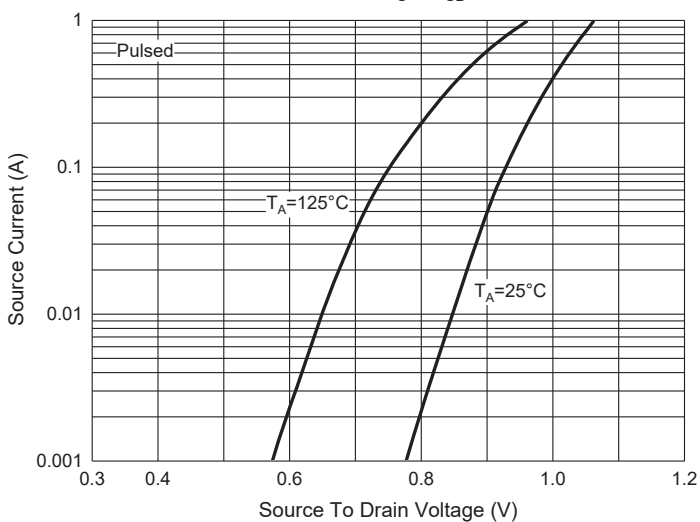
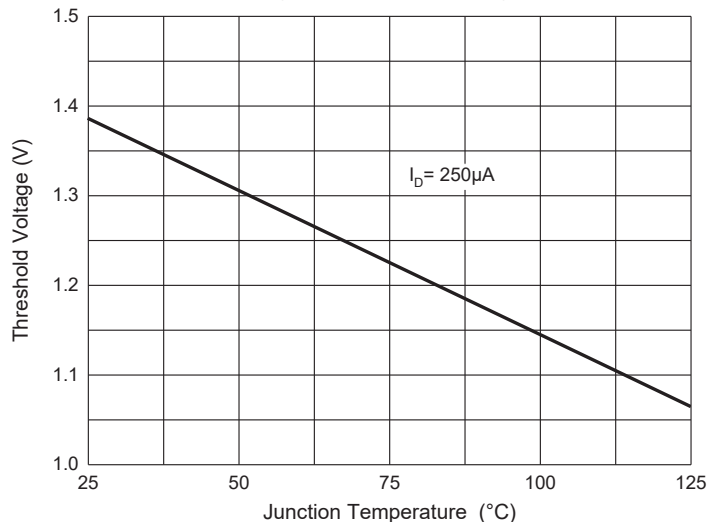


Fig. 6 - Threshold Voltage



## Ordering Information

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

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