

## Features

- Halogen Free. "Green" Device <sup>(1)</sup>
- AEC-Q101 Qualified
- 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
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

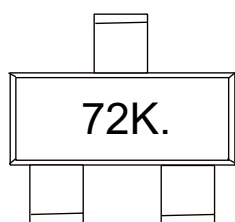
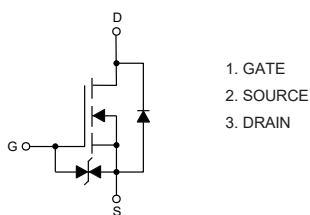
## Maximum Ratings

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature: -55°C to +150°C
- Thermal Resistance: 625°C/W Junction to Ambient

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	60	V
Gate-Source Voltage	$V_{GS}$	±20	V
Drain Current-Continuous	$I_D$	0.34	A
Power Dissipation	$P_D$	0.20	W

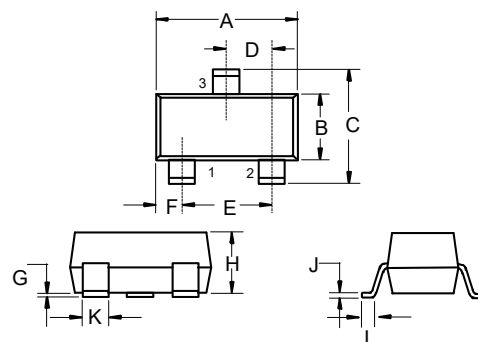
Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

## Internal Structure and Marking Code



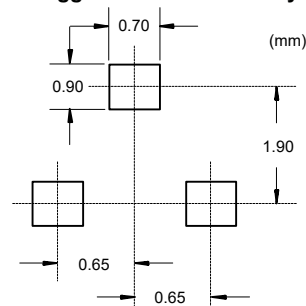
# N-Channel MOSFET

## SOT-323



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.071	0.087	1.80	2.20	
B	0.045	0.053	1.15	1.35	
C	0.083	0.096	2.10	2.45	
D	0.026		0.65		TYP.
E	0.047	0.055	1.20	1.40	
F	0.012	0.016	0.30	0.40	
G	0.000	0.004	0.00	0.10	
H	0.035	0.044	0.90	1.10	
J	0.002	0.010	0.05	0.25	
K	0.006	0.016	0.15	0.40	
L	0.010	0.018	0.26	0.46	

### 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 <sup>(2)</sup>	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=1mA$	1.0		2.0	V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=48V, V_{GS}=0V$			1.0	$\mu A$
Gate-Body Leakage Current	$I_{GSS}$	$V_{GS}=\pm 20V, V_{DS}=0V$			$\pm 10$	$\mu A$
Drain-Source On-Resistance <sup>(2)</sup>	$R_{DS(on)}$	$V_{GS}=10V, I_D=300mA$			2.5	$\Omega$
		$V_{GS}=4.5V, I_D=200mA$			3.0	
Diode Forward Voltage	$V_{SD}$	$V_{GS}=0V, I_S=300mA$			1.5	V
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 <sup>(3)</sup>	$C_{iss}$	$V_{DS}=10V, V_{GS}=0V, f=1MHz$			40	$\mu F$
Output Capacitance <sup>(3)</sup>	$C_{oss}$				30	
Reverse Transfer Capacitance <sup>(3)</sup>	$C_{rss}$				10	
<b>Switching Characteristics</b>						
Turn-On Delay Time <sup>(3)</sup>	$t_{d(on)}$	$V_{DD}=50V, V_{GS}=10V, R_L=250\Omega,$ $R_{GS}=50\Omega, R_{GEN}=25\Omega$			10	ns
Turn-Off Delay Time <sup>(3)</sup>	$t_{d(off)}$				15	
Reverse Recovery Time	$t_{rr}$	$V_{GS}=0V, I_S=300mA, V_R=25V,$ $di/dt=-100A/\mu s$		30		
<b>Gate-Source Zener Diode</b>						
Gate-Source Breakdown Voltage	$BV_{GSO}$	$I_{GS}=\pm 1mA$ (Open Drain)	$\pm 21.5$		$\pm 30$	V

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

3. These Parameters Have No Way to Verify.

**Curve Characteristics**

Fig. 1 - Output Characteristics

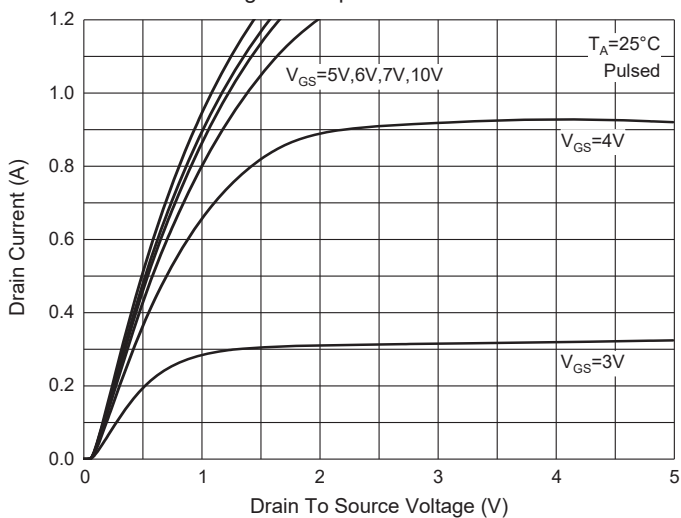


Fig. 2 - Transfer Characteristics

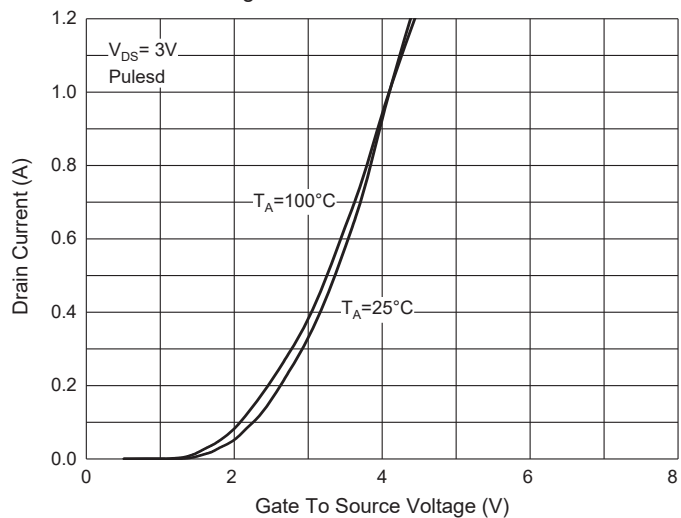


Fig. 3 -  $R_{DS(ON)} - I_D$

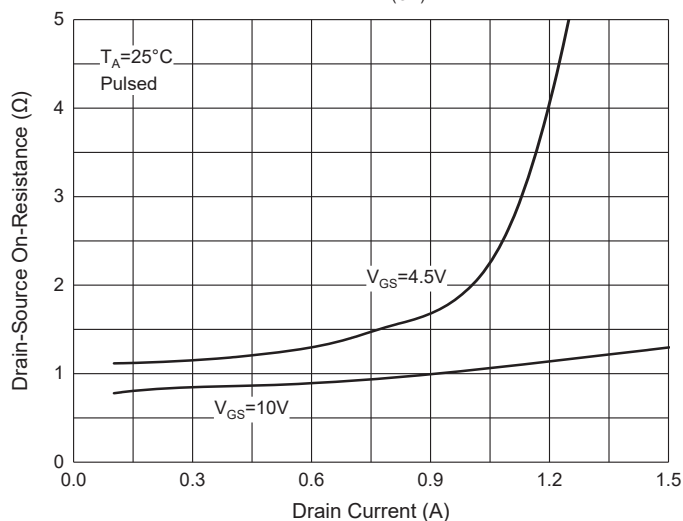


Fig. 4 -  $R_{DS(ON)} - V_{GS}$

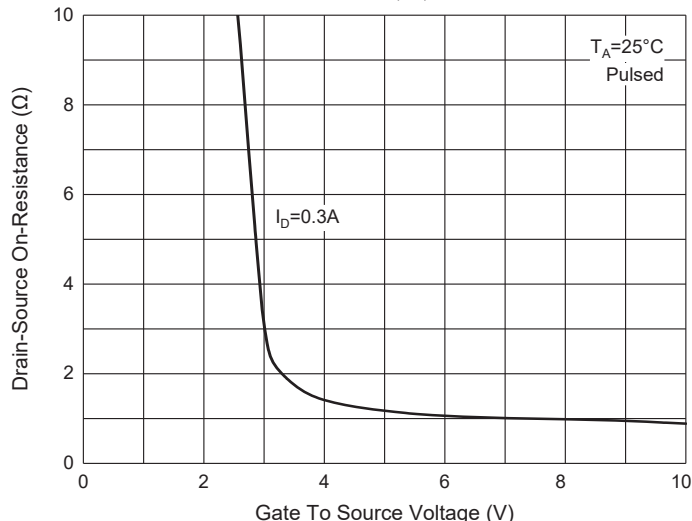


Fig. 5 -  $I_S - V_{SD}$

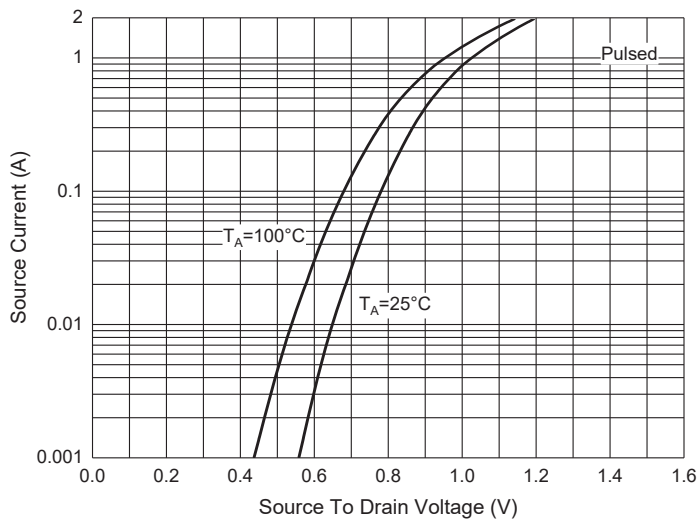
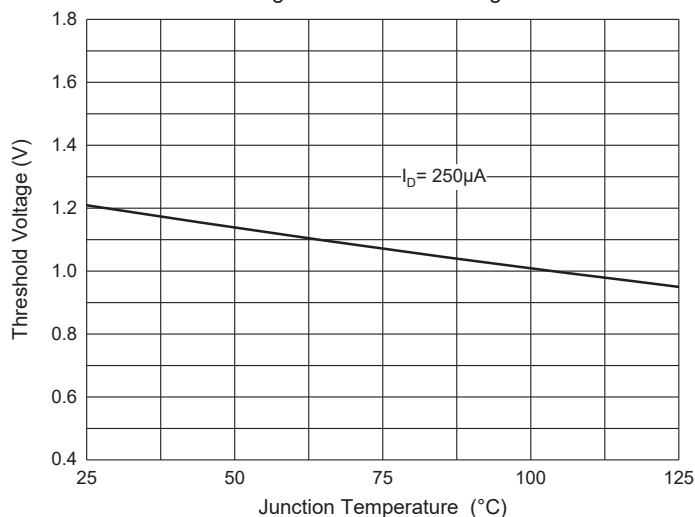


Fig. 6 - Threshold Voltage



## Ordering Information

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

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