

## Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	$I_D$
60V	1.1 $\Omega$ @10V	300mA
	1.4 $\Omega$ @4.5V	

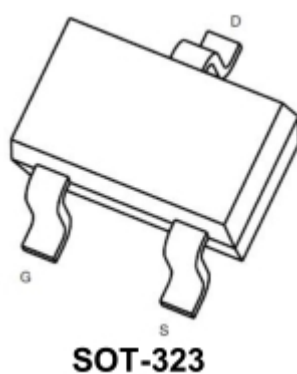
## Feature

- Super high density cell design for extremely low  $R_{DS(ON)}$
- Exceptional on-resistance and maximum DC current capability
- Capable doing Cu wire bonding
- ESD protected

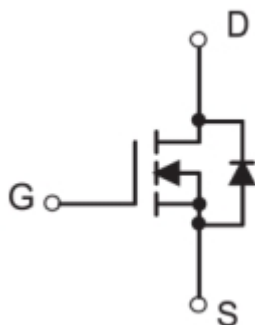
## Application

- Power Management in Note book
- Portable Equipment
- Battery Powered System

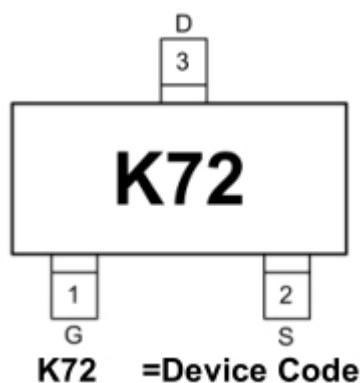
## Package



## Circuit diagram



## Marking



## Absolute maximum ratings

( $T_a=25^{\circ}\text{C}$  unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	$V_{DS}$	60	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Continuous Drain Current	$I_D$	300	mA
Pulsed Drain Current <sup>1</sup>	$I_{DM}$	800	mA
Power Dissipation	$P_D$	0.2	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	625	$^{\circ}\text{C}/\text{W}$
Junction Temperature	$T_J$	150	$^{\circ}\text{C}$
Storage Temperature	$T_{STG}$	-55~ +150	$^{\circ}\text{C}$

## Electrical characteristics

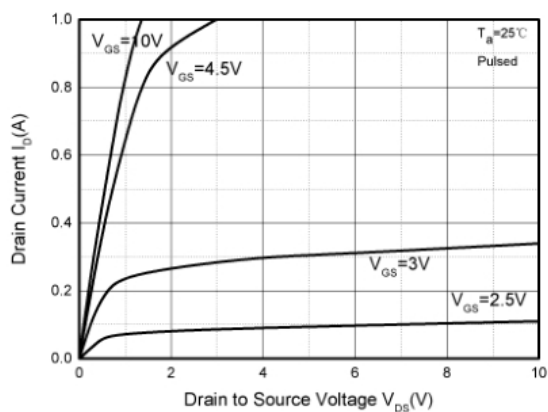
( $T_A=25^{\circ}\text{C}$ , unless otherwise noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
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	1.5	2.5	V
Gate-body leakage current	$I_{GSS}$	$V_{DS} = 0V, V_{GS} = \pm 20V$			$\pm 5$	$\mu A$
Zero gate voltage drain current	$I_{DSS}$	$V_{DS} = 60V, V_{GS} = 0V$			1	$\mu A$
Drain-source on-resistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 200mA$		1.1	3	$\Omega$
		$V_{GS} = 4.5V, I_D = 200mA$		1.4	4	
Dynamic characteristics						
Total Gate Charge	$Q_g$	$V_{DS} = 10V, V_{GS} = 4.5V, I_D = 250mA$		0.3		nC
Gate-Source Charge	$Q_{gs}$			0.2		
Gate-Drain Charge	$Q_{gd}$			0.08		
Input Capacitance	$C_{iss}$	$V_{DS} = 25V, V_{GS} = 0V, f = 1MHz$		30	50	pF
Output Capacitance	$C_{oss}$			4.2	25	
Reverse Transfer Capacitance	$C_{rss}$			2.9	5	
Switching Characteristics						
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 30V, I_D = 200mA, V_{GEN} = 10V, R_G = 25\Omega$		3.9		ns
Turn-On Rise Time	$t_R$			3.4		
Turn-Off Delay Time	$t_{d(off)}$			15.7		
Turn-Off Fall Time	$t_F$			9.9		
Source-Drain Diode Characteristics						
Diode Forward voltage	$V_{SD}$	$V_{GS} = 0V, I_S = 200mA$		0.82	1.3	V

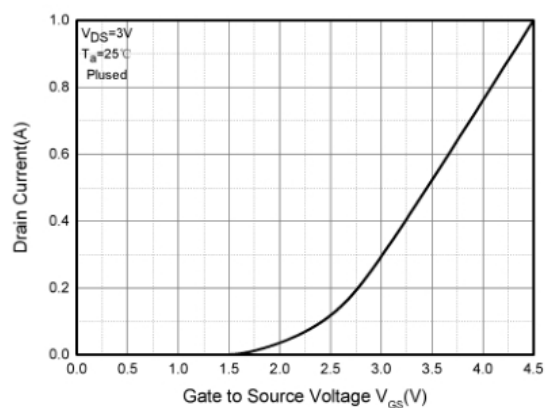
### Note:

1. Pulse width  $\leq 300s$ , duty cycle  $\leq 2\%$ .

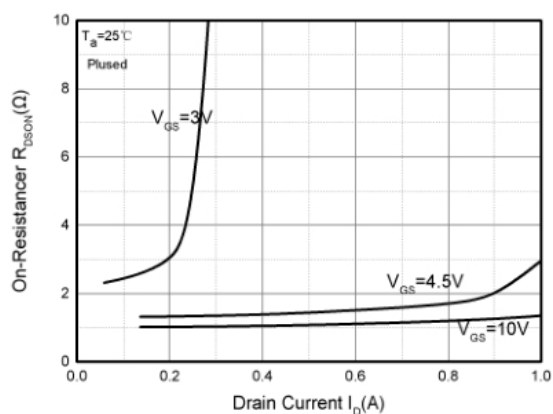
## Typical Characteristics



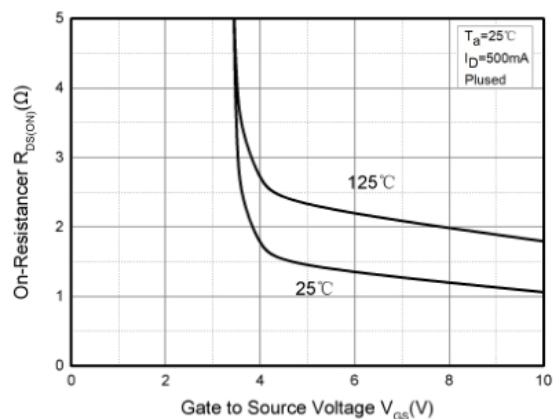
Output Characteristics



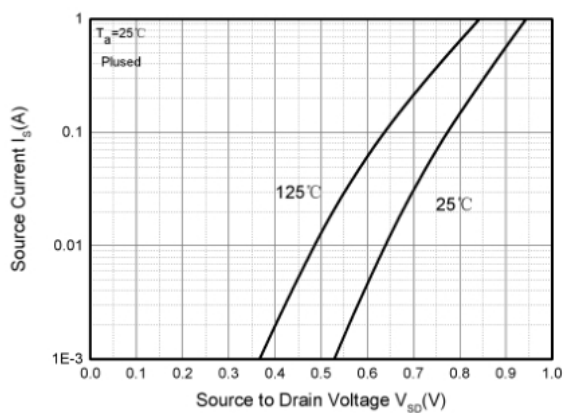
Transfer Characteristics



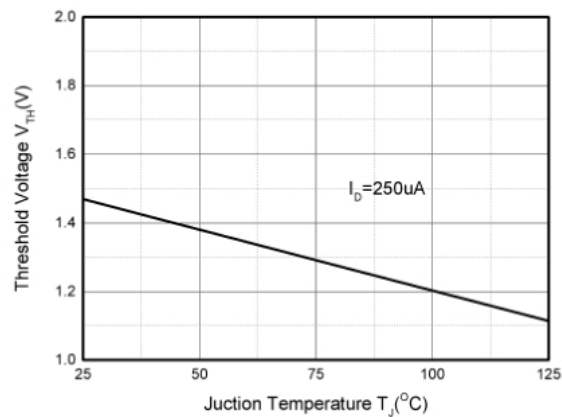
On-Resistance vs. Drain current



On-Resistance vs. Gate to Source Voltage

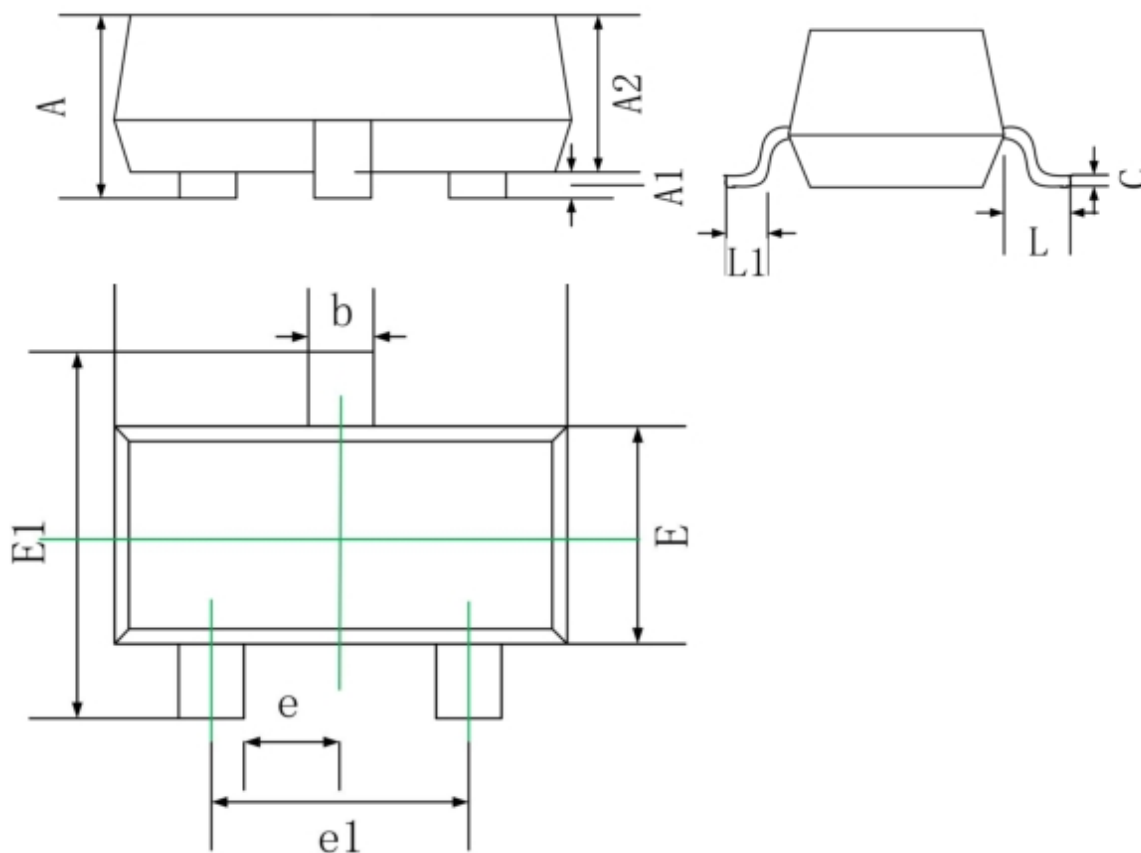


Source Current vs. Source to Drain Voltage



Threshold voltage vs. Junction temperature

## SOT-323 Package Information



Symbol	Dimensions In Millimeters	
	Min.	Max.
A	0.90	1.15
A1	0.00	0.10
A2	0.90	1.00
b	0.30	0.50
c	0.10	0.15
D	2.00	2.20
E	1.15	1.35
E1	2.15	2.40
e	0.65 Typ.	
e1	1.20	1.40
L	0.525 Ref.	
L1	0.26	0.46