

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
60V	1.8Ω@10V	0.34A
	2.1Ω@4.5V	

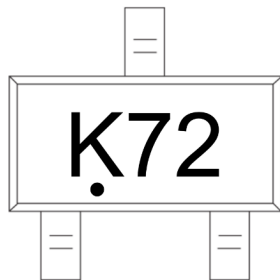
Feature

- Surface Mount Package
- High Density Cell Design for Extremely Low RDS(ON)
- Voltage Controlled Small Signal Switch
- Rugged and Reliable
- ESD Protcet

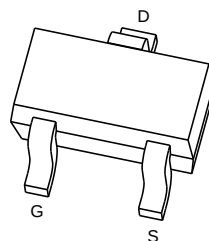
Application

- Small Servo Motor Controls
- Power MOSFET Gate Drivers
- Switching Application

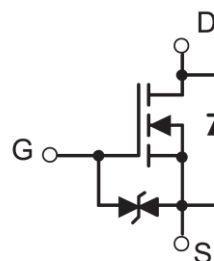
MARKING:



SOT-523



Schematic diagram



ABSOLUTE MAXIMUM RATINGS (Ta = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current ^{1,2}	I_D	0.34	A
Pulsed Drain Current (tp=10μs)	I_{DM}	1.36	A
Power Dissipation	P_D	0.15	W
Thermal Resistance from Junction to Ambient ^{1,2}	$R_{θJA}$	833	°C/W
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-55~ +150	°C

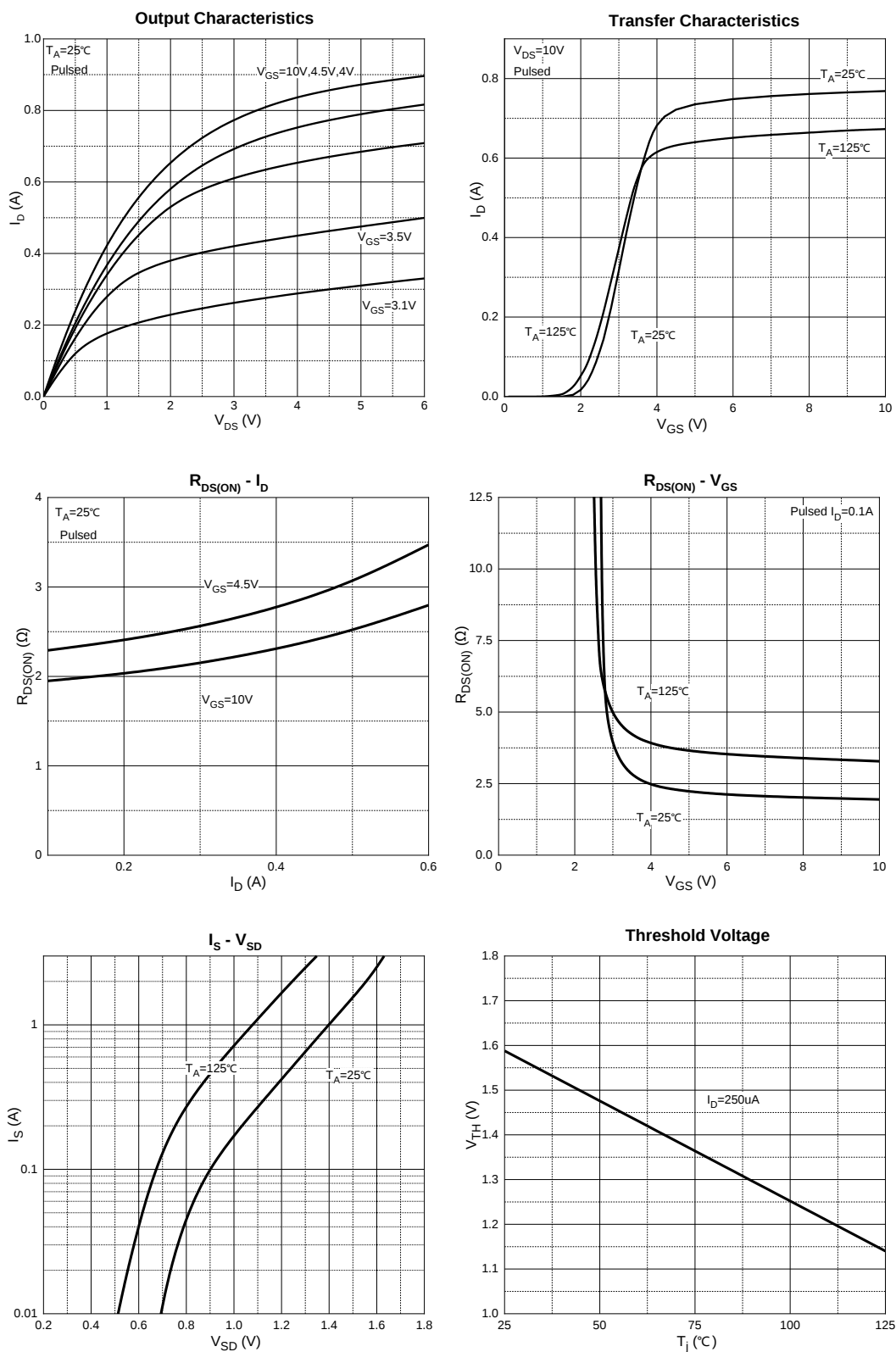
MOSFET ELECTRICAL CHARACTERISTICS($T_a = 25^\circ\text{C}$ unless otherwise noted)

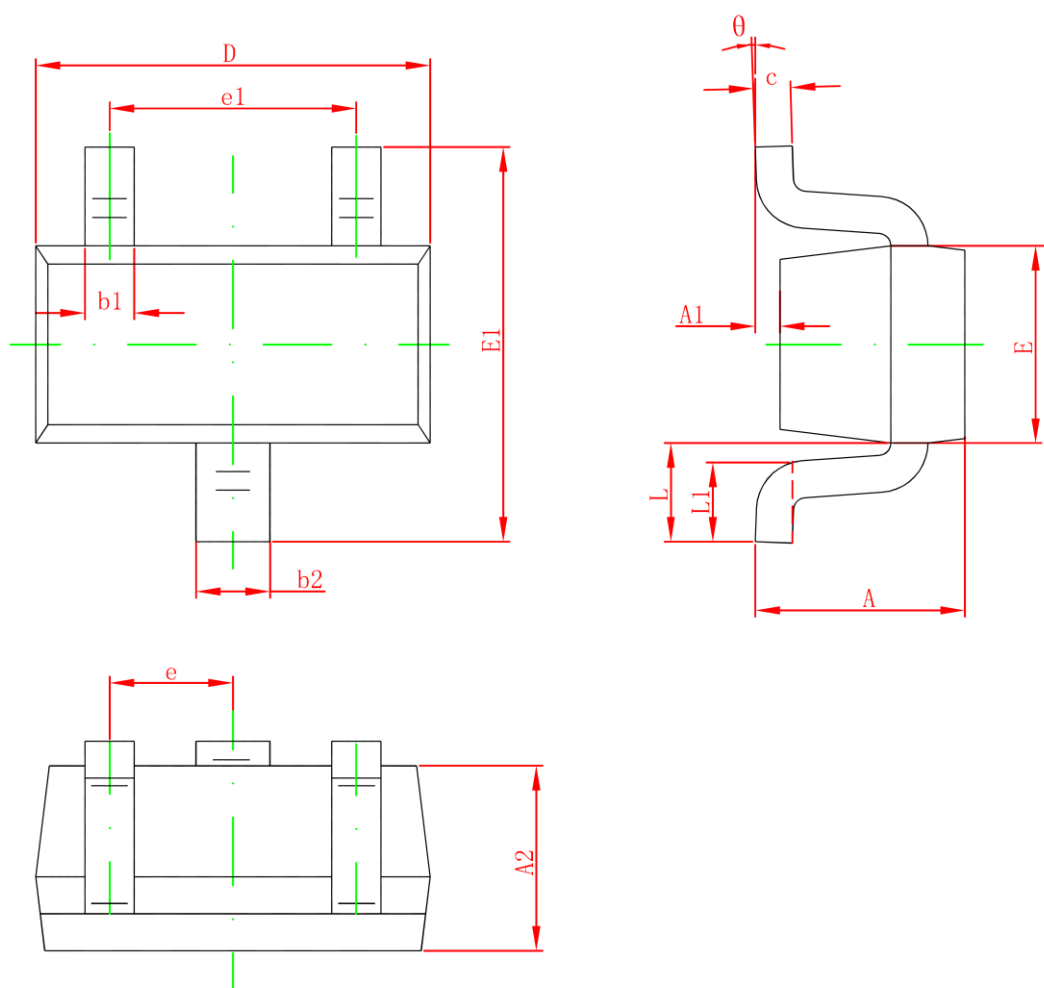
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	60			V
Zero gate voltage drain current	I _{DSS}	V _{DS} = 48V, V _{GS} = 0V			1	μA
Gate-body leakage current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±5	μA
On Characteristics ³						
Gate threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	1.0	1.5	2.5	V
Drain-source on-resistance	R _{DS(on)}	V _{GS} = 10V, I _D = 0.3A		1.8	3.5	Ω
		V _{GS} = 4.5V, I _D = 0.2A		2.1	4.0	
Forward tranconductance	g _{FS}	V _{DS} = 10V, I _D = 0.2A	80			mS
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} = 30V, V _{GS} = 0V, f = 1MHz		17.6		pF
Output Capacitance	C _{oss}			4.4		
Reverse Transfer Capacitance	C _{rss}			1.2		
Switchig Characteristics						
Turn-on Delay Time	t _{d(on)}	V _{DD} = 30V, V _{GS} = 10V, R _L = 100Ω, R _G = 3Ω		3.8		ns
Turn-on Rise Time	t _r			2.9		
Turn-off Delay Ttime	t _{d(off)}			14		
Turn-off Fall Time	t _f			8		
Total Gate Charge	Q _g	V _{DS} =30V, I _D =0.3A, V _{GS} =10V		1.6		nC
Gate-Source Charge	Q _{gs}			0.2		
Gate-Drain Charge	Q _{gd}			0.8		
Diode Characteristics						
Diode forward voltage ³	V _{SD}	I _S =0.3A, V _{GS} = 0V			1.2	V

Notes :

1. $R_{\theta JA}$ is measured with the device mounted on 1 in² FR4 board with 1oz. single side copper, in a still air environment with $T_A = 25^\circ\text{C}$.
2. $R_{\theta JA}$ is measured in the steady state
3. Pulse test : Pulse width $\leq 380\mu s$, duty cycle $\leq 2\%$.

Typical Characteristics



SOT-523 Package Information


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.900	0.028	0.035
A1	0.000	0.100	0.000	0.004
A2	0.700	0.800	0.028	0.031
b1	0.150	0.250	0.006	0.010
b2	0.250	0.350	0.010	0.014
c	0.100	0.200	0.004	0.008
D	1.500	1.700	0.059	0.067
E	0.700	0.900	0.028	0.035
E1	1.450	1.750	0.057	0.069
e	0.900	1.100	0.035	0.043
e1	0.500TYP		0.020TYP	
L	0.400REF		0.016REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°