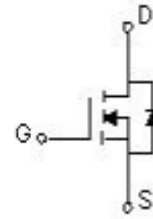


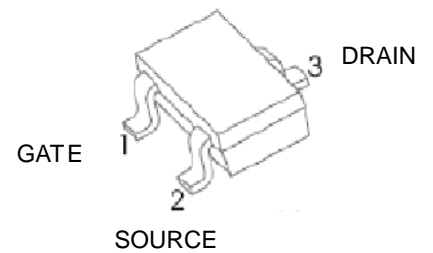


2N7002T Plastic-Encapsulate MOSFETS

MOSFET (N-Channel)



$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
60 V	5Ω@10V	115mA
	7Ω@5V	



SOT-523

FEATURE

- High density cell design for low $R_{DS(ON)}$
- Voltage controlled small signal switch
- Rugged and reliable
- High saturation current capability

APPLICATION

- Load Switch for Portable Devices
- DC/DC Converter

Marking : K72

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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	20	V
Continuous Drain Current	I_D	0.115	A
Power Dissipation	P_D	0.200	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	625	$^{\circ}C/W$
Junction Temperature	T_J	150	$^{\circ}C$
Storage Temperature	T_{stg}	-50 ~+150	



MOSFET ELECTRICAL CHARACTERISTICS

T_a=25 °C unless otherwise specified

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0 V, I _D =250 μA	60			V
Gate-Threshold Voltage	V _{(GS)th}	V _{DS} =V _{GS} , I _D =250 μA	1	1.6	2.5	
Gate-body Leakage	I _{GSS}	V _{DS} =0 V, V _{GS} =±20 V			±80	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =60 V, V _{GS} =0 V			80	nA
On-state Drain Current	I _{D(on)}	V _{GS} =10 V, V _{DS} =7 V	500			mA
Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10 V, I _D =500mA			5	Ω
		V _{GS} =5 V, I _D =50mA			7	
Forward Trans conductance	g _{fs}	V _{DS} =10 V, I _D =200mA	80			ms
Drain-source on-voltage	V _{DS(on)}	V _{GS} =10V, I _D =500mA			3.75	V
		V _{GS} =5V, I _D =50mA			0.375	V
Diode Forward Voltage	V _{SD}	I _S =115mA, V _{GS} =0 V	0.55		1.2	V
Input Capacitance *	C _{iss}	V _{DS} =25V, V _{GS} =0V, f=1MHz			50	pF
Output Capacitance *	C _{oss}				25	
Reverse Transfer Capacitance*	C _{rss}				5	

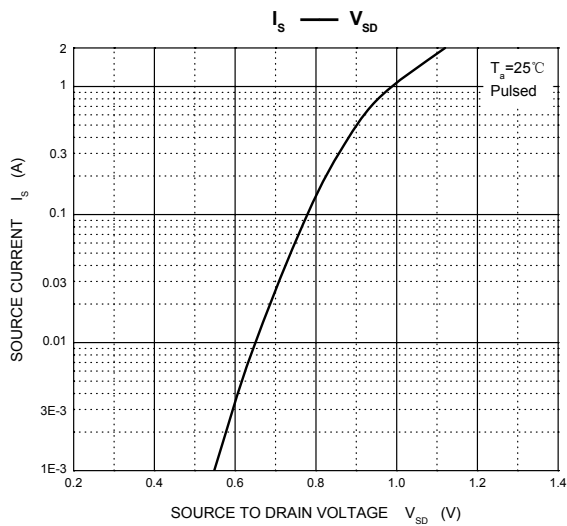
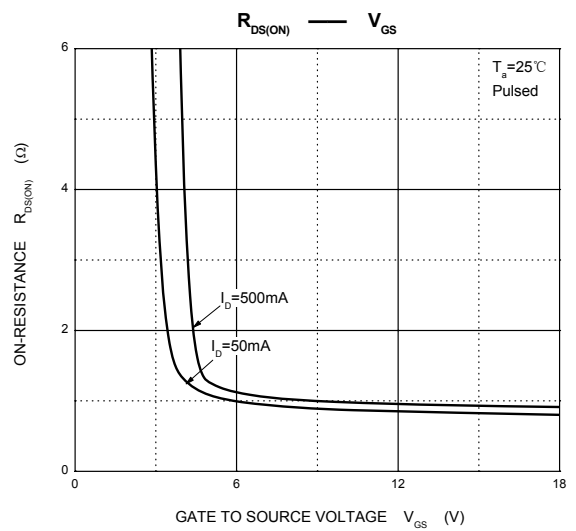
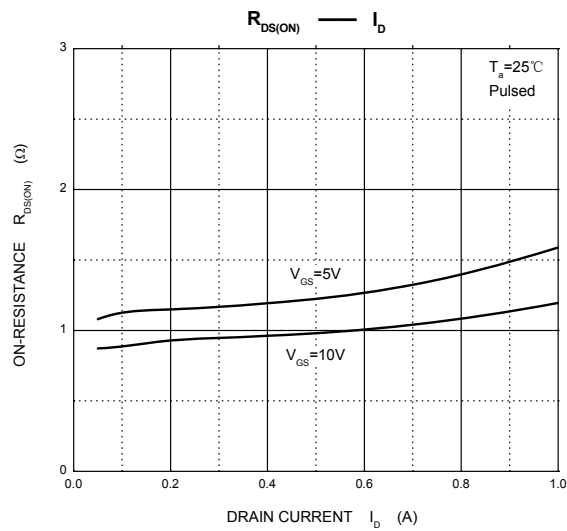
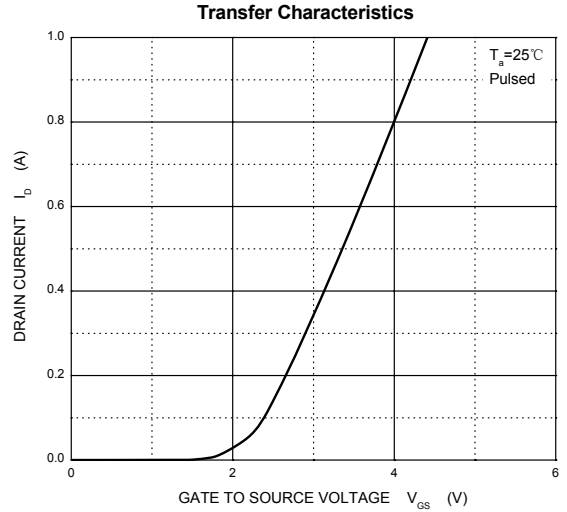
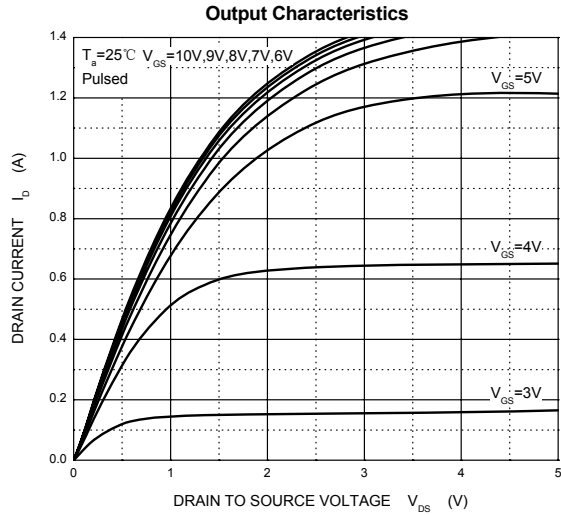
SWITCHING TIME

Turn-on Time*	t _{d(on)}	V _{DD} =25 V, R _L =50Ω, I _D =500mA, V _{GEN} =10 V			20	ns
Turn-off Time*	t _{d(off)}		R _G =25Ω			

*These parameters have no way to verify.

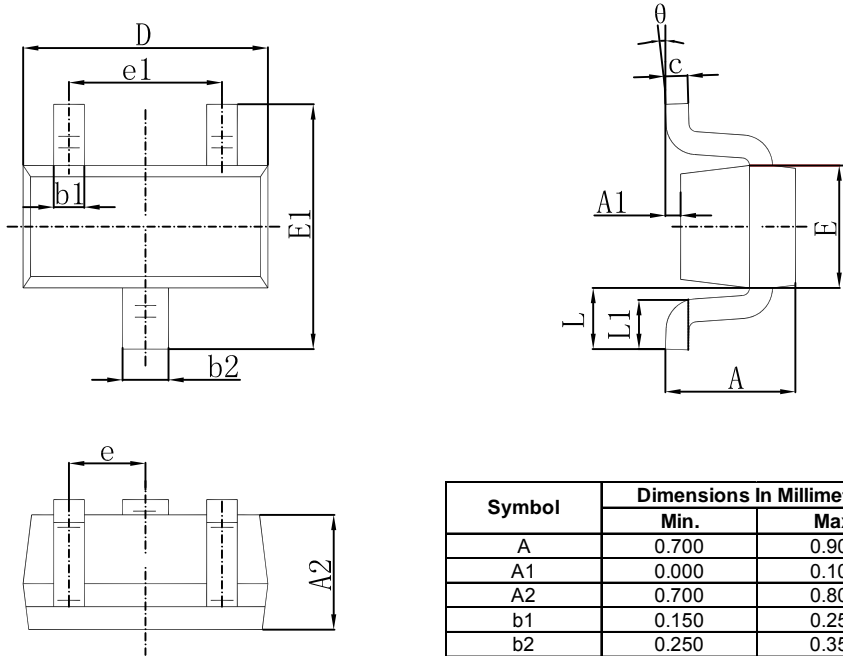


Typical Characteristics



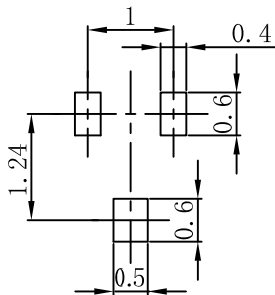


SOT-523 Package Outline Dimensions



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	0.500 TYP.		0.020 TYP.	
e1	0.900	1.100	0.035	0.043
L	0.400 REF.		0.016 REF.	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

SOT-523 Suggested Pad Layout



- Note:
1. Controlling dimension: in millimeters.
 2. General tolerance: $\pm 0.05\text{mm}$.
 3. The pad layout is for reference purposes only.