

N-Channel MOSFET

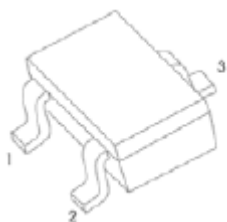
● Features

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

● General Description

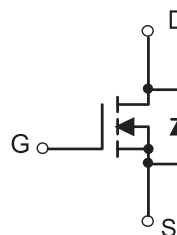
- High density cell design for low $R_{DS(ON)}$
- Voltage controlled small signal switch
- Rugged and reliable
- High saturation current capability
- Load Switch for Portable Devices
- DC/DC Converter

● Pin Configurations



SOT-523

1. GATE
2. SOURCE
3. DRAIN



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

Parameter	Symbol	Value	Unit
Drain-Source voltage	V_{DSS}	60	V
Typical Gate-Source Voltage	V_{GS}	±20	
Drain Current-Continuous	I_D	115	mA
Power Dissipation	P_D	150	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	833	$^{\circ}\text{C}/\text{W}$
Storage Temperature	T_j	150	$^{\circ}\text{C}$
Junction Temperature	T_{stg}	-55 ~ +150	

Electrical Characteristics

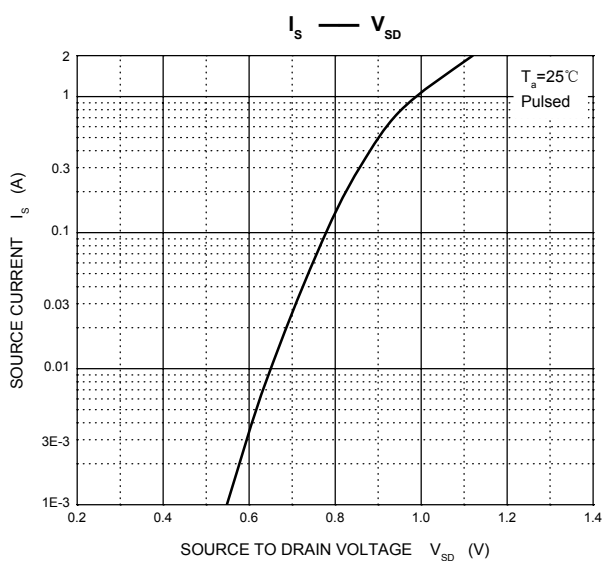
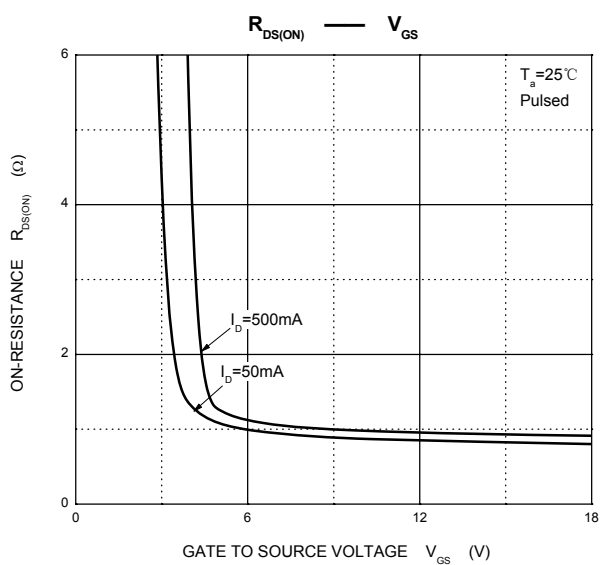
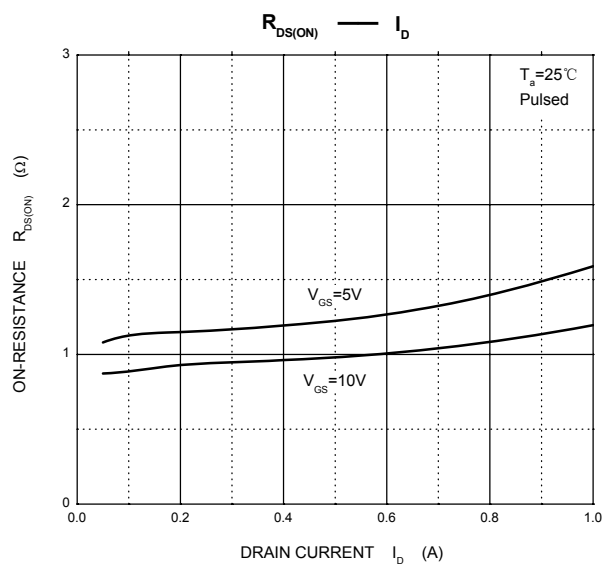
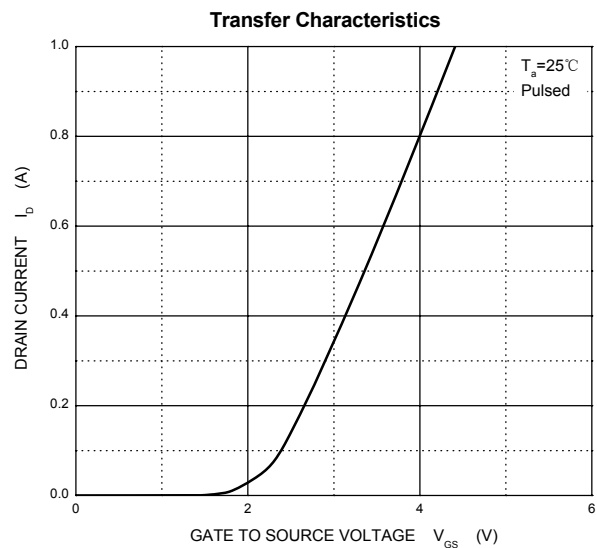
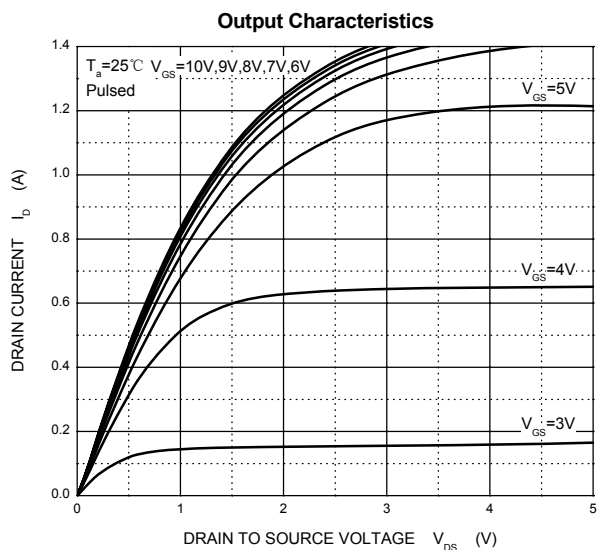
$T_a=25\text{ }^{\circ}\text{C}$ unless otherwise specified

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0\text{ V}$, $I_D=250\text{ }\mu\text{A}$	60			V
Gate-Threshold Voltage	$V_{th(GS)}$	$V_{DS}=V_{GS}$, $I_D=250\text{ }\mu\text{A}$	1		2.5	
Gate-body Leakage	I_{GSS}	$V_{DS}=0\text{ V}$, $V_{GS}=\pm 20\text{ V}$			± 80	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60\text{ V}$, $V_{GS}=0\text{ V}$			80	nA
On-state Drain Current	$I_{D(ON)}$	$V_{GS}=10\text{ V}$, $V_{DS}=7\text{ V}$	500			mA
Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10\text{ V}$, $I_D=500\text{ mA}$			5	Ω
		$V_{GS}=5\text{ V}$, $I_D=50\text{ mA}$			7	
Forward Trans conductance	g_{fs}	$V_{DS}=10\text{ V}$, $I_D=200\text{ mA}$	80			ms
Drain-source on-voltage	$V_{DS(on)}$	$V_{GS}=10\text{ V}$, $I_D=500\text{ mA}$			3.75	V
		$V_{GS}=5\text{ V}$, $I_D=50\text{ mA}$			0.375	V
Diode Forward Voltage	V_{SD}	$I_S=115\text{ mA}$, $V_{GS}=0\text{ V}$	0.55		1.2	V
Input Capacitance	C_{iss}	$V_{DS}=25\text{ V}$, $V_{GS}=0\text{ V}$, $f=1\text{ MHz}$			50	pF
Output Capacitance	C_{oss}				25	
Reverse Transfer Capacitance	C_{rss}				5	

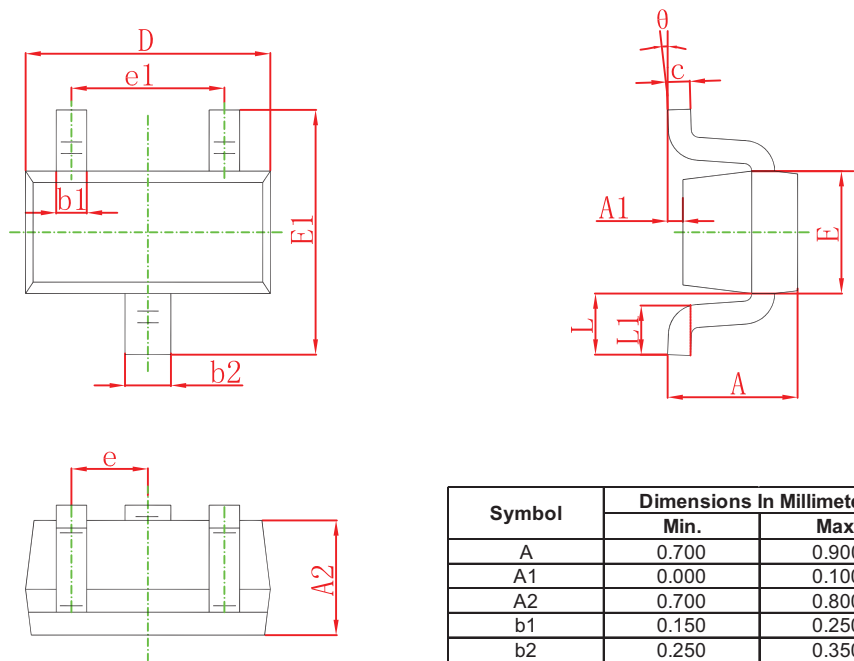
SWITCHING TIME

Turn-on Time	$t_{d(on)}$	$V_{DD}=25\text{ V}$, $R_L=50\Omega$			20	ns
Turn-off Time	$t_{d(off)}$	$I_D=500\text{ mA}$, $V_{GEN}=10\text{ V}$ $R_G=25\text{ }\Omega$			40	

Typical Electrical and Thermal Characteristics



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	0.500 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°