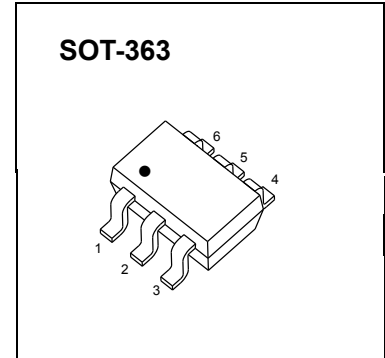


SOT-363 Plastic-Encapsulate MOSFETs

2N7002DW Dual N-channel MOSFET

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



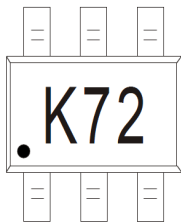
FEATURE

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

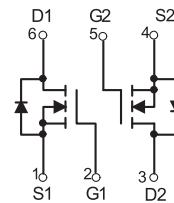
APPLICATION

- Load Switch for Portable Devices
- DC/DC Converter

MARKING



Equivalent Circuit



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

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

MOSFET ELECTRICAL CHARACTERISTICS

$T_a=25^\circ\text{C}$ 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	1.6	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
Drain-source on-resistance *	$R_{DS(on)}$	$V_{GS}=10\text{ V}$, $I_D=500\text{ mA}$		1.1	5	Ω
		$V_{GS}=5\text{ V}$, $I_D=50\text{ mA}$		1.2	7	
Forward transconductance *	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	

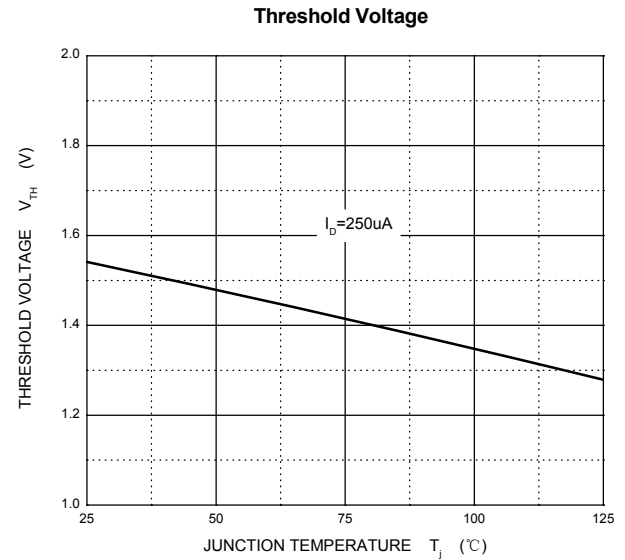
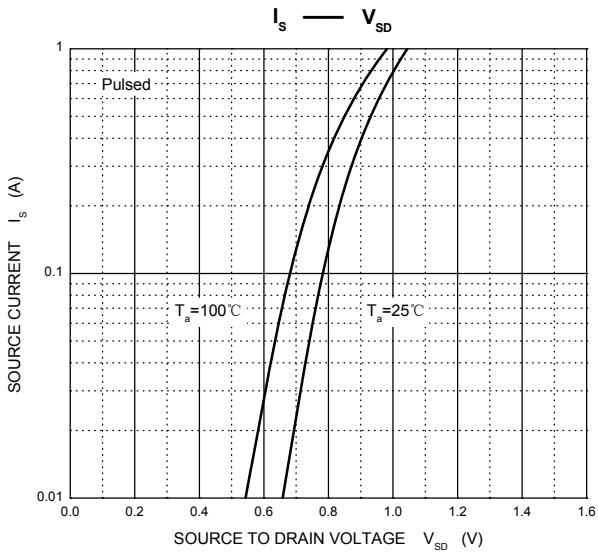
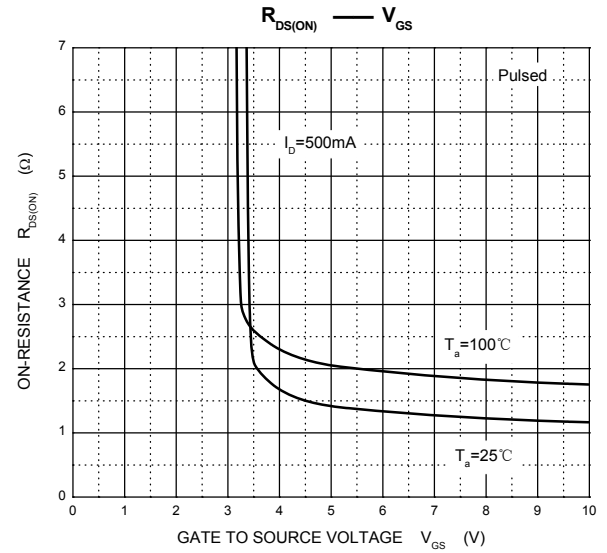
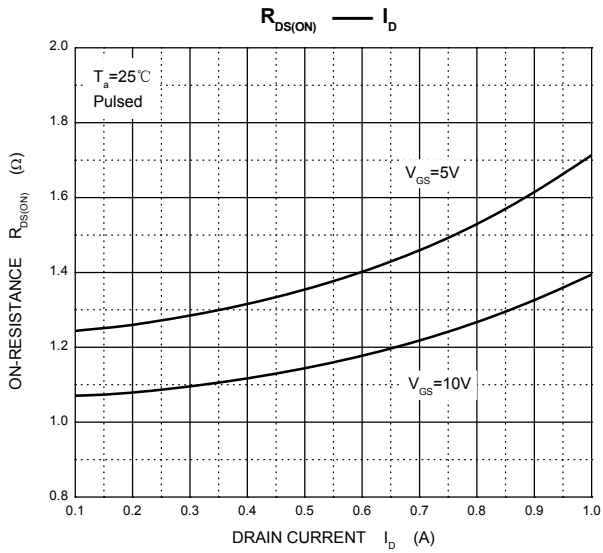
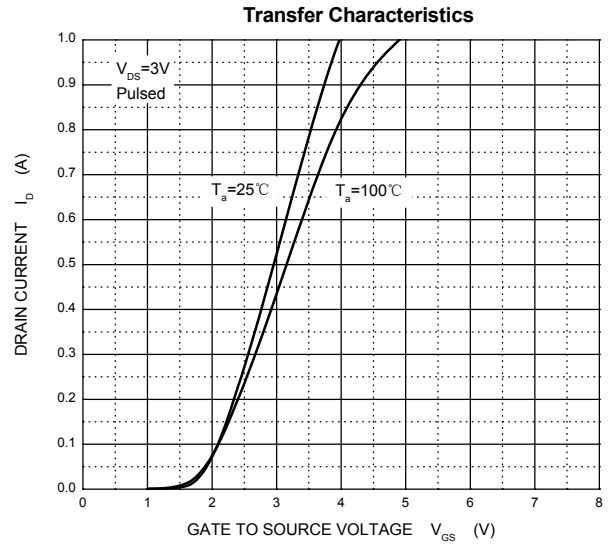
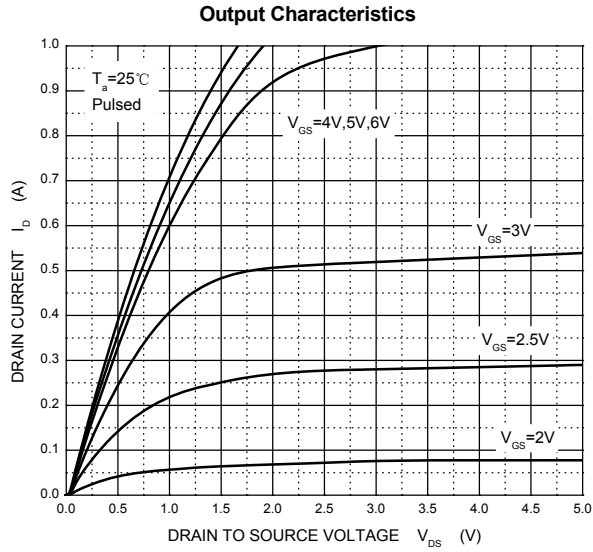
SWITCHING TIME

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

* Pulse Test: Pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$.

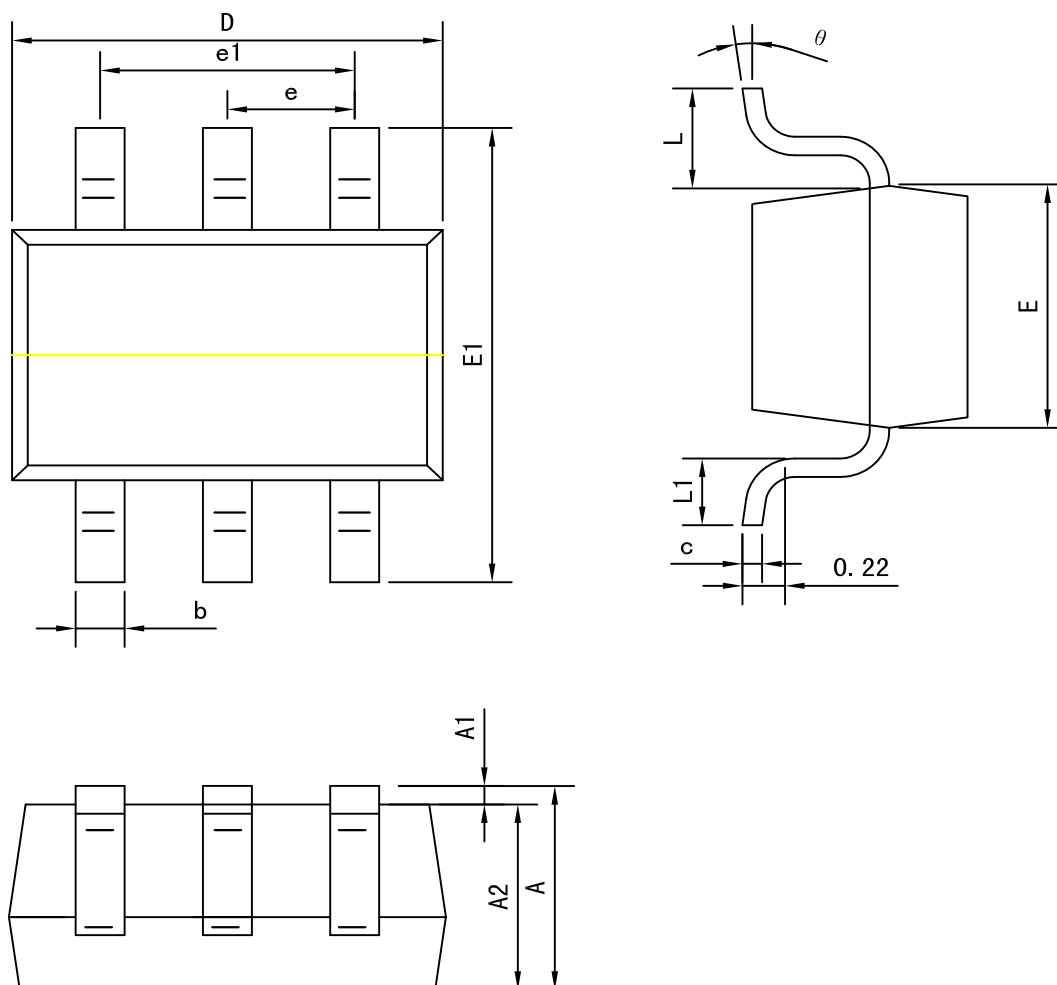
** These parameters have no way to verify.

Typical Characteristics



Package outline dimensions

SOT-363



Symbol	Dimension in Millimeters	
	Min	Max
A	0.900	1.100
A1	0.000	0.100
A2	0.900	1.000
b	0.150	0.350
c	0.080	0.150
D	2.000	2.200
E	1.150	1.350
E1	2.150	2.450
e	0.650 TYP	
e1	1.200	1.400
L	0.525 REF	
L1	0.260	0.460
θ	0°	8°