

60V Dual N-Channel MOSFET

Product Summary

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

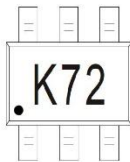
Feature

- High density cell design for Low $R_{DS(ON)}$
- Voltage controlled small signal switch
- Rugged and reliable
- High saturation current capability
- AEC-Q101 qualified (Automotive grade with suffix "Q".)
- Exsemi technology

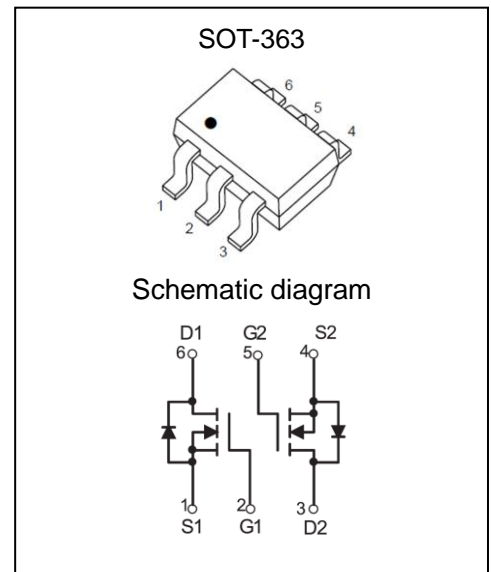
Application

- Load Switch for Portable Devices
- DC/DC Converter

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}	±20	V
Continuous Drain Current	I_D	115	mA
Power Dissipation	P_D	150	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	833	$^\circ\text{C}/\text{W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^\circ\text{C}$



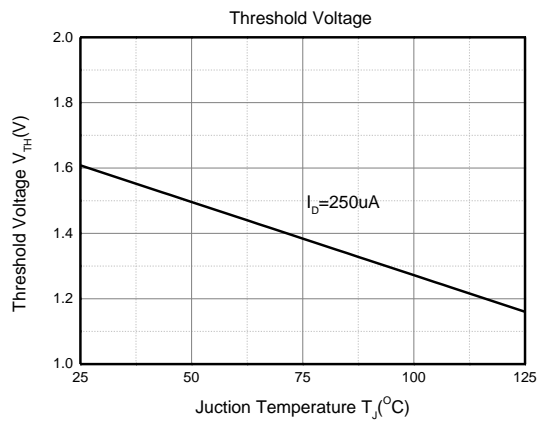
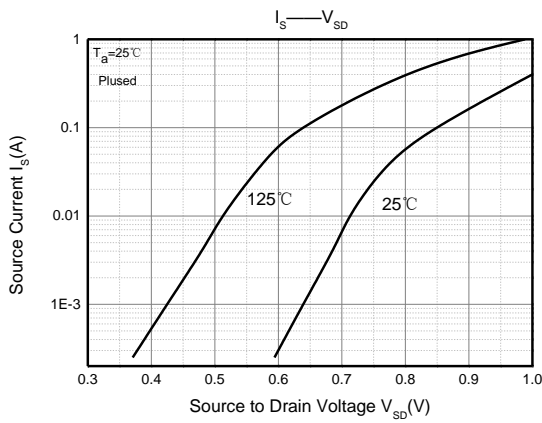
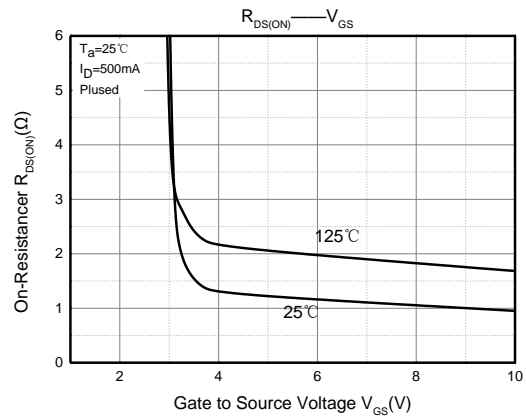
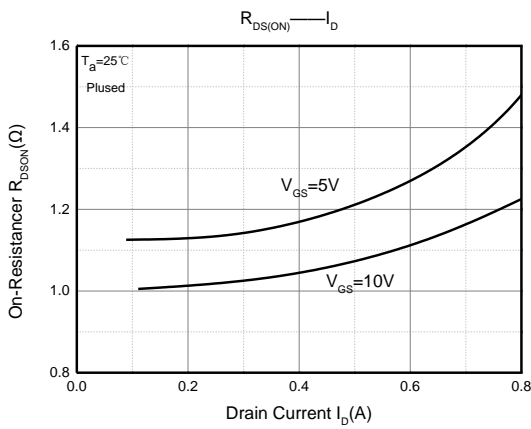
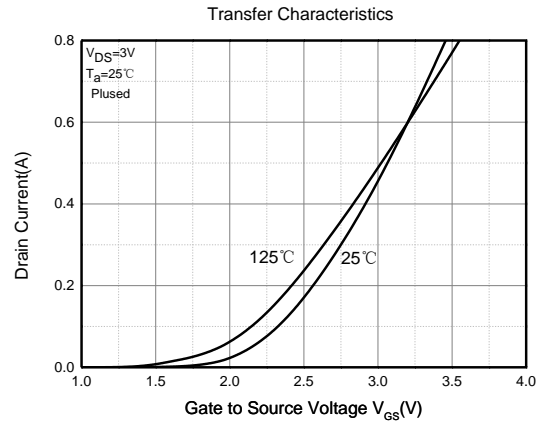
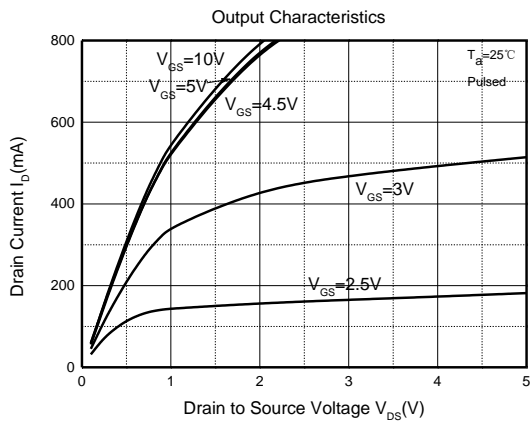
MOSFET ELECTRICAL CHARACTERISTICS($T_a=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	60			V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = 60V, V_{GS} = 0V$			80	nA
Gate-body leakage current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 80	nA
Gate threshold voltage*	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1	1.6	2.5	V
Drain-source on-resistance*	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 500mA$		1.0	5	Ω
		$V_{GS} = 5V, I_D = 50mA$		1.1	7	
Forward transconductance*	g_{FS}	$V_{DS} = 10V, I_D = 200mA$	80			mS
Dynamic characteristics**						
Input Capacitance	C_{iss}	$V_{DS} = 25V, V_{GS} = 0V, f = 1MHz$			50	μF
Output Capacitance	C_{oss}				25	
Reverse Transfer Capacitance	C_{rss}				5	
Switching Characteristics**						
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 25V, R_L = 50\Omega,$			20	ns
Turn-off delay time	$t_{d(off)}$	$I_D = 500mA, V_{GEN} = 10V, R_G = 25\Omega$			40	
Source-Drain Diode characteristics						
Diode Forward Voltage	V_{SD}	$I_S = 115mA, V_{GS} = 0V,$	0.55		1.2	V

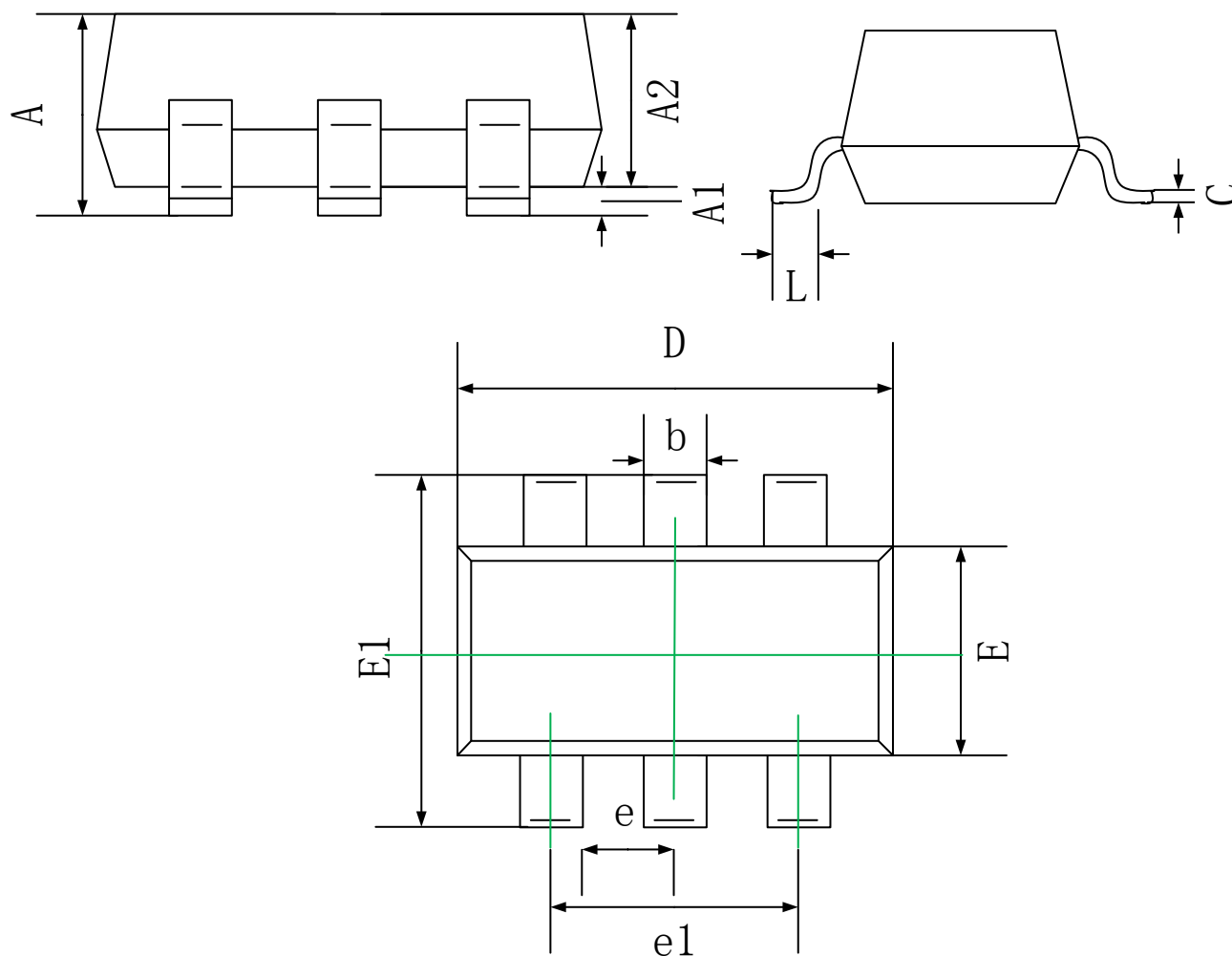
Notes:* Pulse Test: Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.

** These parameters have no way to verify.

Typical Electrical and Thermal Characteristic



SOT-363 Package Outline Dimensions



Symbol	Dimensions In Millimeters	
	Min.	Max.
A	0.90	1.10
A1	0.00	0.10
A2	0.90	1.00
b	0.15	0.35
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	0.26	0.46

Ordering information

Device	Package	Shipping
2N7002DW	SOT-363	3000/Tape&Reel(7inches)