

2N7002KDW

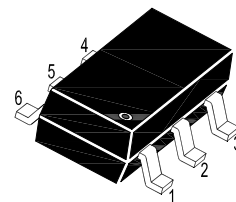
■ N-Channel MOSFET

■ Features

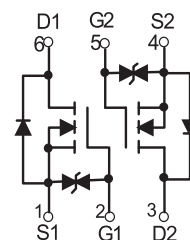
- High density cell design for Low $R_{DS(on)}$
- Voltage controlled small signal switch
- Rugged and reliable
- High saturation current capability
- ESD protected

■ Applications

- Load Switch for Portable Devices
- DC/DC Converter



■ Simplified outline(SOT-363)



$V_{(BR)DSS}$	$R_{DS(on)MAX}$	I_D
60V	$2.5\Omega@10V$	340mA
	$3\Omega@4.5V$	

■ Absolute Maximum Ratings $T_a = 25^\circ C$

Symbol	Parameter	Value	Unit
V_{DS}	Drain-Source voltage	60	V
V_{GS}	Gate-Source voltage	± 20	V
I_D	Drain Current	340	mA
P_D	Power Dissipation	0.15	W
T_J	Junction Temperature	150	$^\circ C$
T_{stg}	Storage Temperature	-55-150	$^\circ C$
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	833	$^\circ C / W$

2N7002KDW

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Static Characteristics						
Drain-Source Breakdown Voltage	V _{DS}	V _{GS} = 0V, I _D =250μA	60			V
Gate Threshold Voltage*	V _{GS(th)}	V _{DS} =V _{GS} , I _D =1mA	1	1.3	2.5	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =48V, V _{GS} = 0V			1	μA
Gate –Source leakage current	I _{GSS1}	V _{GS} =±20V, V _{DS} = 0V			±10	μA
Drain-Source On-Resistance*	R _{DS(on)}	V _{GS} = 4.5V, I _D =200mA		1.1	3	Ω
		V _{GS} =10V, I _D =500mA		0.9	2.5	Ω
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =300mA			1.5	V
Recovered charge	Q _r	V _{GS} =0V, I _S =300mA, V _R =25V, dI _S /dt=-100A/μs		30		nC
Dynamic Characteristics**						
Input Capacitance	C _{iss}	V _{DS} =10V, V _{GS} =0V, f =1MHz			40	pF
Output Capacitance	C _{oss}				30	pF
Reverse Transfer Capacitance	C _{rss}				10	pF
Switching Characteristics**						
Turn-On Delay Time	t _{d(on)}	V _{GS} =10V, V _{DD} =50V, R _G =50Ω, R _{GS} =50Ω, R _L =250Ω			10	ns
Turn-Off Delay Time	t _{d(off)}				15	ns
Reverse recovery Time	t _{rr}	V _{GS} =0V, I _S =300mA, V _R =25V, dI _S /dt=-100A/μs		30		ns
GATE-SOURCE ZENER DIODE						
Gate-Source Breakdown Voltage	BV _{GSO}	I _{gs} =±1mA (Open Drain)	±21.5		±30	V

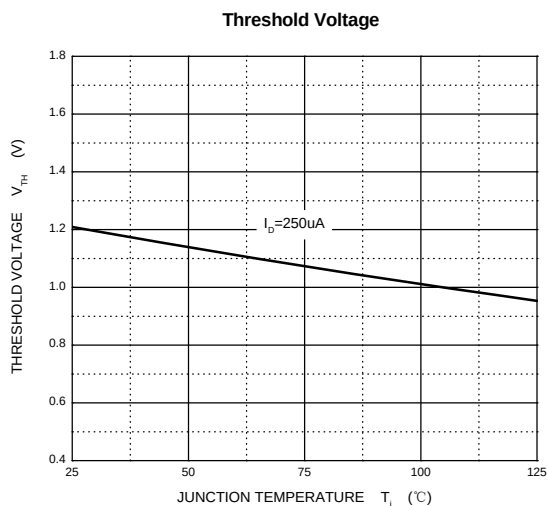
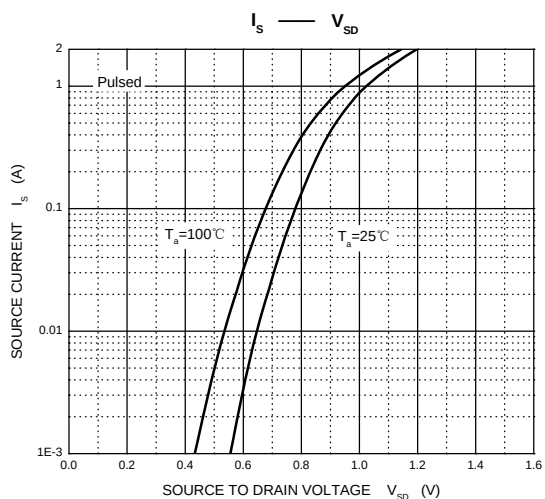
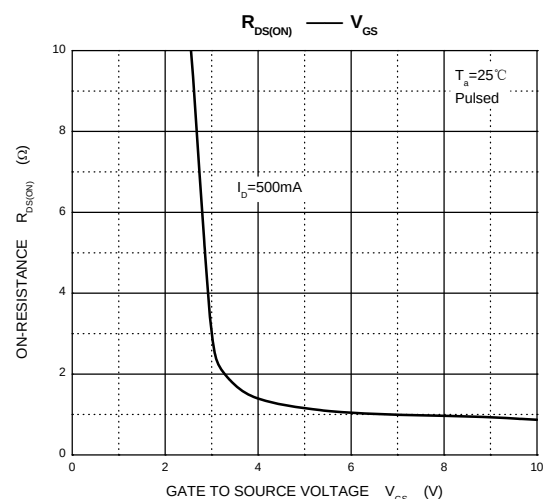
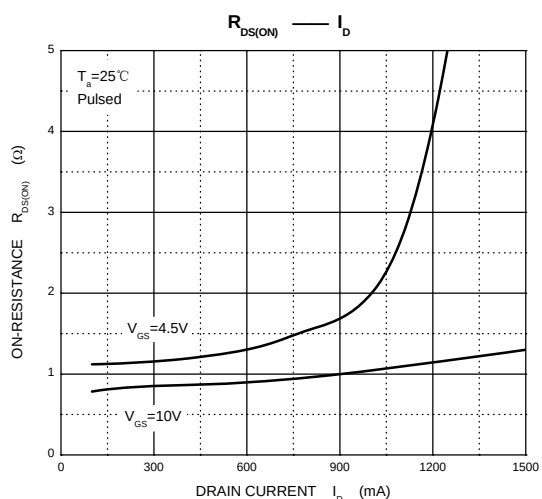
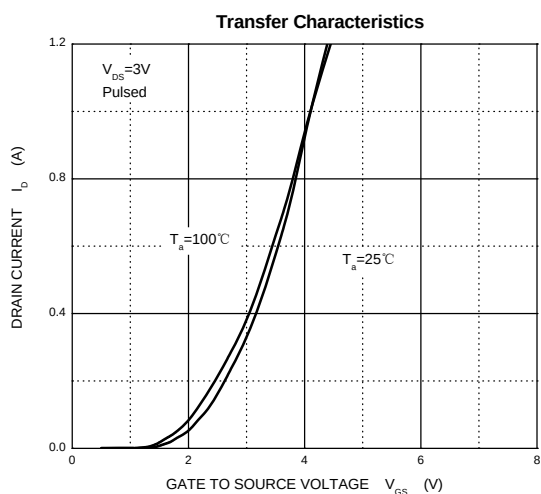
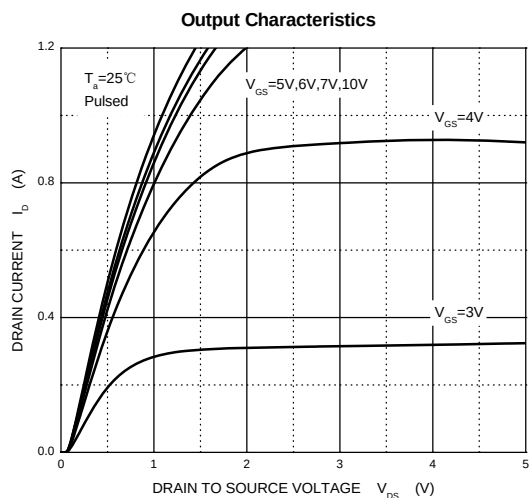
Notes :

*Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.

**These parameters have no way to verify.

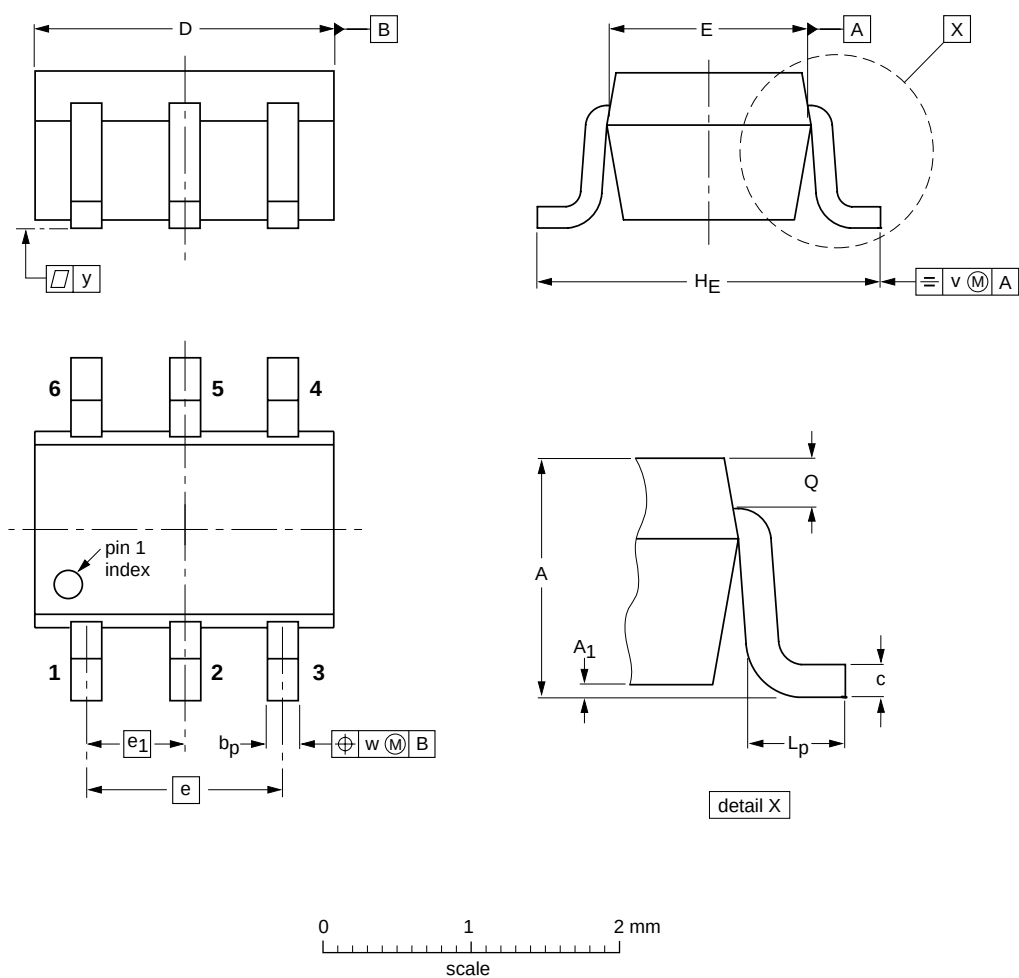


2N7002KDW



2N7002KDW

■ SOT-363



DIMENSIONS (mm are the original dimensions)

UNIT	A	A ₁ max	b _p	c	D	E	e	e ₁	H _E	L _p	Q	v	w	y
mm	1.1 0.8	0.1	0.30 0.20	0.25 0.10	2.2 1.8	1.35 1.15	1.3	0.65	2.2 2.0	0.45 0.15	0.25 0.15	0.2	0.2	0.1