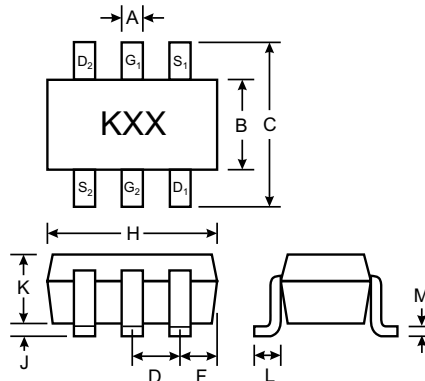


### Features

- Dual N-Channel MOSFET
- Low On-Resistance
- Low Gate Threshold Voltage
- Low Input Capacitance
- Fast Switching Speed
- Low Input/Output Leakage
- Ultra-Small Surface Mount Package

### Mechanical Data

- Case: SOT-363, Molded Plastic
- Terminals: Solderable per MIL-STD-202, Method 208
- Terminal Connections: See Diagram
- Marking: K72
- Weight: 0.006 grams (approx.)



SOT-363		
Dim	Min	Max
A	0.10	0.30
B	1.15	1.35
C	2.00	2.20
D	0.65 Nominal	
F	0.30	0.40
H	1.80	2.20
J	—	0.10
K	0.90	1.00
L	0.25	0.40
M	0.10	0.25
All Dimensions in mm		

### Maximum Ratings @ T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	2N7002DW	Units
Drain-Source Voltage	V <sub>DSS</sub>	60	V
Drain-Gate Voltage R <sub>GS</sub> ≤ 1.0MΩ	V <sub>DGR</sub>	60	V
Gate-Source Voltage (Note 1)	V <sub>GSS</sub>	±20	V
		±40	
Drain Current (Note 1)	I <sub>D</sub>	115	mA
		73	
		800	
Total Power Dissipation Derating above T <sub>A</sub> = 25°C (Note 1)	P <sub>d</sub>	200	mW
		1.60	
Thermal Resistance, Junction to Ambient	R <sub>θJA</sub>	625	K/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

- Note: 1. Valid provided that terminals are kept at specified ambient temperature.  
2. Pulse width ≤ 300μs, duty cycle ≤ 2%.

**Electrical Characteristics** @  $T_A = 25^\circ\text{C}$  unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
<b>OFF CHARACTERISTICS (Note 2)</b>						
Drain-Source Breakdown Voltage	$BV_{DSS}$	60	70	—	V	$V_{GS} = 0V, I_D = 10\mu A$
Zero Gate Voltage Drain Current	$I_{DSS}$	—	—	1.0 500	$\mu A$	$V_{DS} = 60V, V_{GS} = 0V$ @ $T_C = 25^\circ\text{C}$ @ $T_C = 125^\circ\text{C}$
Gate-Body Leakage	$I_{GSS}$	—	—	$\pm 10$	nA	$V_{GS} = \pm 20V, V_{DS} = 0V$
<b>ON CHARACTERISTICS (Note 2)</b>						
Gate Threshold Voltage	$V_{GS(th)}$	1.0	—	2.0	V	$V_{DS} = V_{GS}, I_D = -250\mu A$
Static Drain-Source On-Resistance	$R_{DS(ON)}$	—	3.2 4.4	7.5 13.5	$\Omega$	$V_{GS} = 5.0V, I_D = 0.05A$ $V_{GS} = 10V, I_D = 0.5A$
On-State Drain Current	$I_{D(ON)}$	0.5	1.0	—	A	$V_{GS} = 10V, V_{DS} = 7.5V$
Forward Transconductance	$g_{FS}$	80	—	—	mS	$V_{DS} = 10V, I_D = 0.2A$
<b>DYNAMIC CHARACTERISTICS</b>						
Input Capacitance	$C_{iss}$	—	22	50	pF	$V_{DS} = 25V, V_{GS} = 0V$ $f = 1.0\text{MHz}$
Output Capacitance	$C_{oss}$	—	11	25	pF	
Reverse Transfer Capacitance	$C_{rss}$	—	2.0	5.0	pF	
<b>SWITCHING CHARACTERISTICS</b>						
Turn-On Delay Time	$t_{D(ON)}$	—	7.0	20	ns	$V_{DD} = 30V, I_D = 0.2A,$ $R_L = 150\Omega, V_{GEN} = 10V,$ $R_{GEN} = 25\Omega$
Turn-Off Delay Time	$t_{D(OFF)}$	—	11	20	ns	

- Note: 1. Valid provided that terminals are kept at specified ambient temperature.  
2. Pulse width  $\leq 300\mu s$ , duty cycle  $\leq 2\%$ .

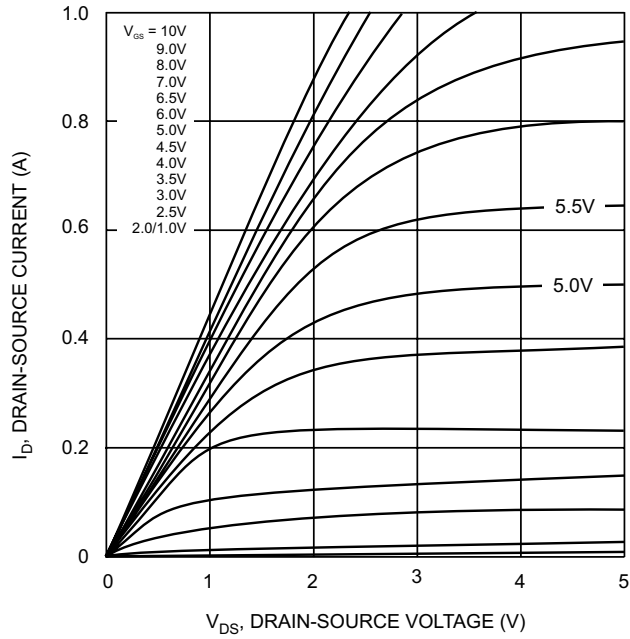


Fig. 1 On-Region Characteristics

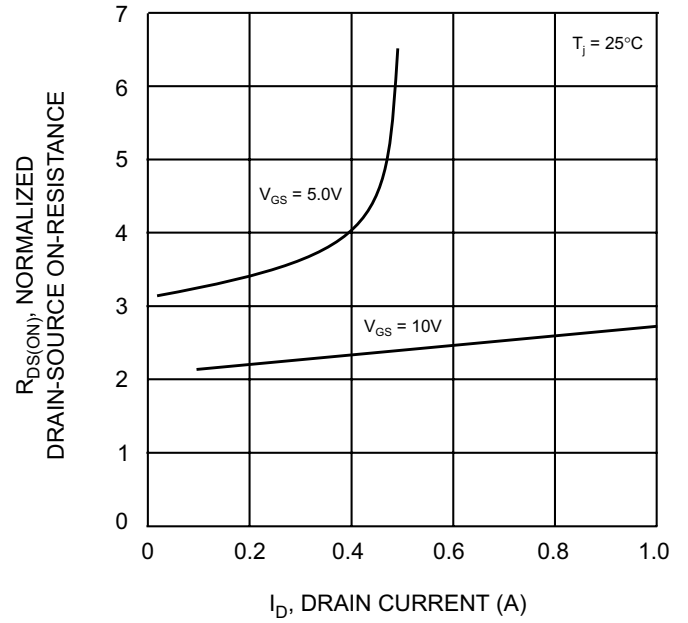


Fig. 2 On-Resistance vs Drain Current

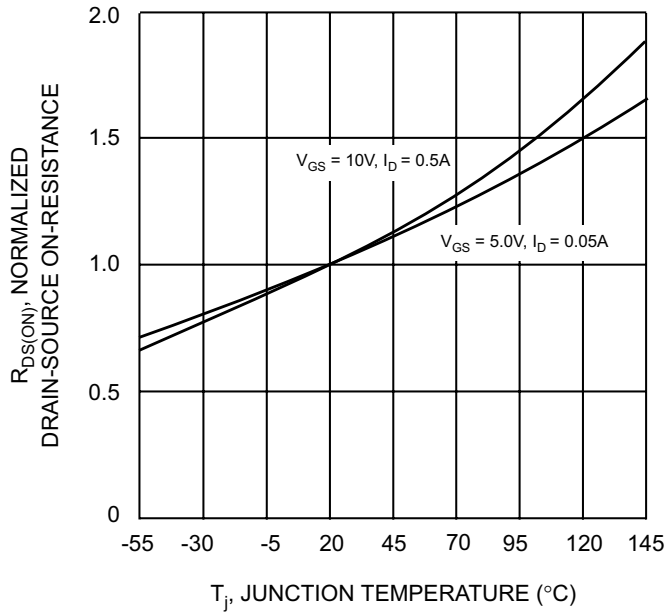


Fig. 3 On-Resistance vs Junction Temperature

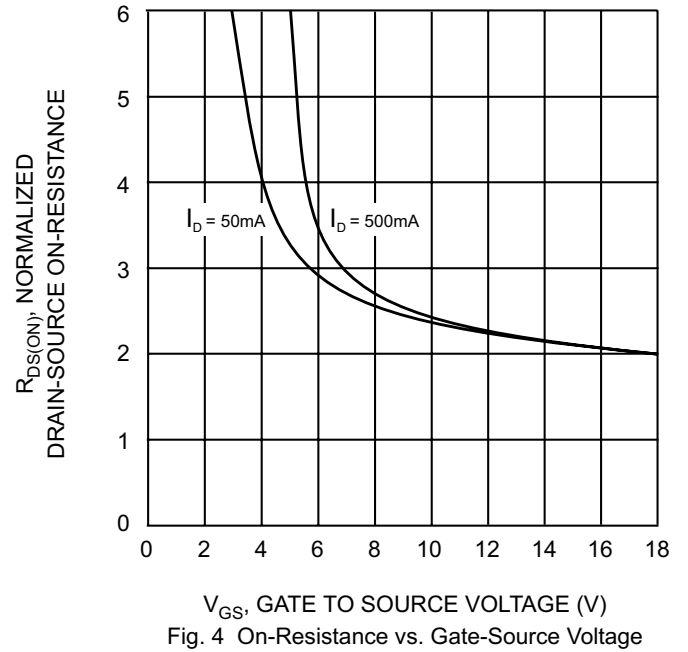


Fig. 4 On-Resistance vs. Gate-Source Voltage