



Micro Commercial Components



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2N7002DW

N-Channel MOSFET

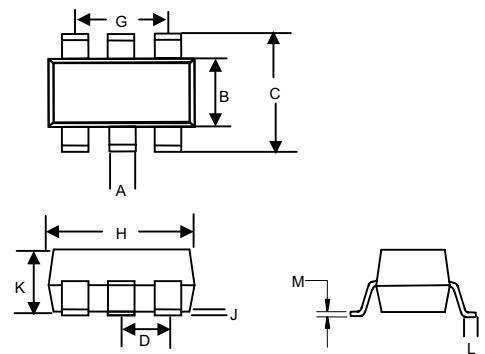
Features

- Halogen free available upon request by adding suffix "-HF"
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- High density cell design for low $R_{DS(ON)}$
- Rugged and reliable
- Voltage controlled small signal switch
- Operating Junction Temperature: -55 to +150°C
- Storage Temperature: -55 to +150°C
- Marking: K72

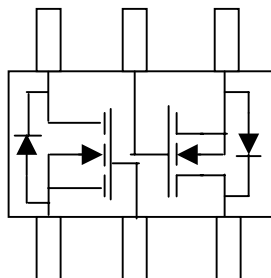
Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Value	Units
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_{thJA}	Thermal Resistance from Junction to Ambient	833	°C/W

SOT-363



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	.006	.014	0.15	0.35	
B	.045	.053	1.15	1.35	
C	.085	.096	2.15	2.45	
D	.026		0.65Nominal		
G	.047	.055	1.20	1.40	
H	.071	.087	1.80	2.20	
J	---	.004	---	0.10	
K	.035	.043	0.90	1.10	
L	.010	.018	0.26	0.46	
M	.003	.006	0.08	0.15	



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

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS}=0\text{ V}, I_D=250\ \mu\text{A}$	60			V
Gate-threshold voltage *	$V_{th(GS)}$	$V_{DS}=V_{GS}, I_D=250\ \mu\text{A}$	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
Drain-source on-resistance *	$R_{DS(on)}$	$V_{GS}=10\text{ V}, I_D=500\text{mA}$			7	Ω
		$V_{GS}=5\text{ V}, I_D=50\text{mA}$			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	

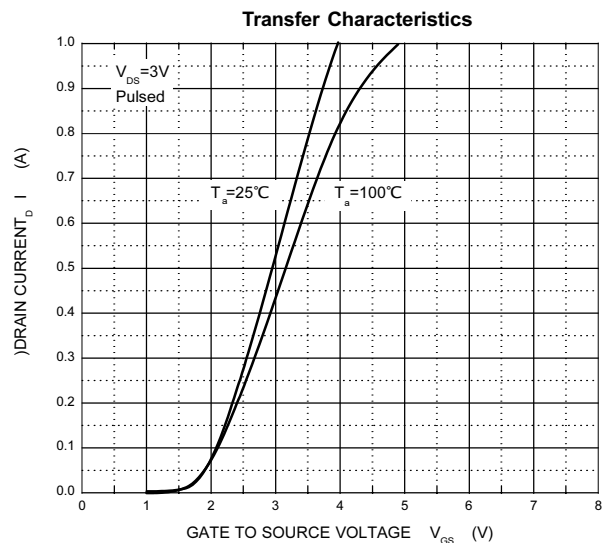
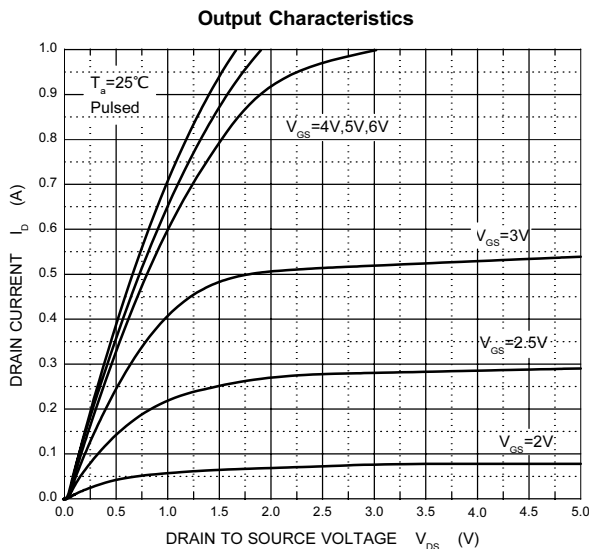
SWITCHING TIME

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

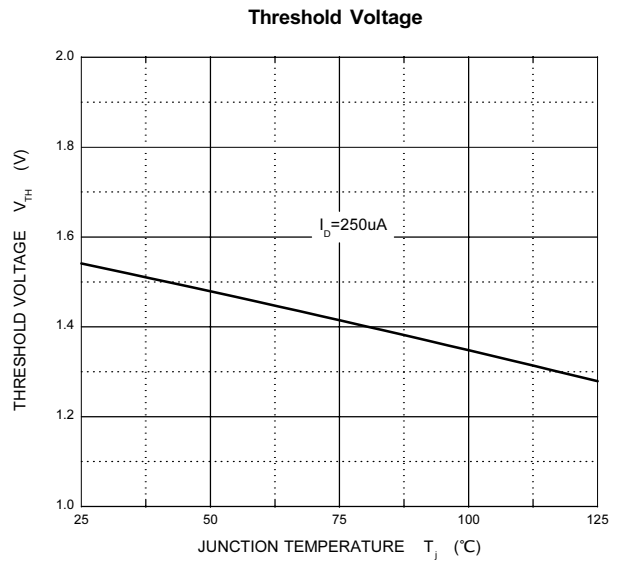
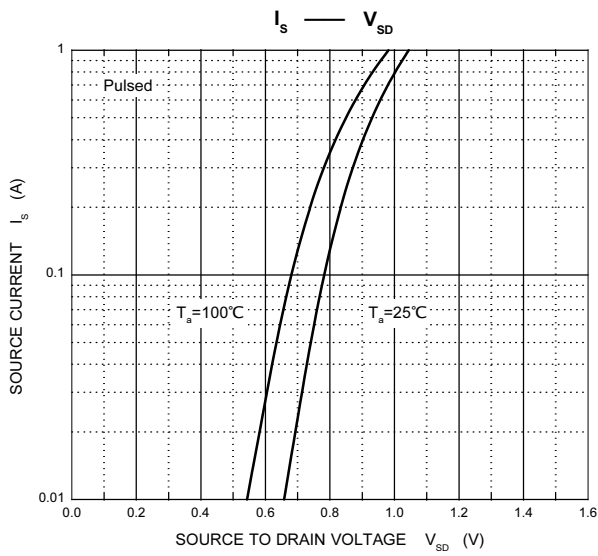
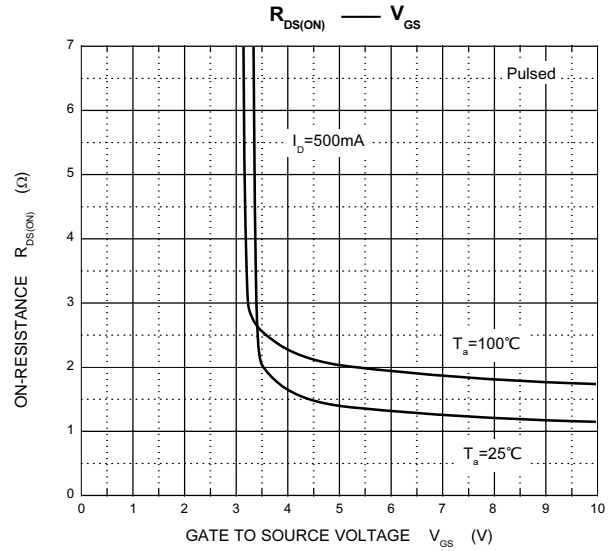
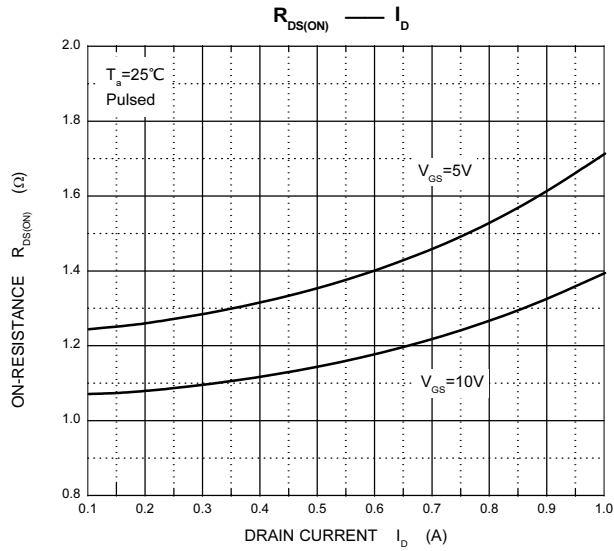
* Pulse Test: Pulse width $\leq 300\ \mu\text{s}$, duty cycle $\leq 2\%$.

** These parameters have no way to verify.

Typical Characteristics



Typical Characteristics





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Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel: 3Kpcs/Reel

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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