



Micro Commercial Components



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20736 Marilla Street Chatsworth
CA 91311
Phone: (818) 701-4933
Fax: (818) 701-4939

2N7002W

Features

- Low ON-Resistance
- Low Input Capacitance
- Low Gate Threshold Voltage
- Fast Switching Speed
- Low Input/Output Leakage
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

Mechanical Data

- Case: SOT-323, Molded Plastic
- Terminals: Solderable per MIL-STD-202, Method 208
- Terminal Connections: See Diagram
- Marking: K72

Maximum Ratings

- Operating Temperature: -55°C to +150°C
- Storage Temperature: -55°C to +150°C
- Maximum Thermal Resistance; 625K/W Junction To Ambient

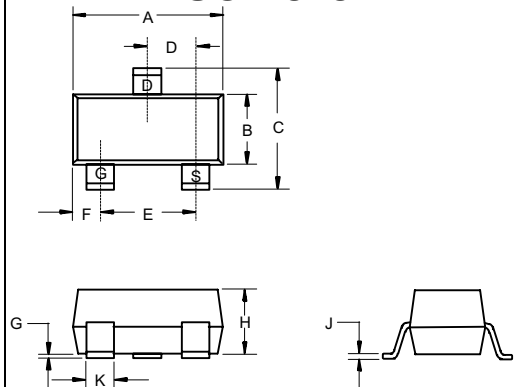
Parameter	Symbol	Value	Unit
Drain-Source-Voltage	V_{DSS}	60	V
Drain-Gate Voltage $R_{GS} \leq 1.0M\Omega$	V_{DGR}	60	V
Gate-Source-Voltage Continuous Pulsed	V_{GSS}	± 20 ± 40	V
Drain Current (Note 1) Continuous Continuous @ 100°C Pulsed	I_D	115 73 800	mA
Total Power Dissipation (Note 1) Derating above $T_A = 25^\circ C$	P_D	200 1.60	mW mW/°C

Note: 1. Valid provided that terminals are kept at specified ambient temperature.

2. Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$

N-Channel Enhancement Mode Field Effect Transistor

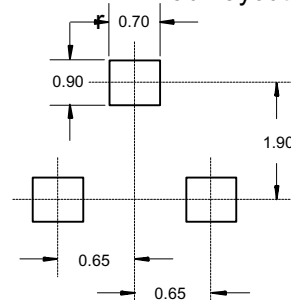
SOT-323



DIMENSIONS

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.071	.087	1.80	2.20	
B	.045	.053	1.15	1.35	
C	.079	.087	2.00	2.20	
D	.026 Nominal		0.65 Nominal		
E	.047	.055	1.20	1.40	
F	.012	.016	.30	.40	
G	.000	.004	.000	.100	
H	.035	.039	.90	1.00	
J	.004	.010	.100	.250	
K	.012	.016	.30	.40	

Suggested Solder Pad Layout



2N7002W

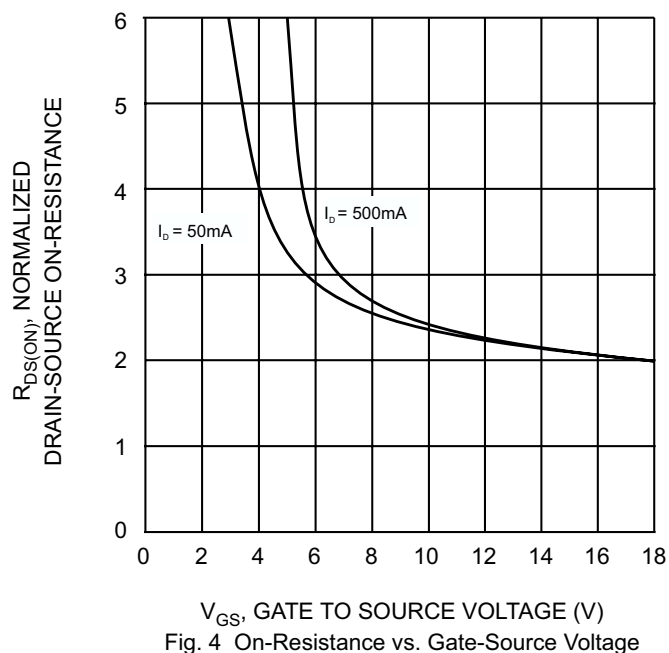
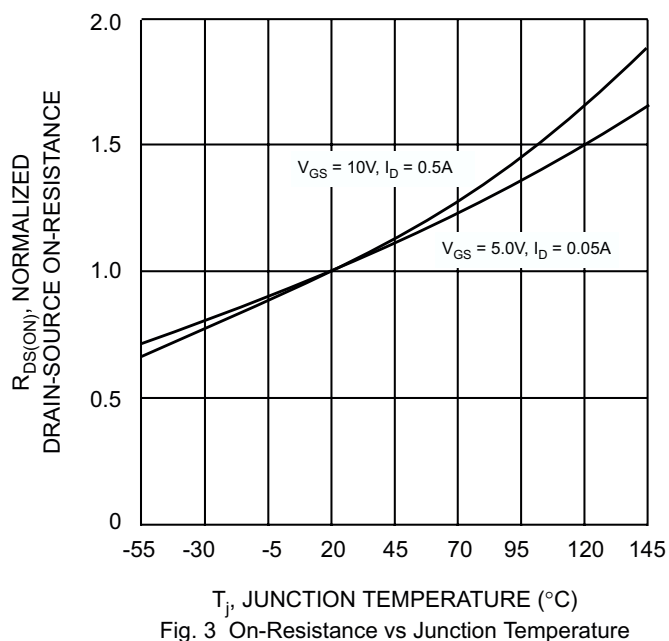
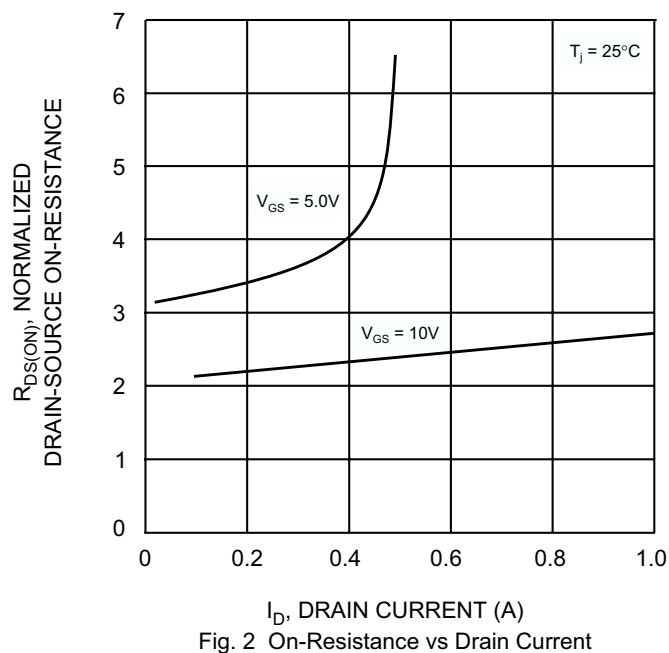
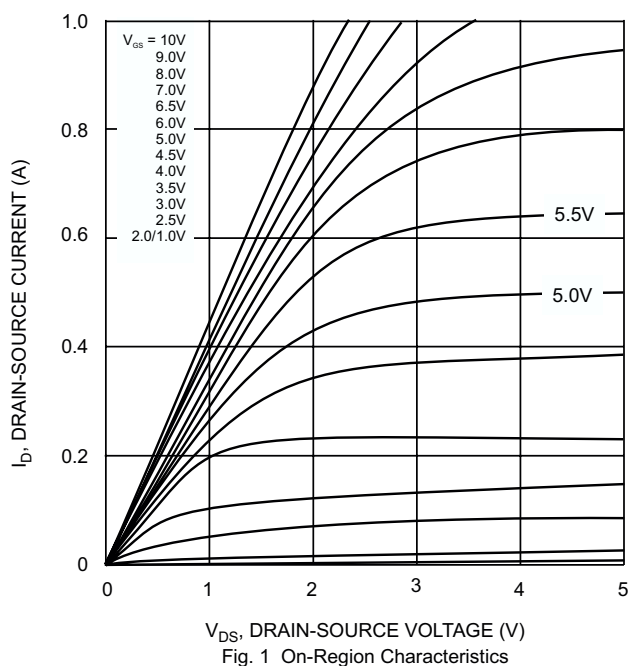
Electrical Characteristics @ T_A = 25 °C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition	
OFF CHARACTERISTICS (Note 2)							
Drain-Source Breakdown Voltage	BV _{DSS}	60	70		V	V _{GS} = 0V, I _D = 10 A	
Zero Gate Voltage Drain Current	@ T _C = 25°C @ T _C = 125°C	I _{DSS}		1.0 500	μA	V _{DS} = 60V, V _{GS} = 0V	
Gate-Body Leakage		I _{GSS}		±10	nA	V _{GS} = ±20V, V _{DS} = 0V	
ON CHARACTERISTICS (Note 2)							
Gate Threshold Voltage		V _{GS(th)}	1.0		2.0	V	V _{DS} = V _{GS} , I _D =-250 A
Static Drain-Source On-Resistance	@ T _J = 25°C @ T _J = 125°C	R _{DS (ON)}		3.2 4.4	7.5 13.5	Ω	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
DYNAMIC CHARACTERISTICS							
Input Capacitance		C _{iss}		22	50	pF	V _{DS} = 25V, V _{GS} = 0V f = 1.0MHz
Output Capacitance		C _{oss}		11	25	pF	
Reverse Transfer Capacitance		C _{rss}		2.0	5.0	pF	
SWITCHING CHARACTERISTICS							
Turn-On Delay Time		t _{D(ON)}		7.0	20	ns	V _{DD} = 30V, I _D = 0.2A, R _L = 150 Ω, V _{GEN} = 10V, R _{GEN} = 25
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 ≤ 300μs, duty cycle ≤ 2%.

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Ordering Information :

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

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