



Micro Commercial Components



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2N7002T

N-Channel Plastic-Encapsulate Transistor

Features

- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Low ON-Resistance and low Input Capacitance
- Low Gate Threshold Voltage
- Fast Switching Speed
- Low Input/Output Leakage
- Ultra-Small Surface Mount Package
- Available in Lead Free/RoHS Compliant Version
- Case Material:Molded Plastic. UL Flammability Classification Rating 94V-0 and MSL Rating 1
- Marking:K72
- Halogen free available upon request by adding suffix "-HF"

Mechanical Data

- Case: SOT-523, Molded Plastic
- Terminal Connections: See Diagram

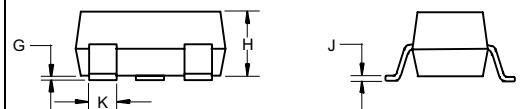
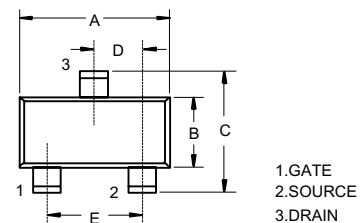
Maximum Ratings

- Operating Temperature: -55°C to +150°C
- Storage Temperature: -55°C to +150°C

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)	P_D	150	mW

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

SOT-523



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.059	.067	1.50	1.70	
B	.030	.033	0.75	0.85	
C	.057	.069	1.45	1.75	
D	.020 Nominal		0.50 Nominal		
E	.035	.043	0.90	1.10	
G	.000	.004	.000	.100	
H	.028	.031	.70	0.80	
J	.004	.008	.100	.200	
K	.010	.014	.25	.35	

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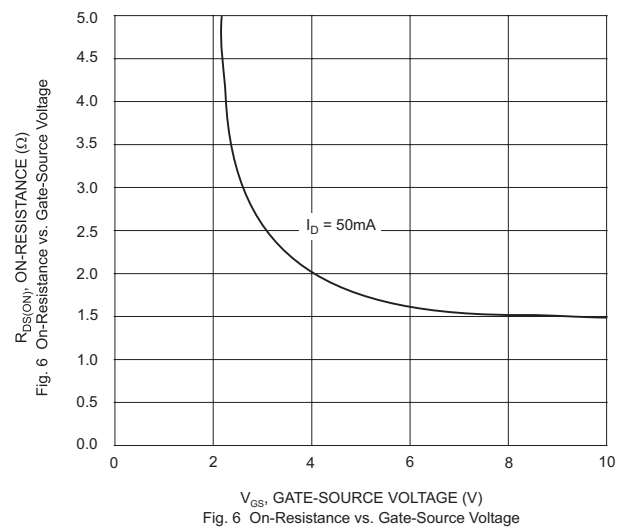
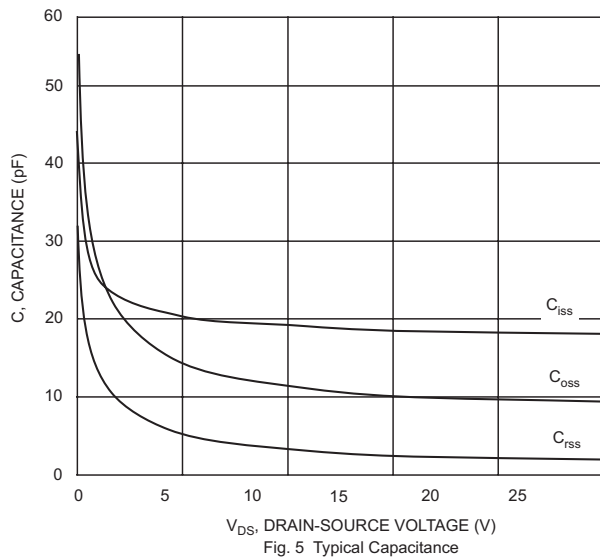
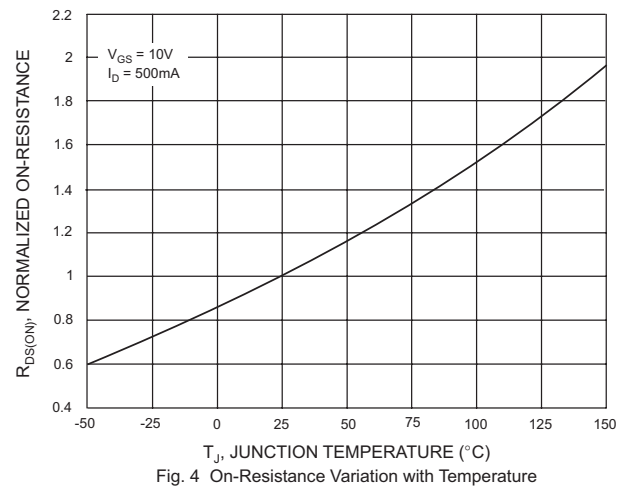
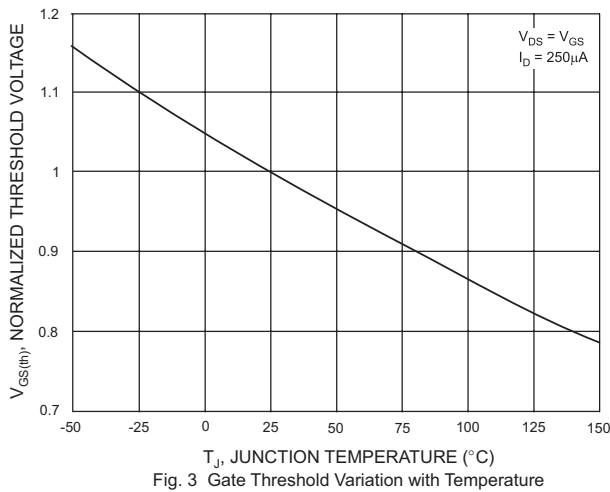
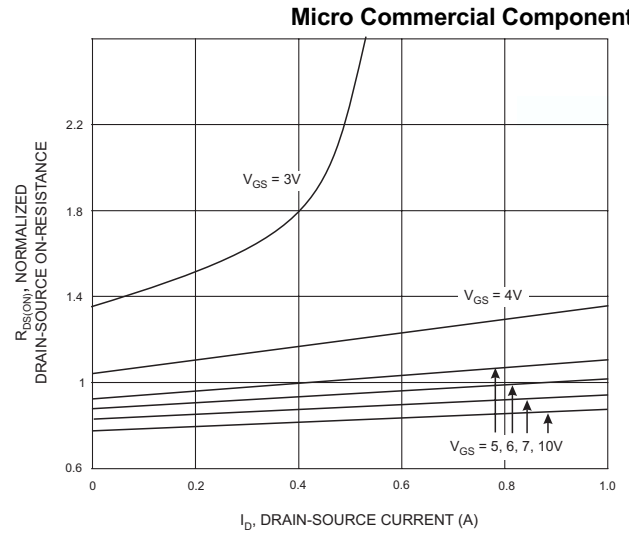
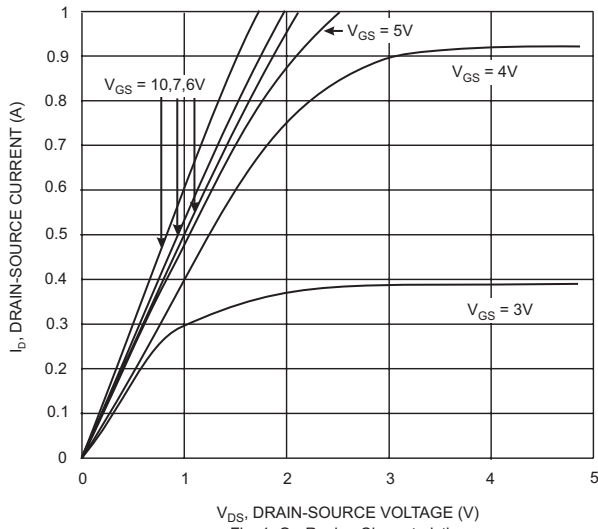
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Electrical Characteristics @ T_A = 25 °C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 2)						
Drain-Source Breakdown Voltage	BV _{DSS}	60			V	V _{GS} = 0V, I _D = 10μA
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 =250μA
Static Drain-Source On-Resistance	R _{DS (ON)}		2.0	7.5	Ω	V _{GS} = 5.0V, I _D = 0.05A
			4.4	13.5		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 ohm, V _{GEN} = 10V, R _{GEN} = 25 ohm
Turn-Off Delay Time	t _{D(OFF)}		11	20	ns	

Note: 2. Short duration test pulse used to minimize self-heating effect.

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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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