



Micro Commercial Components



Micro Commercial Components  
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# 2N7002DWL

## Dual N-Channel MOSFET

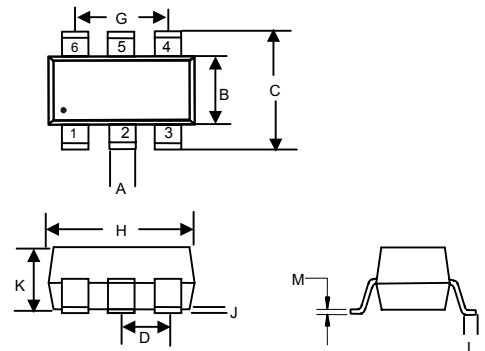
### SOT23-6L

### Features

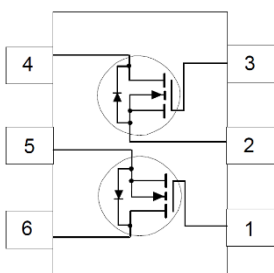
- High density cell design for Low RDS(on)
- Rugged and reliable
- Moisture Sensitivity Level 1
- Voltage controlled small signal switch
- High saturation current capability
- Epoxy meets UL 94 V-0 flammability rating
- Halogen free available upon request by adding suffix "-HF"

### Maximum Ratings @ 25°C Unless Otherwise Specified

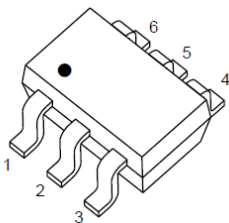
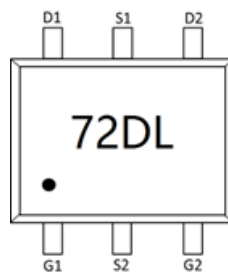
Parameter	Symbol	Value	Unit
Drain-Source Voltage	VDS	60	V
Gate-Source Voltage	VGS	±20	V
Continuous Drain Current	ID	115	mA
Power Dissipation	PD	0.225	W
Thermal Resistance from Junction to Ambient	RθJA	277	°C/W
Junction Temperature	TJ	150	°C
Storage Temperature	TSTG	-55~ +150	°C



### Equivalent Circuit :



### Marking:



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	.012	.020	0.30	0.50	
B	.051	.070	1.30	1.80	
C	.087	.126	2.20	3.20	
D	.037		0.95BSC		
G	.074		1.90BSC		
H	.106	.122	2.70	3.10	
J	.002	.006	0.05	0.15	
K	.030	.035	0.75	0.90	
L	.012	.024	0.30	0.60	
M	.003	.008	0.08	0.22	

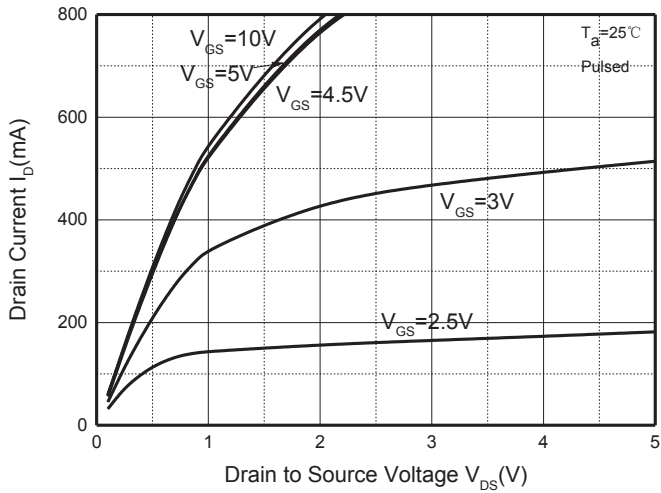
**Electrical characteristics (T<sub>A</sub>=25 °C, unless otherwise noted)**

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
<b>Static Characteristics</b>						
Drain-source breakdown voltage	V <sub>(BR)DSS</sub>	V <sub>GS</sub> = 0V, I <sub>D</sub> =250μA	60			V
Zero gate voltage drain current	I <sub>DSS</sub>	V <sub>DS</sub> =60V, V <sub>GS</sub> = 0V			100	nA
Gate-body leakage current	I <sub>GSS</sub>	V <sub>GS</sub> =±20V, V <sub>DS</sub> = 0V			±1	uA
Gate threshold voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA	1	1.4	2.5	V
On-state drain current	I <sub>D(on)</sub>	V <sub>GS</sub> =10V, V <sub>DS</sub> =7V	500			mA
Drain-source on-resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =500mA			4.5	Ω
		V <sub>GS</sub> =5V, I <sub>D</sub> =50mA			5	
On-state drain-source voltage	V <sub>DS(on)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =500mA			3	V
		V <sub>GS</sub> =5V, I <sub>D</sub> =50mA			0.375	
<b>Dynamic characteristics</b>						
Input Capacitance <sup>1)</sup>	C <sub>iss</sub>	V <sub>DS</sub> =25V, V <sub>GS</sub> =0V, f=1MHz		10.1	50	pF
Output Capacitance <sup>1)</sup>	C <sub>oss</sub>			4.2	25	
Reverse Transfer Capacitance <sup>1)</sup>	C <sub>rss</sub>			1.9	5	
<b>Switching Characteristics</b>						
Turn-on delay time <sup>1)</sup>	t <sub>d(on)</sub>	V <sub>DD</sub> =10 V, R <sub>L</sub> =20Ω I <sub>D</sub> =500mA, V <sub>GEN</sub> =10V, R <sub>G</sub> =10Ω		5.6		ns
Turn-off delay time <sup>1)</sup>	t <sub>d(off)</sub>			25		
<b>Source-Drain Diode characteristics</b>						
Diode Forward voltage	V <sub>SD</sub>	V <sub>GS</sub> =0V, I <sub>S</sub> =150mA	0.6	0.82	1.0	V
Source Current Continuous	I <sub>S</sub>				115	mA

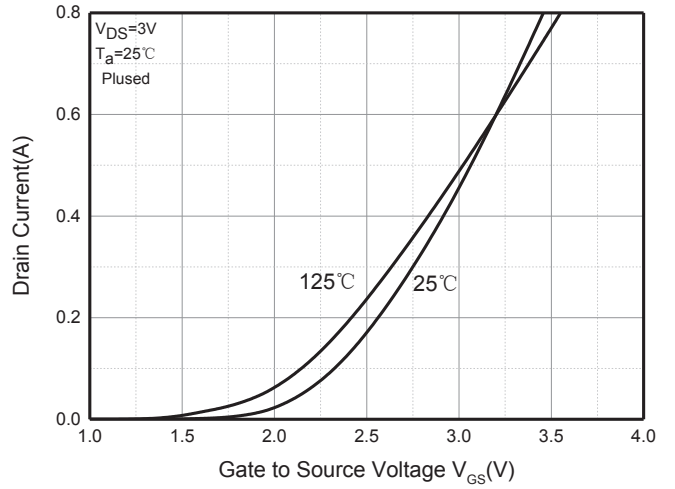
**Notes:**

1) These parameters have no way to verify.

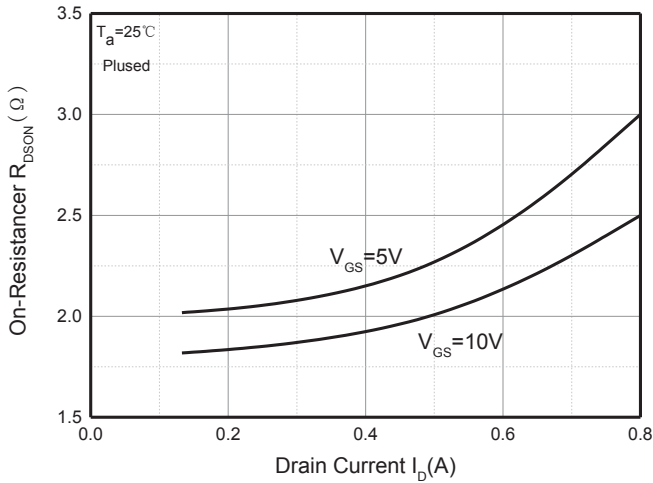
# Typical characteristics



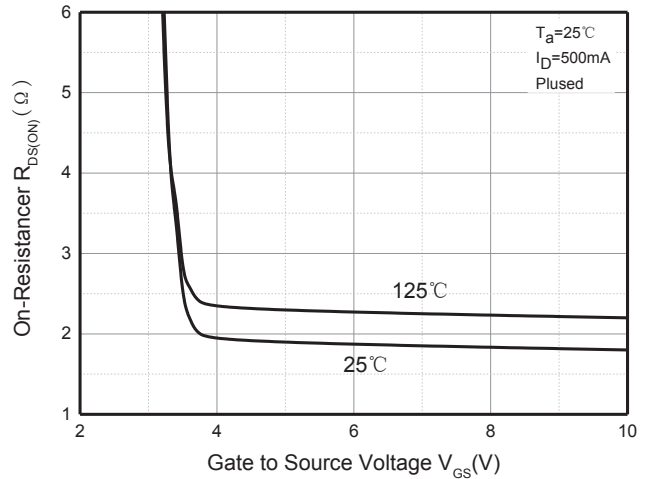
**Output Characteristics**



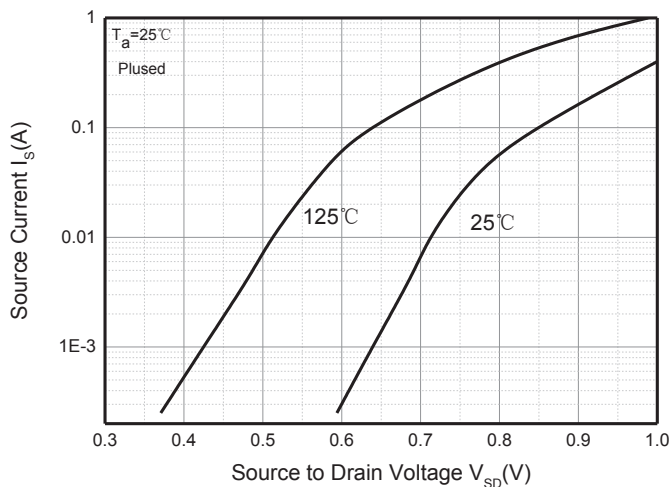
**Transfer Characteristics**



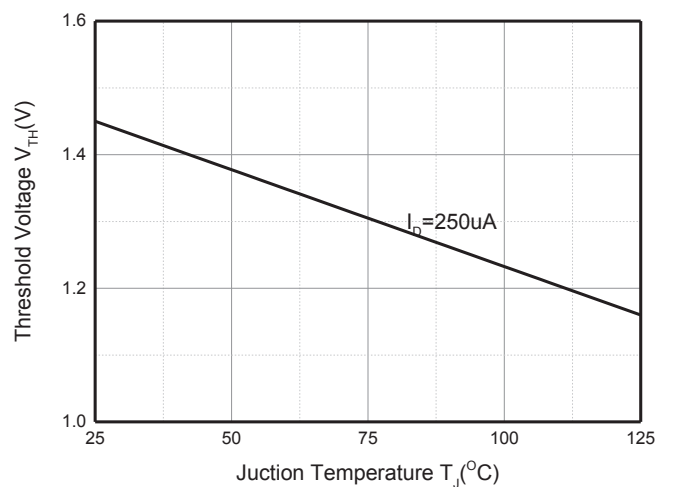
**On-Resistance vs. Drain current**



**On-Resistance vs. Gate to Source Voltage**



**Source Current vs. Source to Drain Voltage**



**Threshold voltage vs. Junction temperature**



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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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