



Micro Commercial Components  
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## 2N7002V

### Features

- Dual N-Channel MOSFET
- Low On-Resistance
- Low Gate Threshold Voltage
- Low Input Capacitance
- Fast Switching Speed

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

Symbol	Rating	Rating	Unit
V <sub>DSS</sub>	Drain-source Voltage	60	V
V <sub>DGR</sub>	Drain-Gate Voltage	60	V
V <sub>GSS</sub>	Gate-source Voltage	±20	V
I <sub>D</sub>	Drain Current	280	mA
P <sub>D</sub>	Total Power Dissipation	150	mW
R <sub>θJA</sub>	Thermal Resistance Junction to Ambient	833	°C/W
T <sub>J</sub>	Operating Junction Temperature	-55 to +150	°C
T <sub>STG</sub>	Storage Temperature	-55 to +150	°C

### Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Min	Typ	Max	Units
V <sub>(BR)DSS</sub>	Drain-Source Breakdown Voltage* (V <sub>GS</sub> =0Vdc, I <sub>D</sub> =10μAdc)	60	70	---	Vdc
V <sub>th(GS)</sub>	Gate-Threshold Voltage* (V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μAdc)	1.0	---	2.5	Vdc
I <sub>GSS</sub>	Gate-body Leakage* (V <sub>DS</sub> =0Vdc, V <sub>GS</sub> =±20Vdc)	---	---	±0.1	μAdc
I <sub>DSS</sub>	Zero Gate Voltage Drain Current* (V <sub>DS</sub> =60Vdc, V <sub>GS</sub> =0Vdc) (V <sub>DS</sub> =0Vdc, V <sub>GS</sub> =±20Vdc, T <sub>J</sub> =125°C)	---	---	1 500	μAdc
I <sub>D(ON)</sub>	On-state Drain Current* (V <sub>DS</sub> =7.5Vdc, V <sub>GS</sub> =10Vdc)	0.5	1.0	---	Adc
r <sub>DS(on)</sub>	Drain-Source On-Resistance* (V <sub>GS</sub> =5Vdc, I <sub>D</sub> =50mAdc) (V <sub>GS</sub> =10Vdc, I <sub>D</sub> =500mAdc)	---	---	3.0 2.0	Ω
g <sub>FS</sub>	Forward Tran Conductance* (V <sub>DS</sub> =10Vdc, I <sub>D</sub> =200mAdc)	80	---	---	ms
C <sub>ISS</sub>	Input Capacitance	---	---	50	pF
C <sub>OSS</sub>	Output Capacitance	---	---	25	
C <sub>RSS</sub>	Reverse Transfer Capacitance	---	---	5	

V<sub>DS</sub>=25Vdc, V<sub>GS</sub>=0Vdc, f=1MHz

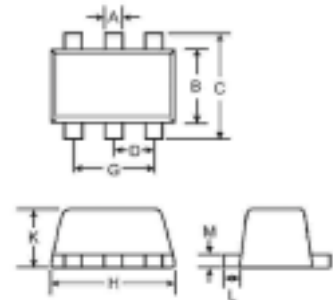
### Switching

t <sub>d(on)</sub>	Turn-on Time	V <sub>DD</sub> =30Vdc, V <sub>GEN</sub> =10Vdc	---	---	20	ns
t <sub>d(off)</sub>	Turn-off Time	R <sub>L</sub> =150Ω, I <sub>D</sub> =200mA, R <sub>G</sub> =25Ω	---	---	20	

\* Pulse test, pulse width ≅ 300 μ s, duty cycle ≅ 20%

## N-Channel MOSFET

### SOT-563



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.006	.011	0.15	0.30	
B	.043	.049	1.10	1.25	
C	.061	.067	1.55	1.70	
D	.020		0.50		
G	.035	.043	0.90	1.10	
H	.059	.067	1.50	1.70	
K	.022	.023	0.56	0.60	
L	.004	.011	0.10	0.30	
M	.004	.007	0.10	0.18	

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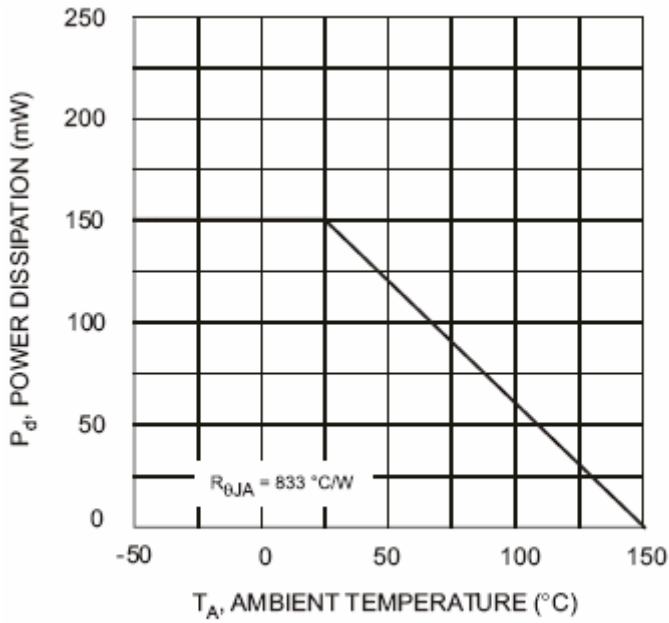
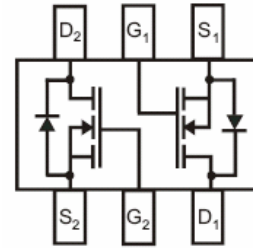


Fig. 1, Derating Curve - Total



Marking: KAS