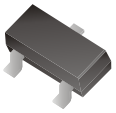
MOSFET

COMCHIP
SMD Diodes Specialist

2N7002W-G (N-Channel)

RoHS Device



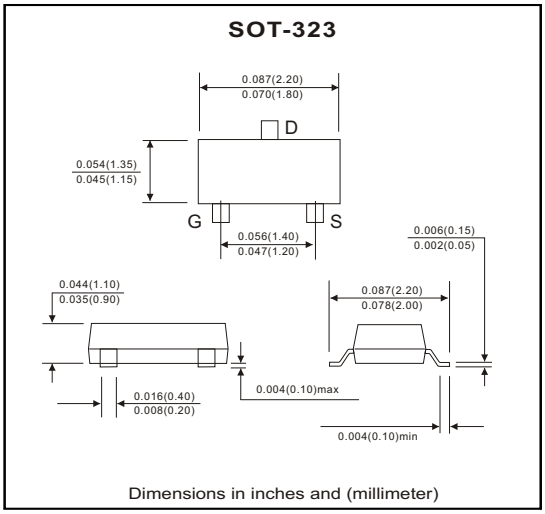
Features

-High density cell design for low $R_{DS(ON)}$.

-Voltage control small signal switch.

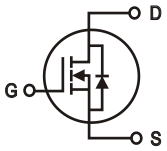
-Rugged and reliable.

-High saturation current capability.



Marking: K72

Equivalent Circuit



G : Gate
S : Source
D : Drain

Electrical Ratings (at T_A=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source voltage	V_{DS}	60	V
Drain current	I_D	115	mA
Power dissipation	P_D	225	mW
Junction and storage temperature range	T_J, T_{STG}	-55 to +150	°C

Electrical Characteristics (at T_A=25°C unless otherwise noted)

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Drain-Source breakdown voltage	V_{GS}=0V, I_D=10μA	$V_{BR(DSS)}$	60			V
	V_{GS}=0V, I_D=3mA		60			
Gate-Threshold voltage	V_{DS}=V_{GS}, I_D=250μA	$V_{th(GS)}$	1		2.5	V
Gate-body leakage	V_{DS}=0V, V_{GS}=±25V	I_{GSS}			±100	nA
Zero gate voltage drain current	V_{DS}=60V, V_{GS}=0V	I_{DSS}			1	μA
On-state drain current	V_{GS}=10V, V_{DS}=7V	$I_{D(ON)}$	500			mA
Drain-Source on resistance	V_{GS}=10V, I_D=500mA	$r_{DS(ON)}$			7.5	Ω
	V_{GS}=5V, I_D=50mA				7.5	
Forward trans conductance	V_{DS}=10V, I_D=200mA	g_{fs}	80			mS
Drain-source on-voltage	V_{GS}=10V, I_D=500mA	$V_{DS(ON)}$			3.75	V
	V_{GS}=5V, I_D=50mA				0.375	
Diode forward voltage	I_S=115mA, V_{GS}=0V	V_{SD}			1.2	V
Input capacitance	V_{DS}=25V, V_{GS}=0V, f=1MHz	C_{iss}			50	pF
Output capacitance		C_{oss}			25	
Reverse transfer capacitance		C_{rss}			5	
Turn-on time	V_{DD}=25V, R_L=50Ω, I_D=500mA, V_{GEN}=10V, R_G=25Ω	$t_{d(on)}$			20	nS
Turn-off time		$t_{d(off)}$			40	

RATING AND CHARACTERISTIC CURVES (2N7002W-G)

Fig.1 On-Region Characteristics

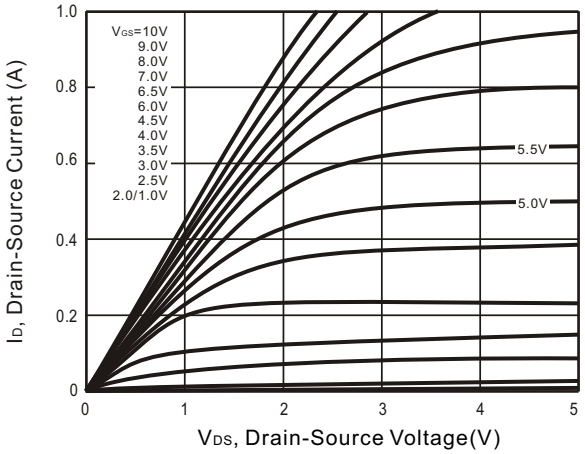


Fig.2 On-Resistance vs Drain Current

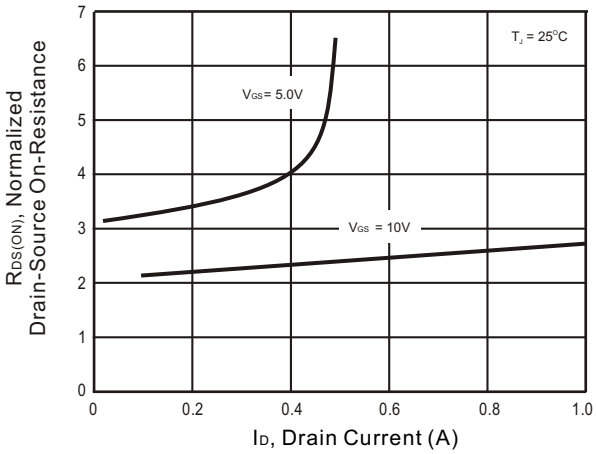


Fig.3 On-Resistance vs Junction Temperature

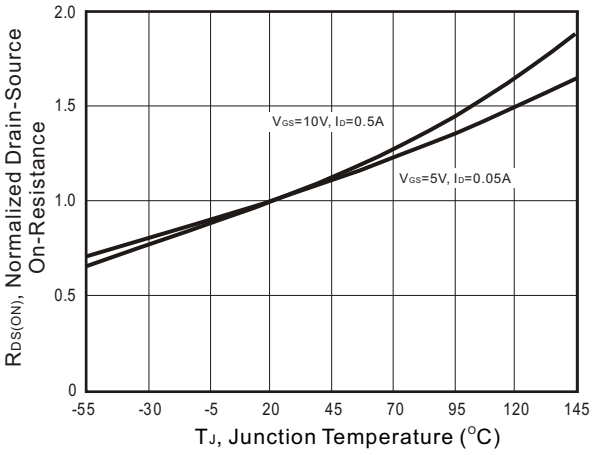


Fig.4 On-Resistance vs Gate-Source Voltage