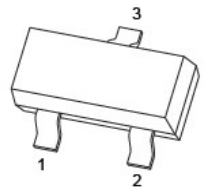
SOT-23 Plastic-Encapsulate MOSFET

WG7002

Features:

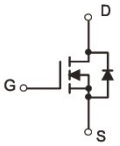
- ☐ **High density cell design for low RDS(ON)**
- ☐ **Voltage controlled small signal switch**
- ☐ **Rugged and reliable**
- ☐ **High saturation current capability**



1. GATE
2. SOURCE
3. DRAIN

RoHS COMPLIANT

Equivalent Circuit



Maximum Ratings & Thermal Characteristics (Ratings at 25℃ ambient temperature unless otherwise specified.)

Parameters	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	340	mA
Power Dissipation	P_D	350	mW
Junction Temperature	T_j	150	℃
Storage Temperature	Tstg	-50-+150	℃
Thermal Resistance From Junction to Ambient	$R_{\theta JA}$	357	℃/W

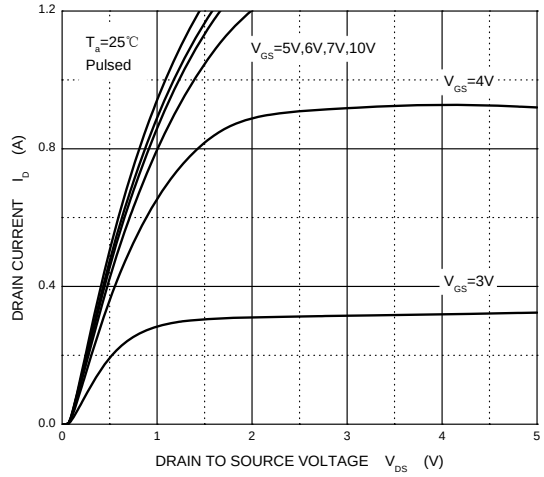
Electrical Characteristics (Ratings at 25℃ ambient temperature unless otherwise specified).

Parameter	Symbols	Test Condition	Limits			Unit
			Min	Typ	Max	
Drain-Source Breakdown Voltage	**V_{DS}**	V_{GS}=0V, I_D=250uA	60			V
Gate-Threshold voltage*	**$V_{th(GS)}$**	V_{DS}=V_{GS}, I_D=1mA	1	1.3	2.5	V
Gate-body Leakage	**I_{GSS1}**	V_{DS}=0V, V_{GS}=±20V			±10	uA
	I_{GSS}	V_{DS}=0V, V_{GS}=±10V			±200	nA
	I_{GSS}	V_{DS}=0V, V_{GS}=±5V			±100	nA
Zero Gate Voltage Drain current	**I_{DSS}**	V_{DS}=48V, V_{GS}=0V			1	uA
Drain-Source On-Resistance*	**$R_{DS(ON)}$**	V_{GS}=10V, I_D=500mA		0.9	5	Ω
		V_{GS}=4.5V, I_C=200mA		1.1	5.3	
Diode Forward voltage	**V_{SD}**	I_S=300mA, V_{GS}=0V			1.50	V
Input capacitance**	**Ciss**	V_{DS}=10V, V_{GS}=0V,f=1MHz			40	pF
Output capacitance**	**Coss**				30	
Reverse Transfer capacitance**	**Crss**				10	
SWITCHING TIME						
Turn-on Time**	**td(on)**	V_{DD}=50V, R_L=250Ω, V_{GS}=10V, R_{GS}=50Ω, R_G=50Ω			10	ns
Turn-off Time**	**td(off)**				15	
Reverse recovery Time	**trr**	V_{GS}=0V, I_S=300mA, V_R=25V, Di_S/dt=-100a/uS		30		ns
GATE-SOURCE ZENER DIODE						
Gate-Source Breakdown Voltage	**BV_{GSO}**	Igs=±1mA(Open Drain)	±21.5		±30	V

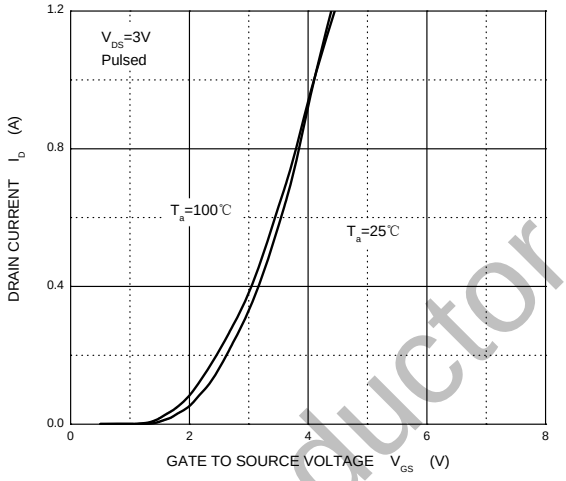
Notes: * Pulse Test: Pulse Width ≤300us, Duty Cycle≤2%.
** These parameters have on way to verify.

Typical characteristics

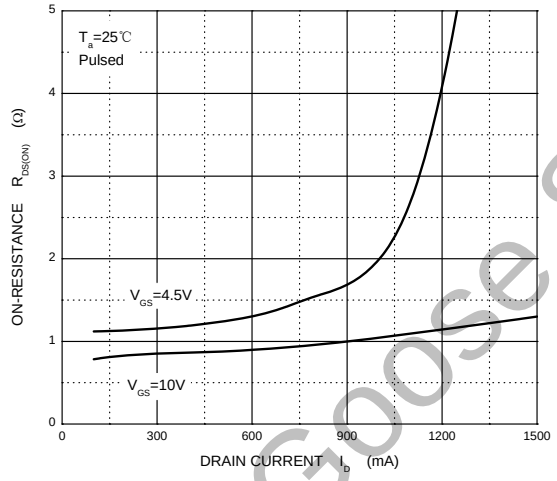
Output Characteristics



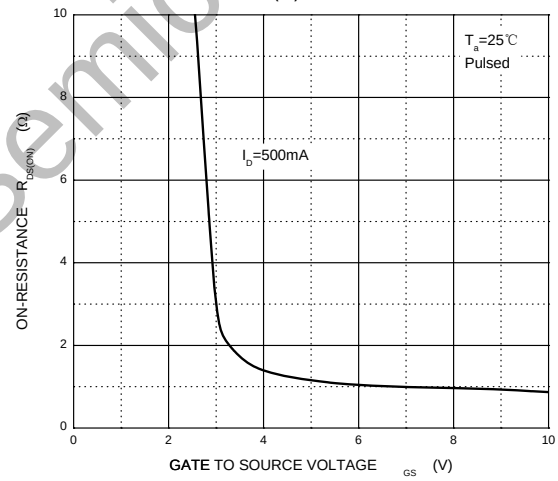
Transfer Characteristics



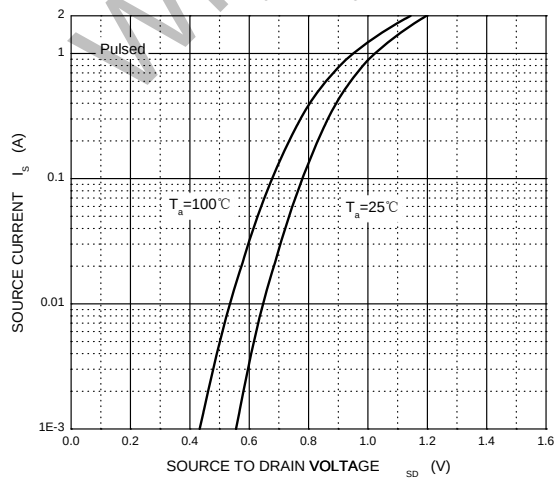
$R_{DS(ON)}$ —— I_D



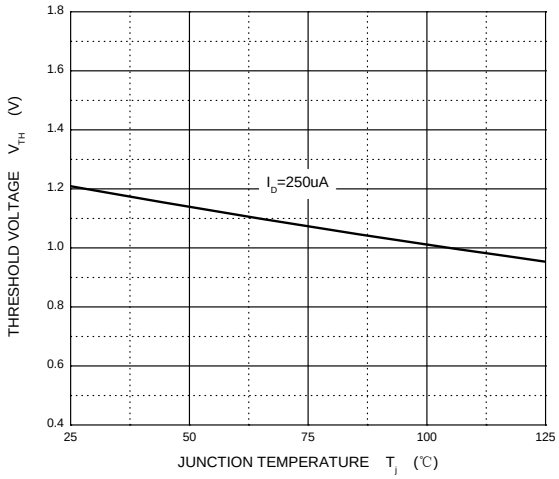
$R_{DS(ON)}$ —— V_{GS}



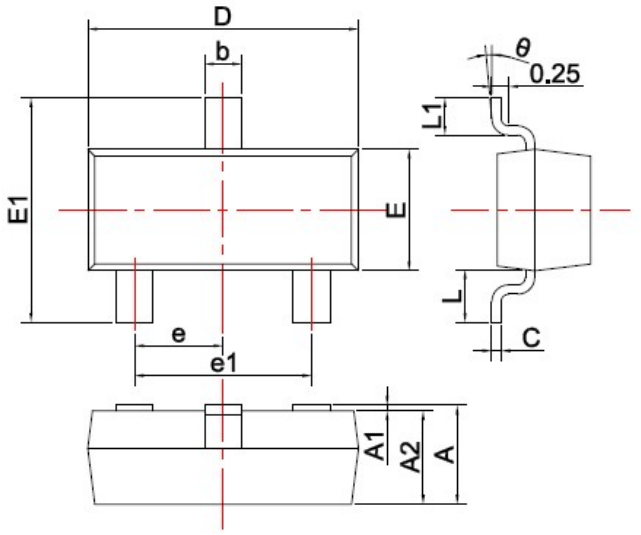
I_S —— V_{SD}



Threshold Voltage



SOT-23 PACKAGE OUTLINE Plastic surface mounted package

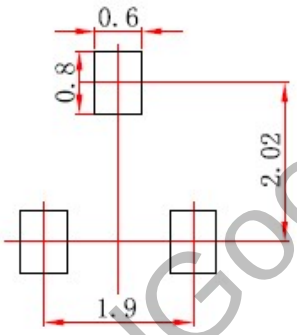


SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.500
θ	0°	8°

Unit: mm

Precautions: PCB Design

Recommended land dimensions for SOT-23 diode. Electrode patterns for PCBs



Note:
1.Controlling dimension:In millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.