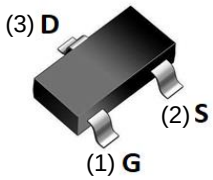
WG2312A

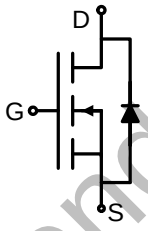
Features:

- ☐ Low Intrinsic Capacitances.
- ☐ Excellent Switching Characteristics.
- ☐ Extended Safe Operating Area.
- ☐ Unrivalled Gate Charge :Qg= 10nC (Typ.).
- ☐ BVDSS=20V,I_D=6.0A
- ☐ $R_{DS(on)}$: 16mΩ (Typ) @V_G=4.5V
- ☐ 100% Avalanche Tested

SOT-23

RoHS COMPLIANT





1:Gate (G)
2:Source (S)
3:Drain (D)

Schematic diagram

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Absolute Maximum Ratings (T_A=25℃unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	±8	V
Continuous Drain Current	I_D	6	A
Pulsed Drain Current (t=300μs)	I_{DM}	20	A
Continuous Source-Drain Diode Current	I_S	1.04	A
Power Dissipation	P_D	0.35	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	357	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	℃

Electrical Characteristics (T_A=25℃unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =250μA	20			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =20V,V_{GS} = 0V			1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±8V, V_{DS} = 0V			±0.1	μA
Gate threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =250μA	0.4	0.7	1.0	V
Drain-source on-resistance[a]	$R_{DS(on)}$	V_{GS} =4.5V, I_D =4.0A		16	22	mΩ
		V_{GS} =2.5V, I_D =3.0A		19	26	
Forward tranconductance[a]	g_{FS}	V_{DS} =10V, I_D =5A	6			S
Dynamic characteristics[b]						
Input Capacitance	C_{iss}	V_{DS} =10V,V_{GS} =0V,f=1MHz		865		pF
Output Capacitance	C_{oss}			105		
Reverse Transfer Capacitance	C_{rss}			55		
Gate resistance	Rg	f =1MHz	0.5		4.8	Ω
Switching Characteristics[b]						
Turn-on delay time	$t_{d(on)}$	V_{GEN}=5V,V_{DD}=10V, I_D =4A,R_G=1Ω, R_L=2.2Ω			10	ns
Turn-on rise time	t_r				20	
Turn-off delay time	$t_{d(off)}$				32	
Turn-off fall time	t_f				12	
Source-Drain Diode characteristics						
Diode Forward voltage	V_{DS}	V_{GS} =0V, I_S=4A		0.75	1.2	V

Notes:

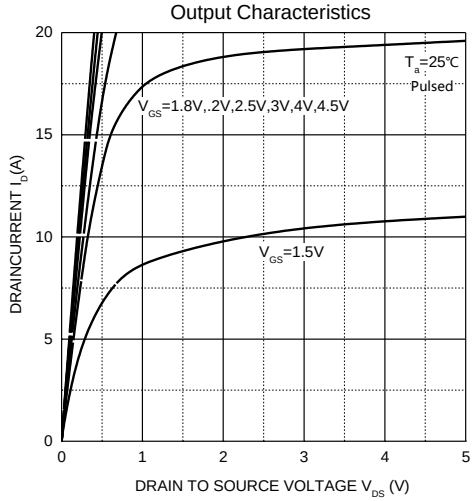
a. Pulse Test : pulse width ≤300μs, duty cycle ≤2%.

b. These parameters have no way to verify.

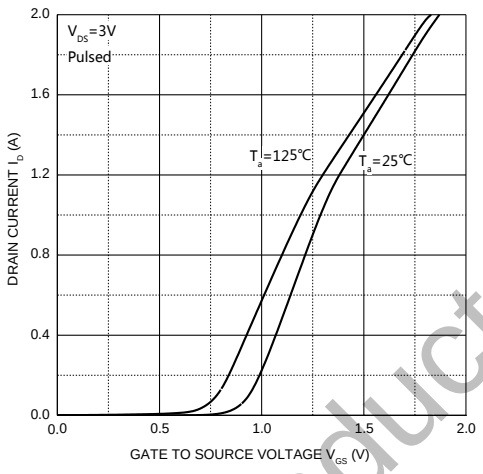
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Typical Characteristics

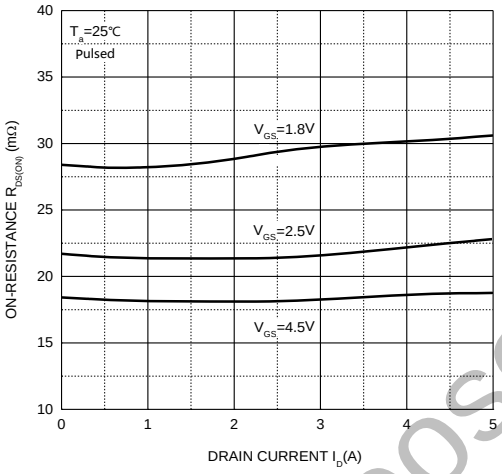
Output Characteristics



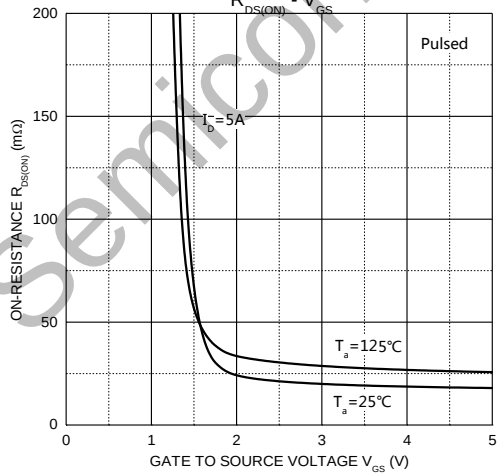
Transfer Characteristics



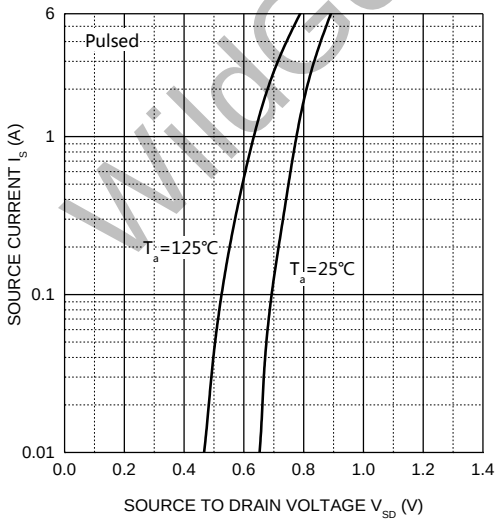
$R_{DS(ON)}$ – I_D



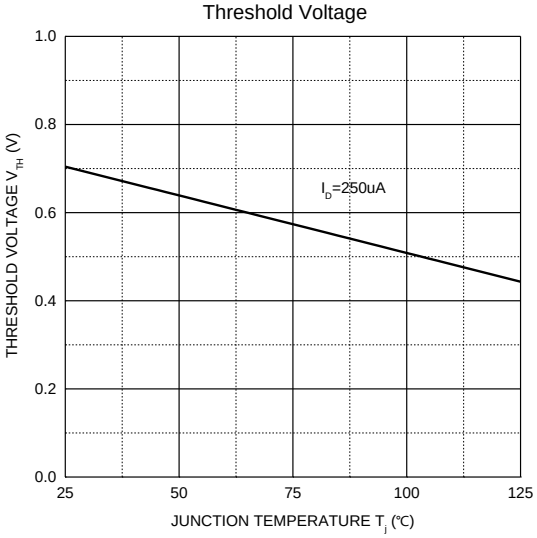
$R_{DS(ON)}$ - V_{GS}



I_S - V_{SD}



Threshold Voltage

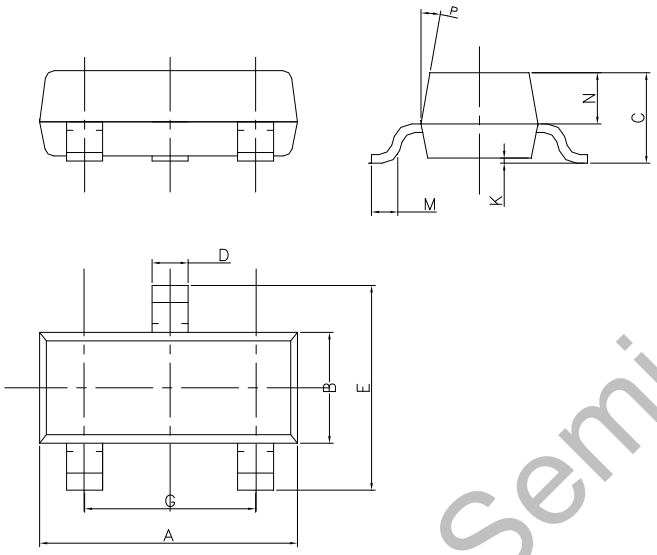


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Package Dimension

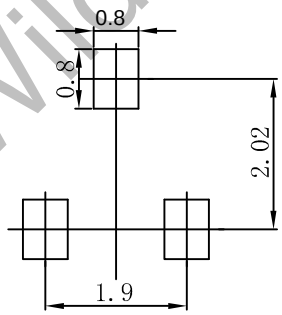
SOT-23

Unit: mm



DIM	MILLIMETERS
A	2.85~3.04
B	1.30±0.10
C	1.00±0.10
D	0.45±0.05
E	2.25~2.55
G	1.90±0.1
K	0.00−0.10
M	0.20 MIN
N	0.60±0.10
P	7±2°

SOT-23 Suggested Pad Layout



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

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