



WG2302
20V N-Channel MOSFET

Features:

- Low Intrinsic Capacitances.
- Excellent Switching Characteristics.
- Extended Safe Operating Area.
- Unrivalled Gate Charge :Qg= 10nC (Typ.).
- BVDSS=20V, I_D=4.0A
- R_{DS(on)} : 50mΩ (Max) @V_G=2.5V
- 100% Avalanche Tested

SOT-23 



MARKING: **A2SHB** Schematic diagram

Absolute Maximum Ratings (T_A=25°C unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V _{DS}	20	V
Gate-Source Voltage	V _{GS}	±12	V
Drain Current-Continuous	I _D	3.0	A
Drain Current-Pulsed ^(Note 1)	I _{DM}	10	A
Maximum Power Dissipation	P _D	1.0	W
Operating Junction and Storage Temperature Range	T _J , T _{STG}	-55 To 150	°C

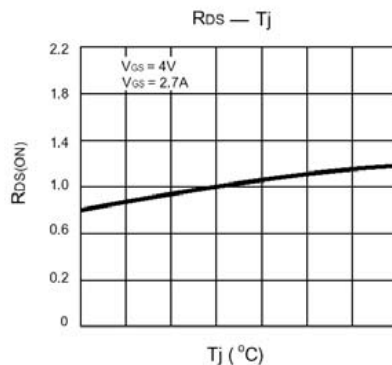
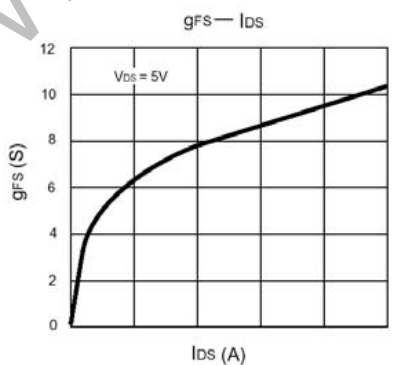
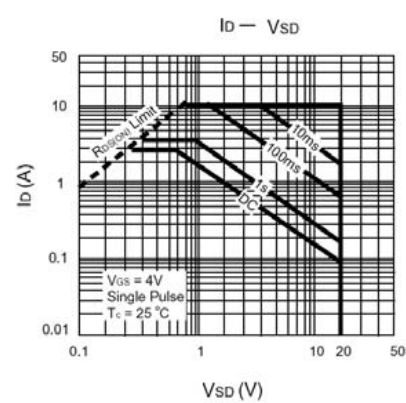
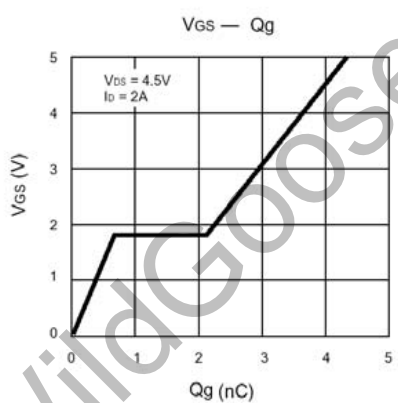
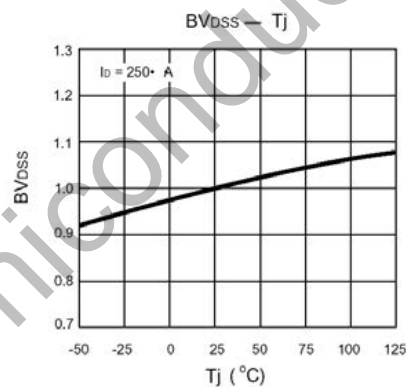
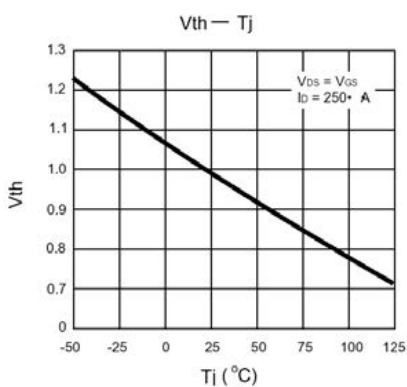
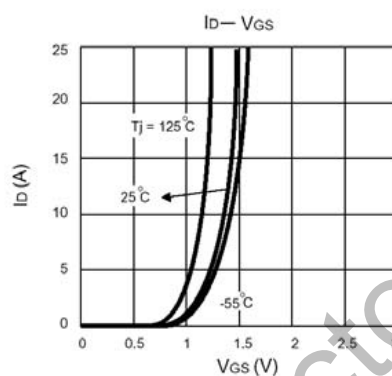
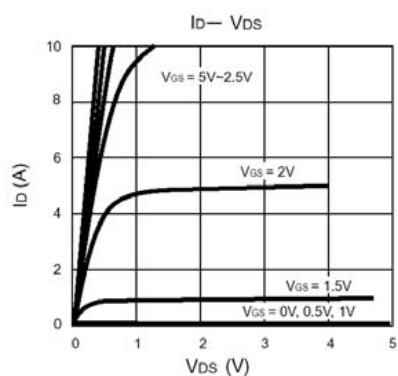
Thermal Characteristic

Thermal Resistance, Junction-to-Ambient ^(Note 2)	R _{θJA}	125	°C/W
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Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	20	-	-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=20V, V_{GS}=0V$	-	-	1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 12V, V_{DS}=0V$	-	-	± 100	nA
On Characteristics (Note 3)						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.45	0.65	1.0	V
Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS}=2.5V, I_D=3.5A$	-	37	50	$m\Omega$
		$V_{GS}=4.5V, I_D=4.5A$	-	30	40	$m\Omega$
Dynamic Characteristics (Note 4)						
Input Capacitance	C_{iss}	$V_{DS}=10V, V_{GS}=0V,$ $F=1.0MHz$	-	405	-	PF
Output Capacitance	C_{oss}		-	75	-	PF
Reverse Transfer Capacitance	C_{rss}		-	55	-	PF
Switching Characteristics (Note 4)						
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=10V, R_L=2.7\Omega$ $V_{GS}=4.5V, R_{GEN}=3\Omega$	-	11	-	nS
Turn-on Rise Time	t_r		-	35	-	nS
Turn-Off Delay Time	$t_{d(off)}$		-	30	-	nS
Turn-Off Fall Time	t_f	$V_{DS}=10V, I_D=3.0A,$ $V_{GS}=2.5V$	-	10	-	nS
Total Gate Charge	Q_g		-	3.3	-	nC
Gate-Source Charge	Q_{gs}		-	0.7	-	nC
Gate-Drain Charge	Q_{gd}	-	1.3	-	nC	
Drain-Source Diode Characteristics						
Diode Forward Voltage (Note 3)	V_{SD}	$V_{GS}=0V, I_S=4.0A$	-	-	1.2	V
Diode Forward Current (Note 2)	I_S		-	-	4.0	A

Typical Characteristics



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