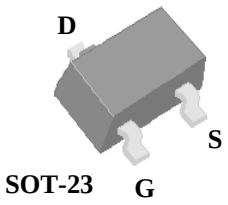
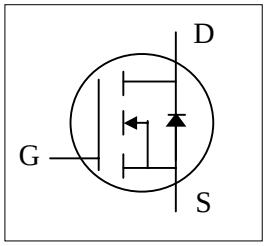
AP2302AGN-HF

- ▼ **Capable of 2.5V gate drive**
- ▼ **Lower Gate Charge**
- ▼ **Surface mount package**
- ▼ **RoHS Compliant & Halogen-Free**



SOT-23

BV_{DSS}	20V
$R_{DS(ON)}$	42mΩ
I_D	4.6A



Description

Advanced Power MOSFETs utilized advanced processing techniques to achieve the lowest possible on-resistance, extremely efficient and cost-effectiveness device.

The SOT-23 package is widely used for all commercial-industrial applications.

Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	20	V
V_{GS}	Gate-Source Voltage	±8	V
I_D@T_A=25℃	Continuous Drain Current[3], V_{GS} @ 4.5V	4.6	A
I_D@T_A=70℃	Continuous Drain Current[3], V_{GS} @ 4.5V	3.7	A
I_{DM}	Pulsed Drain Current[1]	20	A
P_D@T_A=25℃	Total Power Dissipation	1.38	W
T_{STG}	Storage Temperature Range	-55 to 150	℃
T_J	Operating Junction Temperature Range	-55 to 150	℃

Thermal Data

Symbol	Parameter	Value	Unit
Rthj-a	Maximum Thermal Resistance, Junction-ambient[3]	90	℃/W

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Electrical Characteristics@T_j=25°C(unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V, I_D=250uA	20	-	-	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance[2]	V_{GS}=4.5V, I_D=4A	-	-	42	mΩ
		V_{GS}=2.5V, I_D=3A	-	-	60	mΩ
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=250uA	0.3	-	1.2	V
g_{fs}	Forward Transconductance	V_{DS}=5V, I_D=4A	-	14	-	S
I_{DSS}	Drain-Source Leakage Current	V_{DS}=16V, V_{GS}=0V	-	-	10	uA
I_{GSS}	Gate-Source Leakage	V_{GS}=±8V, V_{DS}=0V	-	-	±100	nA
Q_g	Total Gate Charge[2]	I_D=4A	-	6.5	10.5	nC
Q_{gs}	Gate-Source Charge	V_{DS}=10V	-	1	-	nC
Q_{gd}	Gate-Drain ("Miller") Charge	V_{GS}=4.5V	-	2.5	-	nC
$t_{d(on)}$	Turn-on Delay Time[2]	V_{DS}=10V	-	9	-	ns
t_r	Rise Time	I_D=1A	-	12	-	ns
$t_{d(off)}$	Turn-off Delay Time	R_G=3.3Ω	-	16	-	ns
t_f	Fall Time	V_{GS}=5V	-	5	-	ns
C_{iss}	Input Capacitance	V_{GS}=0V	-	300	480	pF
C_{oss}	Output Capacitance	V_{DS}=20V	-	85	-	pF
C_{rss}	Reverse Transfer Capacitance	f=1.0MHz	-	80	-	pF
R_g	Gate Resistance	f=1.0MHz	-	2	-	Ω

Source-Drain Diode

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
V_{SD}	Forward On Voltage[2]	I_S=1.2A, V_{GS}=0V	-	-	1.2	V
trr	Reverse Recovery Time[2]	I_S=4A, V_{GS}=0V,	-	20	-	ns
Qrr	Reverse Recovery Charge	dI/dt=100A/μs	-	10	-	nC