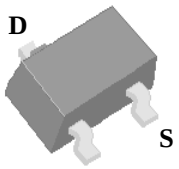
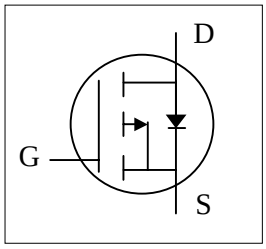
AP2301AGN-HF

- ▼ **Simple Drive Requirement**
- ▼ **Small Package Outline**
- ▼ **Surface Mount Device**
- ▼ **RoHS Compliant & Halogen-Free**



SOT-23

BV_{DSS}	-20V
$R_{DS(ON)}$	97mΩ
I_D	- 3.3A



Description

Advanced Power MOSFETs from APEC provide the designer with the best combination of fast switching,low on-resistance and cost-effectiveness.

The SOT-23 package is widely preferred for commercial-industrial surface mount applications and suited for low voltage applications such as DC/DC converters.

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	-3.3	A
I_D@T_A=70℃	Continuous Drain Current[3], V_{GS} @ 4.5V	-2.7	A
I_{DM}	Pulsed Drain Current[1]	-15	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=-3A	-	-	97	mΩ
		V_{GS}=-2.5V, I_D=-2.6A	-	-	130	mΩ
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_D=-250uA	-0.3	-	-1	V
g_{fs}	Forward Transconductance	V_{DS}=-5V, I_D=-3A	-	10	-	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	I_D=-3A	-	8.5	21	nC
Q_{gs}	Gate-Source Charge	V_{DS}=-10V	-	1.2	-	nC
Q_{gd}	Gate-Drain ("Miller") Charge	V_{GS}=-4.5V	-	3	-	nC
$t_{d(on)}$	Turn-on Delay Time	V_{DS}=-10V	-	10	-	ns
t_r	Rise Time	I_D=-1A	-	20	-	ns
$t_{d(off)}$	Turn-off Delay Time	R_G=3.3Ω	-	27	-	ns
t_f	Fall Time	V_{GS}=-5V	-	22	-	ns
C_{iss}	Input Capacitance	V_{GS}=0V	-	660	1470	pF
C_{oss}	Output Capacitance	V_{DS}=-10V	-	135		pF
C_{rss}	Reverse Transfer Capacitance	f=1.0MHz	-	120	-	pF
R_g	Gate Resistance	f=1.0MHz	-	7.2	-	Ω

Source-Drain Diode

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
V_{SD}	Forward On Voltage[2]	I_S=-0.8A, V_{GS}=0V	-	-	-1.2	V
t_{rr}	Reverse Recovery Time	I_S=-3A, V_{GS}=0V,	-	24	-	ns
Q_{rr}	Reverse Recovery Charge	dI/dt=100A/μs	-	11	-	nC