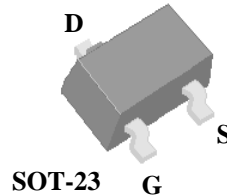


AP2321GN-HF

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

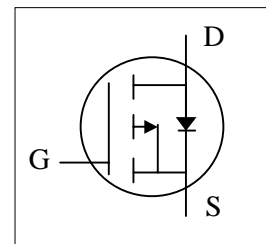


BV_{DSS}	-40V
$R_{DS(ON)}$	90mΩ
I_D	-3.1A

Description

Advanced Power MOSFETs from TY 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	-40	V
V_{GS}	Gate-Source Voltage	±20	V
$I_D @ T_A=25^\circ\text{C}$	Continuous Drain Current ³	-3.1	A
$I_D @ T_A=70^\circ\text{C}$	Continuous Drain Current ³	-2.5	A
I_{DM}	Pulsed Drain Current ¹	-12	A
$P_D @ T_A=25^\circ\text{C}$	Total Power Dissipation	1.38	W
T_{STG}	Storage Temperature Range	-55 to 150	°C
T_J	Operating Junction Temperature Range	-55 to 150	°C

Thermal Data

Symbol	Parameter	Value	Unit
Rthj-amb	Maximum Thermal Resistance, Junction-ambient ³	90	°C/W

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	-40	-	-	V
R _{DS(ON)}	Static Drain-Source On-Resistance ²	V _{GS} =-10V, I _D =-3A	-	-	90	mΩ
		V _{GS} =-4.5V, I _D =-2A	-	-	125	mΩ
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =-250uA	-1	-	-3	V
g _{fs}	Forward Transconductance	V _{DS} =-10V, I _D =-3A	-	7.5	-	S
I _{DSS}	Drain-Source Leakage Current	V _{DS} =-32V, V _{GS} =0V	-	-	-1	uA
I _{GSS}	Gate-Source Leakage	V _{GS} =±20V, V _{DS} =0V	-	-	±100	nA
Q _g	Total Gate Charge ²	I _D =-3A	-	6	9.6	nC
Q _{gs}	Gate-Source Charge	V _{DS} =-20V	-	1.5	-	nC
Q _{gd}	Gate-Drain ("Miller") Charge	V _{GS} =-4.5V	-	3	-	nC
t _{d(on)}	Turn-on Delay Time ²	V _{DS} =-20V	-	9	-	ns
t _r	Rise Time	I _D =-1A	-	7	-	ns
t _{d(off)}	Turn-off Delay Time	R _G =3.3Ω	-	22	-	ns
t _f	Fall Time	V _{GS} =-10V	-	8	-	ns
C _{iss}	Input Capacitance	V _{GS} =0V	-	550	880	pF
C _{oss}	Output Capacitance	V _{DS} =-15V	-	75	-	pF
C _{rss}	Reverse Transfer Capacitance	f=1.0MHz	-	65	-	pF

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
t _{rr}	Reverse Recovery Time ²	I _S =-3A, V _{GS} =0V,	-	18	-	ns
Q _{rr}	Reverse Recovery Charge	dI/dt=100A/μs	-	14	-	nC

Notes:

- 1.Pulse width limited by Max. junction temperature.
- 2.Pulse test
- 3.Surface mounted on 1 in² copper pad of FR4 board ; 270°C/W when mounted on min. copper pad.