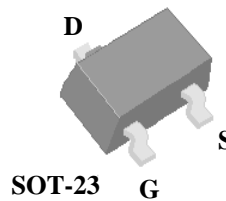


## AP2322GN-HF

- ▼ Capable of 1.8V gate drive
- ▼ Simple Drive Requirement
- ▼ Surface mount package
- ▼ RoHS Compliant & Halogen-Free

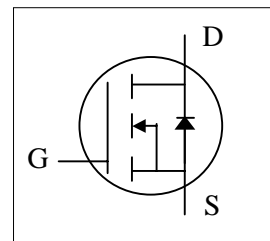


$BV_{DSS}$	20V
$R_{DS(ON)}$	90m $\Omega$
$I_D$	2.5A

### 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 commercial-industrial applications.



### Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
$V_{DS}$	Drain-Source Voltage	20	V
$V_{GS}$	Gate-Source Voltage	$\pm 8$	V
$I_D@T_A=25^\circ\text{C}$	Continuous Drain Current <sup>3</sup> , $V_{GS}$ @ 4.5V	2.5	A
$I_D@T_A=70^\circ\text{C}$	Continuous Drain Current <sup>3</sup> , $V_{GS}$ @ 4.5V	2.0	A
$I_{DM}$	Pulsed Drain Current <sup>1</sup>	10	A
$P_D@T_A=25^\circ\text{C}$	Total Power Dissipation	0.833	W
$T_{STG}$	Storage Temperature Range	-55 to 150	$^\circ\text{C}$
$T_J$	Operating Junction Temperature Range	-55 to 150	$^\circ\text{C}$

### Thermal Data

Symbol	Parameter	Value	Unit
$R_{thj-a}$	Maximum Thermal Resistance, Junction-ambient <sup>3</sup>	150	$^\circ\text{C}/\text{W}$

## AP2322GN-HF

Electrical Characteristics @ $T_j=25^{\circ}\text{C}$  (unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
$BV_{DSS}$	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	20	-	-	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance <sup>2</sup>	$V_{GS}=4.5V, I_D=1.6A$	-	-	90	m $\Omega$
		$V_{GS}=2.5V, I_D=1A$	-	-	120	m $\Omega$
		$V_{GS}=1.8V, I_D=0.3A$	-	-	150	m $\Omega$
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=1mA$	0.25	-	1	V
$g_{fs}$	Forward Transconductance	$V_{DS}=5V, I_D=2A$	-	2	-	S
$I_{DSS}$	Drain-Source Leakage Current	$V_{DS}=20V, V_{GS}=0V$	-	-	1	$\mu A$
$I_{GSS}$	Gate-Source Leakage	$V_{GS}=\pm 8V, V_{DS}=0V$	-	-	$\pm 100$	nA
$Q_g$	Total Gate Charge <sup>2</sup>	$I_D=2.2A$	-	7	11	nC
$Q_{gs}$	Gate-Source Charge	$V_{DS}=16V$	-	0.7	-	nC
$Q_{gd}$	Gate-Drain ("Miller") Charge	$V_{GS}=4.5V$	-	2.5	-	nC
$t_{d(on)}$	Turn-on Delay Time <sup>2</sup>	$V_{DS}=10V$	-	6	-	ns
$t_r$	Rise Time	$I_D=1A$	-	12	-	ns
$t_{d(off)}$	Turn-off Delay Time	$R_G=3.3\Omega$	-	16	-	ns
$t_f$	Fall Time	$V_{GS}=5V$	-	4	-	ns
$C_{iss}$	Input Capacitance	$V_{GS}=0V$	-	350	560	pF
$C_{oss}$	Output Capacitance	$V_{DS}=20V$	-	55	-	pF
$C_{riss}$	Reverse Transfer Capacitance	$f=1.0MHz$	-	48	-	pF
$R_g$	Gate Resistance	$f=1.0MHz$	-	3.2	4.8	$\Omega$

## Source-Drain Diode

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
$V_{SD}$	Forward On Voltage <sup>2</sup>	$I_S=0.7A, V_{GS}=0V$	-	-	1.2	V
$t_{rr}$	Reverse Recovery Time <sup>2</sup>	$I_S=2A, V_{GS}=0V,$	-	20	-	ns
$Q_{rr}$	Reverse Recovery Charge	$di/dt=100A/\mu s$	-	13	-	nC

## Notes:

1. Pulse width limited by Max. junction temperature.

2. Pulse test

3. Surface mounted on 1 in<sup>2</sup> copper pad of FR4 board,  $t \leq 10\text{sec}$ ; 360 °C/W when mounted on Min. copper pad.