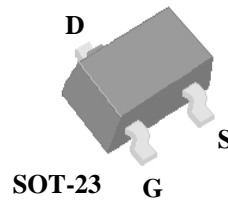


AP2320GN

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

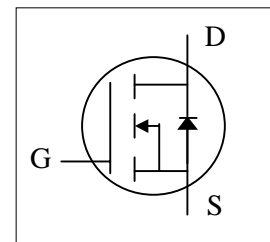


BV_{DSS}	100V
$R_{DS(ON)}$	5 Ω
I_D	0.25A

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	100	V
V_{GS}	Gate-Source Voltage	± 20	V
$I_D @ T_A = 25^\circ C$	Continuous Drain Current ³ , V_{GS} @ 10V	0.25	A
$I_D @ T_A = 70^\circ C$	Continuous Drain Current ³ , V_{GS} @ 10V	0.2	A
I_{DM}	Pulsed Drain Current ¹	1	A
$P_D @ T_A = 25^\circ C$	Total Power Dissipation	0.7	W
	Linear Derating Factor	0.005	W/ $^\circ C$
T_{STG}	Storage Temperature Range	-55 to 150	$^\circ C$
T_J	Operating Junction Temperature Range	-55 to 150	$^\circ C$

Thermal Data

Symbol	Parameter	Value	Unit
Rthj-a	Maximum Thermal Resistance, Junction-ambient ³	180	$^\circ C/W$

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	$V_{GS}=0V, I_D=250\mu A$	100	-	-	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=10V, I_D=0.25A$	-	-	5	Ω
		$V_{GS}=4.5V, I_D=0.2A$	-	-	9	Ω
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	1	-	3	V
g_{fs}	Forward Transconductance	$V_{DS}=10V, I_D=0.2A$	-	0.2	-	S
I_{DSS}	Drain-Source Leakage Current	$V_{DS}=100V, V_{GS}=0V$	-	-	10	μA
I_{GSS}	Gate-Source Leakage	$V_{GS}=\pm 20V, V_{DS}=0V$	-	-	± 100	nA
Q_g	Total Gate Charge ²	$I_D=0.4A$	-	2	3.2	nC
Q_{gs}	Gate-Source Charge	$V_{DS}=80V$	-	0.5	-	nC
Q_{gd}	Gate-Drain ("Miller") Charge	$V_{GS}=10V$	-	0.5	-	nC
$t_{d(on)}$	Turn-on Delay Time ²	$V_{DS}=50V$	-	3	-	ns
t_r	Rise Time	$I_D=0.4A$	-	7	-	ns
$t_{d(off)}$	Turn-off Delay Time	$R_G=3.3\Omega$	-	9.5	-	ns
t_f	Fall Time	$V_{GS}=10V$	-	4.5	-	ns
C_{iss}	Input Capacitance	$V_{GS}=0V$	-	32	51	pF
C_{oss}	Output Capacitance	$V_{DS}=25V$	-	9.5	-	pF
C_{rss}	Reverse Transfer Capacitance	$f=1.0\text{MHz}$	-	6	-	pF

Source-Drain Diode

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
V_{SD}	Forward On Voltage ²	$I_S=0.4A, V_{GS}=0V$	-	-	1.5	V
t_{rr}	Reverse Recovery Time	$I_S=1A, V_{GS}=0V,$	-	27	-	ns
Q_{rr}	Reverse Recovery Charge	$dI/dt=100A/\mu s$	-	28	-	nC

Notes:

1. Pulse width limited by Max. junction temperature.
2. Pulse test
3. Surface mounted on 1 in² copper pad of FR4 board ;400°C/W when mounted on min. copper pad.