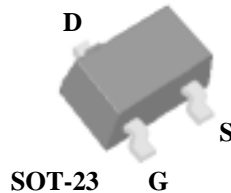


AP2318GEN

- ▼ Capable of 2.5V gate drive
- ▼ Small outline package
- ▼ RoHS Compliant

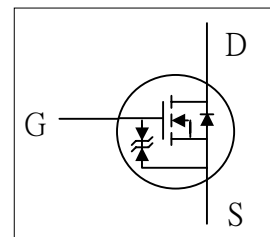


BV_{DSS}	30V
$R_{DS(ON)}$	720m Ω
I_D	1A

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 universally used for all commercial-industrial applications.



Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
V_{DS}	Drain-Source Voltage	30	V
V_{GS}	Gate-Source Voltage	± 16	V
$I_D @ T_A = 25^\circ\text{C}$	Continuous Drain Current ³ , V_{GS} @ 4.5V	1	A
$I_D @ T_A = 70^\circ\text{C}$	Continuous Drain Current ³ , V_{GS} @ 4.5V	0.8	A
I_{DM}	Pulsed Drain Current ^{1,2}	2	A
$P_D @ T_A = 25^\circ\text{C}$	Total Power Dissipation	1.38	W
	Linear Derating Factor	0.01	W/ $^\circ\text{C}$
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
Rthj-a	Thermal Resistance Junction-ambient ³ Max.	90	$^\circ\text{C}/\text{W}$

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	$V_{GS}=0V, I_D=250\mu A$	30	-	-	V
$\Delta BV_{DSS}/\Delta T_j$	Breakdown Voltage Temperature Coefficient	Reference to 25°C , $I_D=1\text{mA}$	-	0.04	-	$V/^{\circ}\text{C}$
$R_{DS(ON)}$	Static Drain-Source On-Resistance	$V_{GS}=4V, I_D=500\text{mA}$	-	-	720	$\text{m}\Omega$
		$V_{GS}=2.5V, I_D=200\text{mA}$	-	-	1200	$\text{m}\Omega$
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	0.4	-	1.3	V
g_{fs}	Forward Transconductance	$V_{DS}=4V, I_D=500\text{mA}$	-	725	-	mS
I_{DSS}	Drain-Source Leakage Current ($T_j=25^{\circ}\text{C}$)	$V_{DS}=30V, V_{GS}=0V$	-	-	-1	μA
	Drain-Source Leakage Current ($T_j=70^{\circ}\text{C}$)	$V_{DS}=24V, V_{GS}=0V$	-	-	-25	μA
I_{GSS}	Gate-Source Leakage	$V_{GS}=\pm 16V$	-	-	± 30	μA
Q_g	Total Gate Charge ²	$I_D=1A$	-	1.1	1.8	nC
Q_{gs}	Gate-Source Charge	$V_{DS}=25V$	-	0.4	-	nC
Q_{gd}	Gate-Drain ("Miller") Charge	$V_{GS}=4.5V$	-	0.4	-	nC
$t_{d(on)}$	Turn-on Delay Time ²	$V_{DS}=15V$	-	17	-	ns
t_r	Rise Time	$I_D=1A$	-	44	-	ns
$t_{d(off)}$	Turn-off Delay Time	$R_G=3.3\Omega, V_{GS}=5V$	-	45	-	ns
t_f	Fall Time	$R_D=15\Omega$	-	55	-	ns
C_{iss}	Input Capacitance	$V_{GS}=0V$	-	30	48	pF
C_{oss}	Output Capacitance	$V_{DS}=25V$	-	12	-	pF
C_{riss}	Reverse Transfer Capacitance	$f=1.0\text{MHz}$	-	11	-	pF

Source-Drain Diode

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
V_{SD}	Forward On Voltage ²	$I_S=1A, V_{GS}=0V$	-	-	1.3	V

Notes:

1. Pulse width limited by Max. junction temperature.
2. Pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$.
3. Surface mounted on 1 in^2 copper pad of FR4 board; 270°C/W when mounted on min. copper pad.