

• General Description

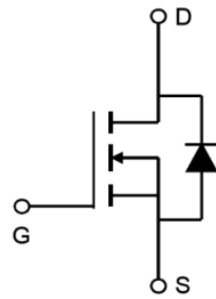
AP3410A combines advanced MOSFET technology with a low resistance package to provide extremely low $R_{DS(ON)}$. This device is most suitable to load-switch or PWM applications.

• Applications

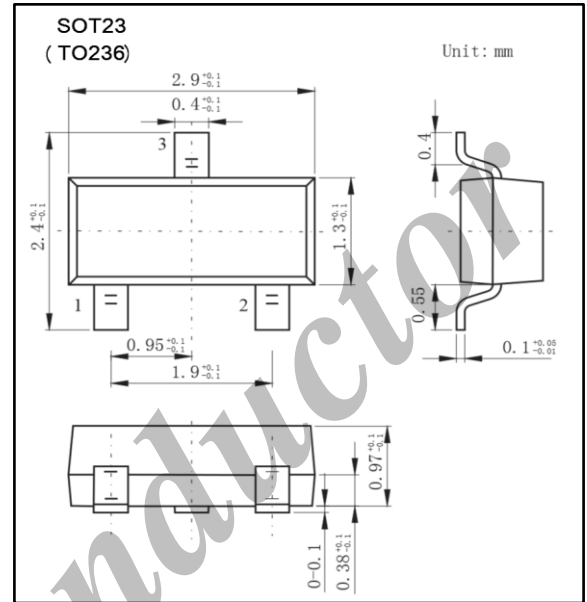
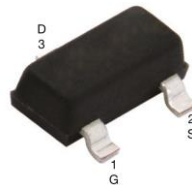
- DC/DC converter for portable devices
- Load switch

• Product Summary

V_{DS}	30V
I_D (at $V_{GS} = 10V$)	5.8A
$R_{DS(ON)}$ (at $V_{GS} = 10V$)	< 28m Ω
$R_{DS(ON)}$ (at $V_{GS} = 4.5V$)	< 33m Ω
$R_{DS(ON)}$ (at $V_{GS} = 2.5V$)	< 42m Ω
$R_{DS(ON)}$ (at $V_{GS} = 1.8V$)	< 72m Ω



Top View



• Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit	
Drain-Source Voltage	V_{DS}	30	V	
Gate-Source Voltage	V_{GS}	± 12		
Continuous Drain Current	I_D	$T_A = 25^\circ\text{C}$	5.8	A
		$T_A = 70^\circ\text{C}$	4.9	
Pulsed Drain Current *	I_{DM}	30		
Power Dissipation	P_D	$T_A = 25^\circ\text{C}$	1.4	W
		$T_A = 70^\circ\text{C}$	1	
Thermal Resistance. Junction- to-Ambient	$R_{\theta JA}$	$t \leq 10s$	90	$^\circ\text{C}/\text{W}$
		Steady State	125	
Thermal Resistance. Junction- to-Lead (Steady State)	$R_{\theta JL}$	60		
Junction Temperature	T_J	150	$^\circ\text{C}$	
Storage Temperature Range	T_{STG}	-55 to 150		

* Repetitive rating, pulse width limited by junction temperature.

• **Electrical Characteristics Ta = 25°C**

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	$I_D=250\mu A, V_{GS}=0V$	30			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=24V, V_{GS}=0V$			1	μA
		$V_{DS}=24V, V_{GS}=0V, T_J=55^\circ C$			5	
Gate-Body leakage current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 12V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.5		1	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V, I_D=5.8A$			28	m Ω
		$V_{GS}=10V, I_D=5.8A, T_J=125^\circ C$			39	
		$V_{GS}=4.5V, I_D=5A$			33	
		$V_{GS}=2.5V, I_D=4A$			42	
		$V_{GS}=1.8V, I_D=3A$			72	
On State Drain Current	$I_{D(on)}$	$V_{GS}=4.5V, V_{DS}=5V$	30			A
Forward Transconductance	g_{FS}	$V_{DS}=5V, I_D=3.6A$	12	17		S
Input Capacitance	C_{iss}	$V_{GS}=0V, V_{DS}=15V, f=1MHz$		767		pF
Output Capacitance	C_{oss}			111		
Reverse Transfer Capacitance	C_{rss}			82		
Gate Resistance	R_g	$V_{GS}=0V, V_{DS}=0V, f=1MHz$		1.3		Ω
Total Gate Charge	Q_g	$V_{GS}=4.5V, V_{DS}=15V, I_D=5.8A$		10		nC
Gate Source Charge	Q_{gs}			1.2		
Gate Drain Charge	Q_{gd}			3.1		
Turn-On Delay Time	$t_{D(on)}$	$V_{GS}=10V, V_{DS}=15V, R_L=2.7\Omega, R_{GEN}=6\Omega$		5		ns
Turn-On Rise Time	t_r			5.5		
Turn-Off Delay Time	$t_{D(off)}$			39		
Turn-Off Fall Time	t_f			4.7		
Body Diode Reverse Recovery Time	t_{rr}			15		
Body Diode Reverse Recovery Charge	Q_{rr}	$I_F=5A, d_i/d_t=100A/\mu s$		7.1		nC
Maximum Body-Diode Continuous Current	I_S				2.5	A
Diode Forward Voltage	V_{SD}	$I_S=1A, V_{GS}=0V$			1	V

• **Ordering Information**

Ordering Part Number	Package	MOQ
AP3410A	SOT23 (T0236)	3,000 pcs / reel

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