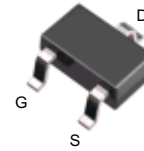


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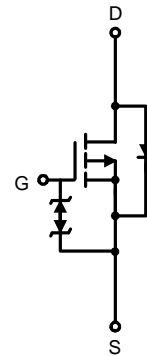
Features

- 20V/-2.8A
- $R_{DS(ON)} = 56m\Omega$ (typ.) @ $V_{GS} = -4.5V$
- $R_{DS(ON)} = 85m\Omega$ (typ.) @ $V_{GS} = -2.5V$
- $R_{DS(ON)} = 106m\Omega$ (typ.) @ $V_{GS} = -1.8V$
- Super High Dense Cell Design
- Reliable and Rugged

Pin Description



SOT-23



P Channel MOSFET

Applications

- Power Management in Notebook Computer, Portable Equipment and Battery Powered Systems.

Ordering and Marking Information

<p>APM2301CA □□-□□□</p> <ul style="list-style-type: none"> □□□ : Lead Free Code □□ : Handling Code □ : Temp. Range □ : Package Code 	<p>Package Code A : SOT-23</p> <p>Operating Junction Temp. Range C : -55 to 150 °C</p> <p>Handling Code TR : Tape & Reel</p> <p>Lead Free Code L : Lead Free Device Blank : Original Device</p>
<p>APM2301CA: C01X</p>	<p>XXXXX - Date Code</p>

Note: TY lead-free products contain molding compounds/die attach materials and 100% matte tin plate termination finish; which are fully compliant with RoHS and compatible with both SnPb and lead-free soldering operations. TY lead-free products meet or exceed the lead-free requirements of IPC/JEDEC J STD-020C for MSL classification at lead-free peak reflow temperature.



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Absolute Maximum Ratings (T_A = 25°C Unless Otherwise Noted)

Symbol	Parameter	Rating	Unit	
V _{DSS}	Drain-Source Voltage	-20	V	
V _{GSS}	Gate-Source Voltage	±12		
I _D [*]	Continuous Drain Current	-2.8	A	
I _{DM} [*]	300µs Pulsed Drain Current			-12
I _S [*]	Diode Continuous Forward Current	-1.3	A	
T _J	Maximum Junction Temperature	150	°C	
T _{STG}	Storage Temperature Range	-55 to 150		
P _D [*]	Maximum Power Dissipation	T _A =25°C	0.83	W
		T _A =100°C	0.3	
R _{θJA} [*]	Thermal Resistance-Junction to Ambient	150	°C/W	

Notes: *Surface Mounted on 1in² pad area, t ≤ 10sec.

Electrical Characteristics (T_A = 25°C Unless Otherwise Noted)

Symbol	Parameter	Test Condition	APM2301CA			Unit
			Min.	Typ.	Max.	
Static Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _{DS} =250µA	-20			V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-16V, V _{GS} =0V T _J =85°C			-1	µA
					-30	
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS} , I _{DS} =-250µA	-0.5	-0.75	-1	V
I _{GSS}	Gate Leakage Current	V _{GS} =±12V, V _{DS} =0V			±10	µA
R _{DS(ON)} ^a	Drain-Source On-State Resistance	V _{GS} =-4.5V, I _{DS} =-2.8A		56	70	mΩ
		V _{GS} =-2.5V, I _{DS} =-2A		85	115	
		V _{GS} =-1.8V, I _{DS} =-1A		106	165	
V _{SD} ^a	Diode Forward Voltage	I _{SD} =-1.3A, V _{GS} =0V		-0.75	-1.3	V
Gate Charge Characteristics^b						
Q _g	Total Gate Charge	V _{DS} =-10V, V _{GS} =-4.5V, I _{DS} =-2.8A		7	10	nC
Q _{gs}	Gate-Source Charge			1.9		
Q _{gd}	Gate-Drain Charge			1.9		

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Electrical Characteristics (Cont.) (T_A = 25°C Unless Otherwise Noted)

Symbol	Parameter	Test Condition	APM2301CA			Unit
			Min.	Typ.	Max.	
Dynamic Characteristics^b						
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =-10V, Frequency=1.0MHz		580		pF
C _{oss}	Output Capacitance			100		
C _{rss}	Reverse Transfer Capacitance			75		
t _{d(ON)}	Turn-on Delay Time	V _{DD} =-10V, R _L =10Ω, I _{DS} =1A, V _{GEN} =-4.5V, R _G =6Ω		4	7	ns
t _r	Turn-on Rise Time			13	23	
t _{d(OFF)}	Turn-off Delay Time			35	63	
t _f	Turn-off Fall Time			20	36	
t _{rr}	Reverse Recovery Time	I _{SD} =-2.8A, dI _{SD} /dt =100A/μs		20		ns
Q _{rr}	Reverse Recovery Charge			7		nC

Notes:

- a : Pulse test ; pulse width≤300μs, duty cycle≤2%.
b : Guaranteed by design, not subject to production testing.