

AP2305

P-Channel Power MOSFET

描述 / Descriptions

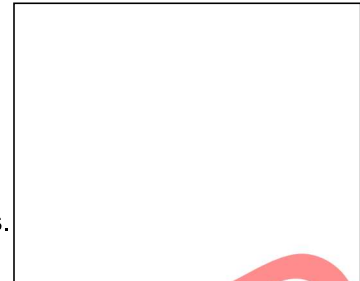
SOT-23 塑封封装 P 道 MOS 场效应管。 P- CHANNEL MOSFET in a SOT-23 Plastic Package.

特征 / Features

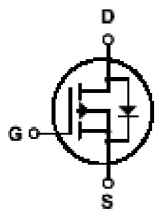
沟道场效应管, MOS 场效应管。
Trench FET Power MOSFET 100% Rg Tested.

用途 / Applications

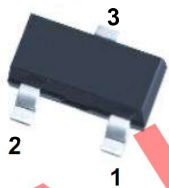
适用于作负载开关或脉宽调制应用。
This device is suitable for use as a load switch or in PWM applications.



内部等效电路 / Equivalent Circuit



引脚排列 / Pinning



PIN 1 : S PIN 2 : G PIN 3 : D

Maximum ratings (T_a=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V _{DS}	-20	V
Gate-Source Voltage	V _{GS}	±12	
Continuous Drain Current	I _D	-3.5	A
Continuous Source-Drain Diode Current	I _S	-0.8	
Maximum Power Dissipation	P _D	0.35	W
Thermal Resistance from Junction to Ambient(t≤10s)	R _{θJA}	357	°C/W
Junction Temperature	T _J	150	°C
Storage Temperature	T _{STG}	-50 ~+150	

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Parameter	Symbol	Test Condition	Min	Typ	Max	Units	
Static							
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = -250μA	-20			V	
Gate-source threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -250μA	-0.5		-0.9		
Gate-source leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±8V			±100	nA	
Zero gate voltage drain current	I _{DSS}	V _{DS} = -8V, V _{GS} = 0V			-1	μA	
Drain-source on-state resistance ^e	R _{DS(on)}	V _{GS} = -4.5V, I _D = -3.5A		55	65	mΩ	
		V _{GS} = -2.5V, I _D = -3A		65	86		
		V _{GS} = -1.8V, I _D = -2.0A		90	110		
Forward transconductance ^a	g _{fs}	V _{DS} = -5V, I _D = -4.1A	6			S	
Dynamic							
Input capacitance ^{b,c}	C _{iss}	V _{DS} = -4V, V _{GS} = 0V, f = 1MHz		740		pF	
Output capacitance ^{b,c}	C _{oss}			290			
Reverse transfer capacitance ^{b,c}	C _{rss}			190			
Total gate charge ^b	Q _g	V _{DS} = -4V, V _{GS} = -4.5V, I _D = -4.1A		7.8	15	nC	
			V _{DS} = -4V, V _{GS} = -2.5V, I _D = -4.1A		4.5		9
							1.2
Gate-source charge ^b	Q _{gs}			1.6			
Gate-drain charge ^b	Q _{gd}						
Gate resistance ^{b,c}	R _g	f = 1MHz	1.4	7	14	Ω	
Turn-on delay time ^{b,c}	t _{d(on)}	V _{DD} = -4V, R _L = 1.2Ω, I _D ≈ -3.3A, V _{GEN} = -4.5V, R _g = 1Ω		13	20	ns	
Rise time ^{b,c}	t _r			35	53		
Turn-off Delay time ^{b,c}	t _{d(off)}			32	48		
Fall time ^{b,c}	t _f			10	20		
Turn-on delay time ^{b,c}	t _{d(on)}	V _{DD} = -4V, R _L = 1.2Ω, I _D ≈ -3.3A, V _{GEN} = -8V, R _g = 1Ω		5	10	ns	
Rise time ^{b,c}	t _r			11	17		
Turn-off delay time ^{b,c}	t _{d(off)}			22	33		
Fall time ^{b,c}	t _f			16	24		
Drain-source body diode characteristics							
Continuous source-drain diode current	I _S	T _C = 25°C			-1.4	A	
Pulse diode forward current ^a	I _{SM}				-10		
Body diode voltage	V _{SD}	I _F = -3.3A			-1.2	V	

Note :

- Pulse Test ; Pulse Width ≤300μs, Duty Cycle ≤2%.
- Guaranteed by design, not subject to production testing.
- These parameters have no way to verify.