

SOT-23-6L Plastic-Encapsulate Mosfets

HM8205

Dual N-Channel Power Mosfet

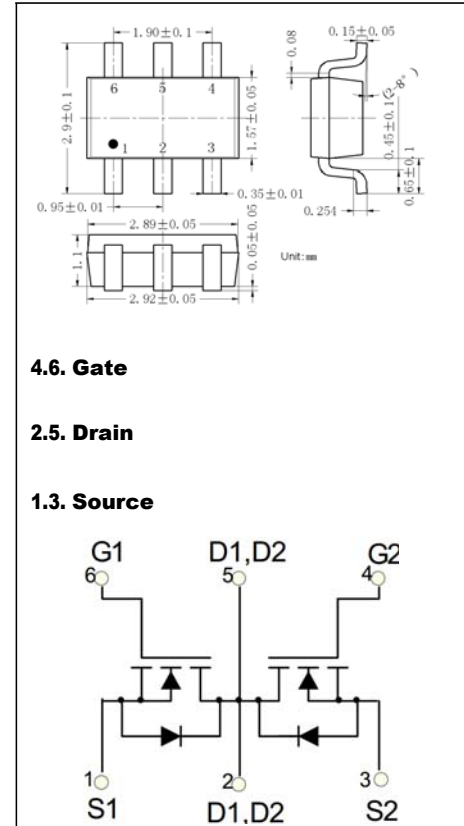
Features

- TrenchFET Power MOSFET
- Excellent $R_{DS(on)}$
- Low Gate Charge
- High Power and Current Handling Capability
- Surface Mount Package

Applications

- Battery Protection
- Load Switch
- Power Management

Marking: 8205 XX (XX:批次码)



Maximum Ratings ($T_a = 25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter	Value	Unit
V_{DS}	Drain-Source voltage	19	V
V_{GS}	Gate-Source voltage	± 10	
I_D	Continuous Drain Current	6	A
I_{DM}	Pulsed Drain Current ¹⁾	25	
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient ²⁾	357	$^\circ\text{C/W}$
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{STG}	Storage Temperature	-55 ~ +150	$^\circ\text{C}$
T_L	Lead Temperature for Soldering Purposes(1/8" from case for 10 s)	260	$^\circ\text{C}$

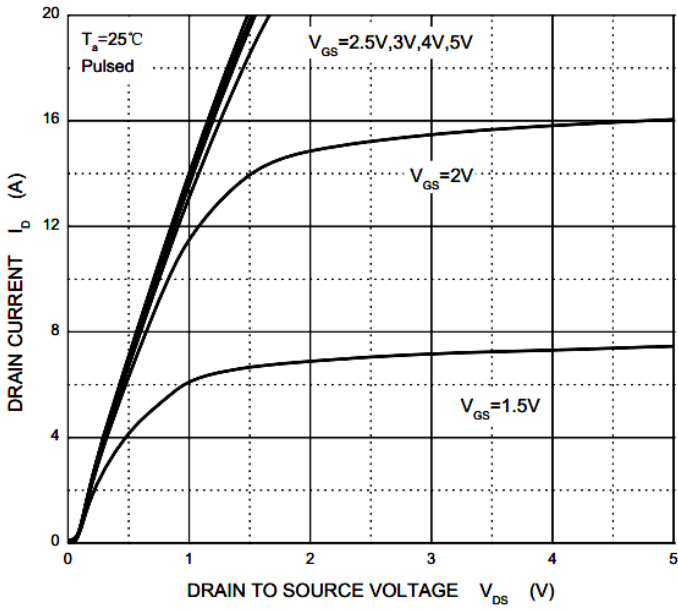
Electrical Characteristics (T_a = 25°C unless otherwise specified)
HM8205

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
V_{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} = 0V, I _D = 250μA	19			V
V_{GS(th)}	Gate-Threshold Voltage ³⁾	V _{DS} = V _{GS} , I _D = 250μA	0.5		0.9	V
I_{GSS}	Gate-body Leakage current	V _{DS} = 0V, V _{GS} = ±10V			±100	nA
I_{DSS}	Zero Gate Voltage Drain Current	V _{DS} = 18V, V _{GS} = 0V			1	μA
R_{DS(on)}	Drain-Source On-Resistance ³⁾	V _{GS} = 4.5V, I _D = 5A			18	mΩ
		V _{GS} = 2.5V, I _D = 4A			22	mΩ
g_{fs}	Forward Trans conductance ³⁾	V _{DS} = 5V, I _D = 4.5A		10		S
V_{SD}	Diode forward voltage ³⁾	I _S = 1.25A, V _{GS} = 0V			1.2	V
Dynamic Characteristics ⁴⁾						
C_{iss}	Input Capacitance	V _{GS} = 0V		800		pF
C_{oss}	Output Capacitance	V _{DS} = 8V		155		
C_{rss}	Reverse Transfer Capacitance	f = 1.0MHz		125		
Switching Characteristics ⁴⁾						
Q_g	Total Gate Charge	V _{GS} = 4.5V,		11		nC
Q_{gs}	Gate-Source Charge	I _D = 4A,		2.3		
Q_{gd}	Gate-Drain Charge	V _{DS} = 10V		2.5		
t_{d(on)}	Turn-On Delay Time	V _{DD} = 10V, I _D = 1A, R _{GEN} = 10Ω, V _{GS} = 4V		18		ns
t_r	Rise Time			5		
t_{d(off)}	Turn-Off Delay Time			43		
t_f	Fall Time			20		

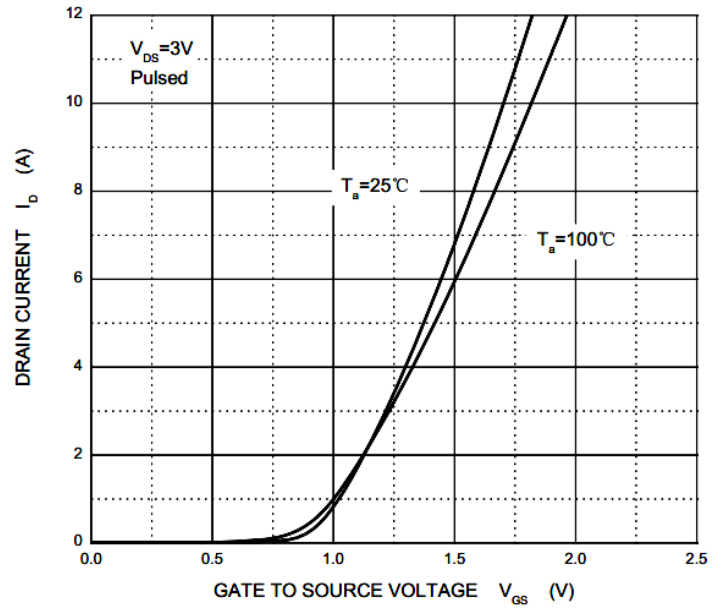
Notes:

1. Repetitive rating: Pulse width limited by maximum junction temperature
2. Surface Mounted on FR4 board, t ≤ 10 sec.
3. Pulse test : Pulse width ≤ 300μs, duty cycle ≤ 2%.
4. Guaranteed by design, not subject to production.

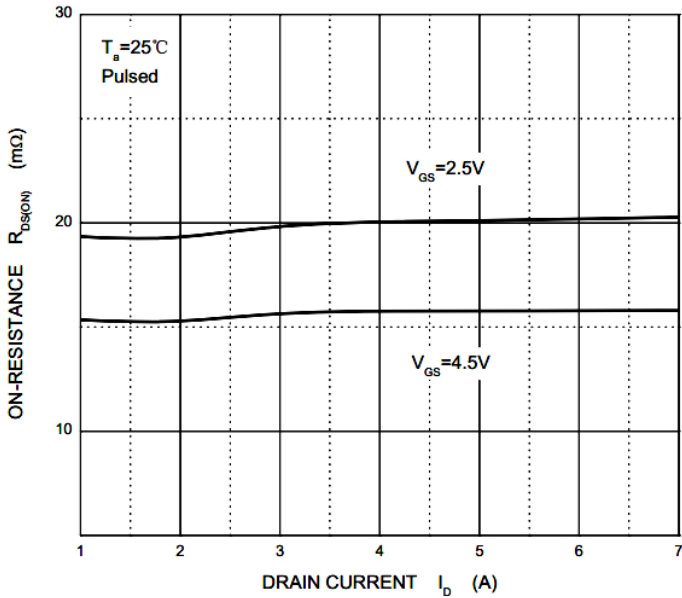
Output Characteristics



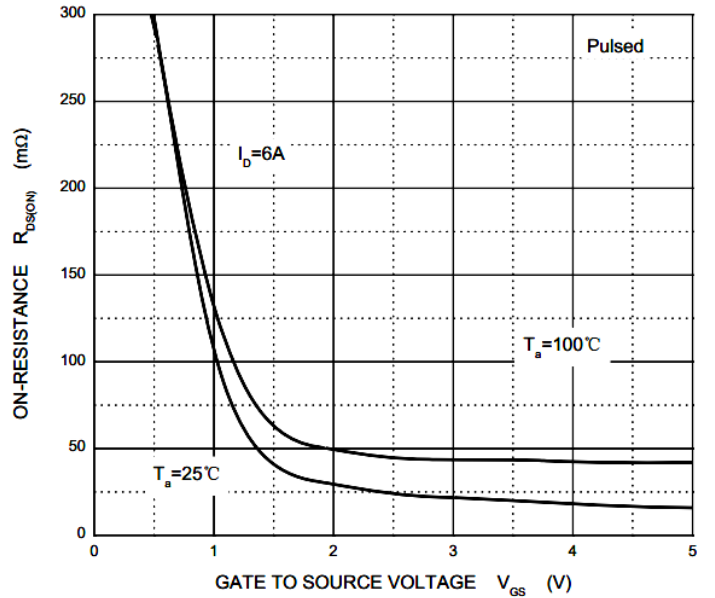
Transfer Characteristics



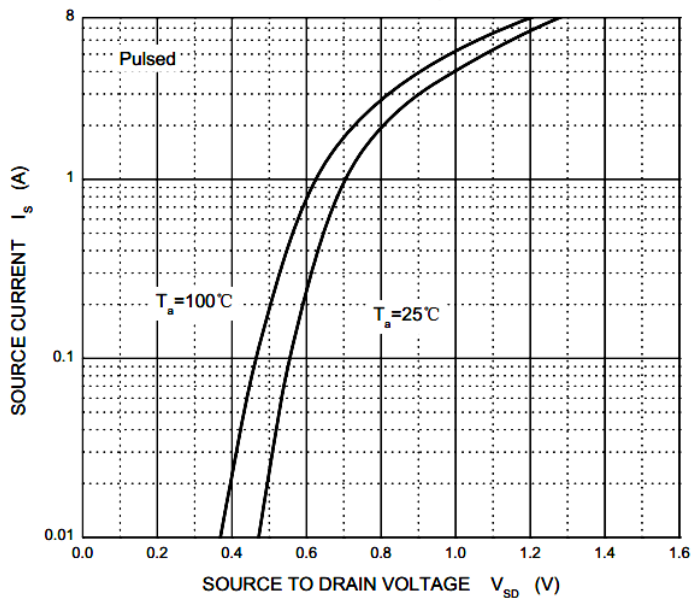
$R_{DS(ON)}$ — I_D



$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}



Threshold Voltage

