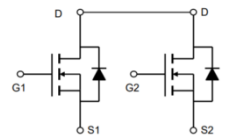
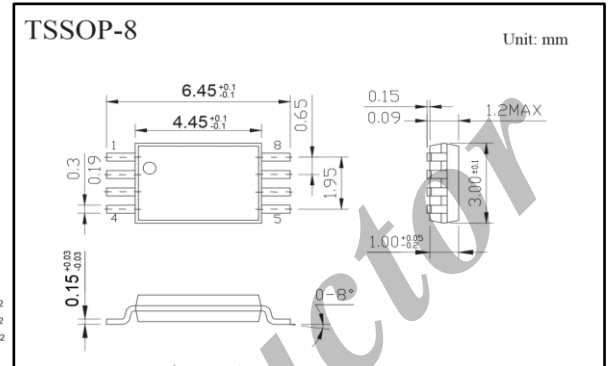


• **General Description**

- AP8205A combines advanced MOSFET technology with a low resistance package to provide extremely low $R_{DS(ON)}$. This device is most suitable to Li-ion battery management applications.
- Common- Drain



Top View



• **Applications**

- Li-ion battery management



• **Product Summary**

V_{DS}	20V
I_D	6.5A
$R_{DS(ON)}$ (at $V_{GS} = 4.5V$)	< 25m Ω
$R_{DS(ON)}$ (at $V_{GS} = 2.5V$)	< 29m Ω

• **Absolute Maximum Ratings $T_a = 25^\circ C$**

Parameter	Symbol	Rating	Unit	
Drain-Source Voltage	V_{DS}	20	V	
Gate-Source Voltage	V_{GS}	± 10	V	
Continuous Drain Current	I_D	6.5	A	
Pulsed Drain Current	I_{DM}	20		
Power Dissipation	P_D	$T_a = 25^\circ C$	2.0	W
		$T_a = 70^\circ C$	1.6	
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^\circ C$	
Thermal Characteristics				
Thermal Resistance. Junction-to-Ambient	$R_{\theta JA}$	78	$^\circ C/W$	
Thermal Resistance. Junction-to-Case	$R_{\theta JC}$	40		

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Parameters						
Drain-Source Breakdown Voltage	V_{DSS}	$I_D=250\mu A, V_{GS}=0V$	20			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=20V, V_{GS}=0V$			1	μA
		$V_{DS}=20V, V_{GS}=0V, T_J=55^\circ C$			5	
Gate-Body Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 8V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	0.5	1	1.5	V
On-State Drain Current ** Note (a)	$I_{D(ON)}$	$V_{GS}=4.5V, V_{DS}=5V$	15			A
Static Drain-Source On-Resistance ** Note (a)	$R_{DS(ON)}$	$V_{GS}=4.5V, I_D=6.5A$		20	25	m Ω
		$V_{GS}=2.5V, I_D=5.4A$		23	29	
Forward Transconductance ** Note (a)	g_{FS}	$V_{DS}=5V, I_D=3A$		11		S
Diode Forward Voltage	V_{SD}	$I_S=1.7A, V_{GS}=0V$			1.2	V
Maximum Body-Diode Continuous Current	I_S				1.3	A
Dynamic Parameters ** Note (b)						
Total Gate Charge	Q_g	$V_{GS}=4.5V, V_{DS}=10V, I_D=3A$		7	10	nC
Gate Source Charge	Q_{gs}			1.2		
Gate Drain Charge	Q_{gd}			1.9		
Input Capacitance	C_{iss}	$V_{GS}=0V, V_{DS}=10V, f=1MHz$		700		pF
Output Capacitance	C_{oss}			175		
Reverse Transfer Capacitance	C_{rss}			85		
Switching Parameters ** Note (b)						
Turn-On Delay Time	$t_{D(on)}$	$V_{DD}=10V, V_{GS}=4.5V, I_D=1A, R_{GEN}=6\Omega$		8	16	ns
Turn-On Rise Time	t_r			10	18	
Turn-Off Delay Time	$t_{D(off)}$			18	29	
Turn-Off Fall Time	t_f			5	10	

Notes.

- (a) Pulse test: $PW \leq 300\mu s$, duty cycle $\leq 2\%$.
- (b) For DESIGN AID ONLY, not subject to production testing.
- (c) Switching time is essentially independent of operating temperature.

• **Ordering Information**

Ordering Part Number	Package	MOQ
AP8205A	TSSOP-8	2,500 pcs / reel

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