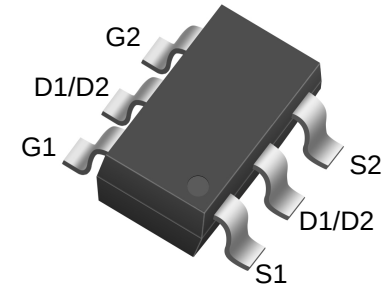
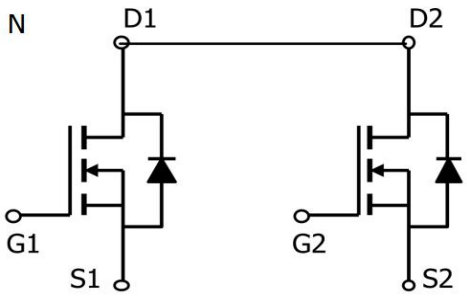
Description：

This N-Channel MOSFET uses advanced trench technology and design to provide excellent $R_{DS(on)}$ with low gate charge.

It can be used in a wide variety of applications.





Features：

1) V_{DS}=20V,I_D=4A,$R_{DS(ON)}$<27m Ω @V_{GS}=4.5V
2) Low gate charge.
3) Green device available.
4) Advanced high cell denity trench technology for ultra low $R_{DS(ON)}$.
5) Excellent package for good heat dissipation.

Package Marking and Ordering Information：

Part NO.	Marking	Package	Packing
DO8205-B	8205A	SOT-23-6C	3000pcs/Reel

Absolute Maximum Ratings： (T_A=25℃ unless otherwise noted)

Symbol	Parameter	Ratings	Units
V_{DS}	Drain-Source Voltage	20	V
V_{GS}	Gate-Source Voltage	±10	V
I_D	Continuous Drain Current-T_A=25℃[1]	4	A
I_{DM}	Pulsed Drain Current	20	
P_D	Power Dissipation	1.9	W
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55-+150	℃

Electrical Characteristics: (T_A=25℃ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV_{DSS}	Drain-Sourtce Breakdown Voltage	V_{GS}=0V,I_D=250μA	20	22	---	V
I_{DSS}	Zero Gate Voltage Drain Current	V_{GS}=0V, V_{DS}=19V	---	---	1	μA
I_{GSS}	Gate-Source Leakage Current	V_{GS}=±10V, V_{DS}=0A	---	---	±10	nA
On Characteristics						
$V_{GS(th)}$	Gate-Source Threshold Voltage	V_{GS}=V_{DS}, I_D=250μA	0.4	0.6	1	V
$R_{DS(ON)}$	Drain-Source On Resistance [2]	V_{GS}=4.5V,I_D=4.5A	---	21	27	mΩ
		V_{GS}=2.5V,I_D=2.5A	---	25.5	33	mΩ
Dynamic Characteristics						
C_{iss}	Input Capacitance	V_{DS}=10V, V_{GS}=0V, f=1MHz	---	351.5	---	pF
C_{oss}	Output Capacitance		---	93.4	---	
C_{rss}	Reverse Transfer Capacitance		---	10.5	---	
Switching Characteristics						
$t_{d(on)}$	Turn-On Delay Time	V_{DD}=10V,I_D=3A R_{ENG}=10Ω,V_{GS}=4.5V	---	210	---	ns
t_r	Rise Time		---	224.2	---	ns
$t_{d(off)}$	Turn-Off Delay Time		---	37.8	---	ns
t_f	Fall Time		---	173.2	---	ns
Q_g	Total Gate Charge	V_{GS}=4.5V, V_{DS}=10V, I_D=1A	---	7.8	---	nc
Q_{gs}	Gate-Source Charge		---	3.15	---	nc
Q_{gd}	Gate-Drain “Miller” Charge		---	1.57	---	nc
Drain-Source Diode Characteristics						
V_{SD}	Diode Forward Voltage	V_{GS}=0V, I_{SD}=4A	0.4	0.8	1.2	V
I_S	Continuous Drain Curren	V_D=V_G=0V	---	---	4	A
I_{SM}	Pulsed Drain Current		---	---	20	A

Notes:

1 Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature

2. Pulse Test: Pulse Width≤300μs, Duty Cycle≤0.5%

Typical Characteristics: (T_A=25℃ unless otherwise noted)

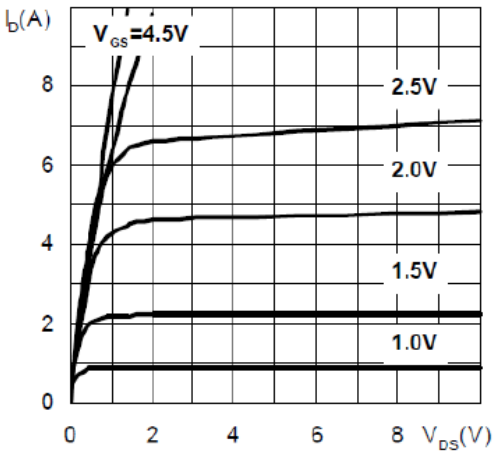


Figure 1 Output Characteristics

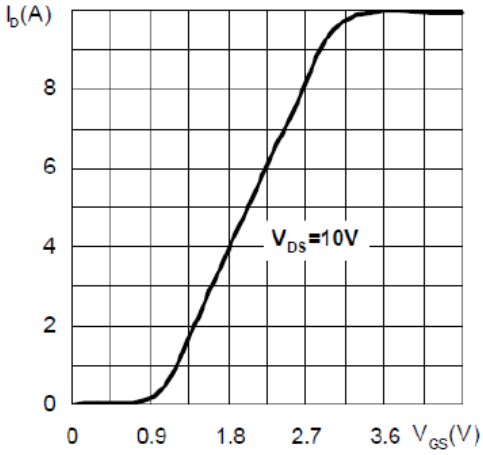


Figure 2 Transfer Characteristics

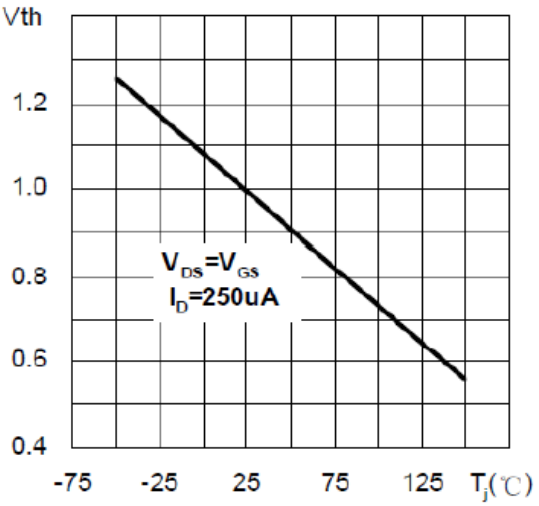


Figure 3 Thershold Voltage vs. Temperature

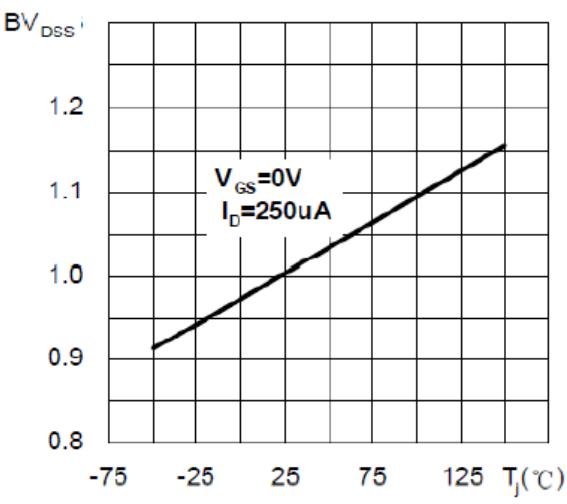


Figure 4 BVDSS vs. Temperature

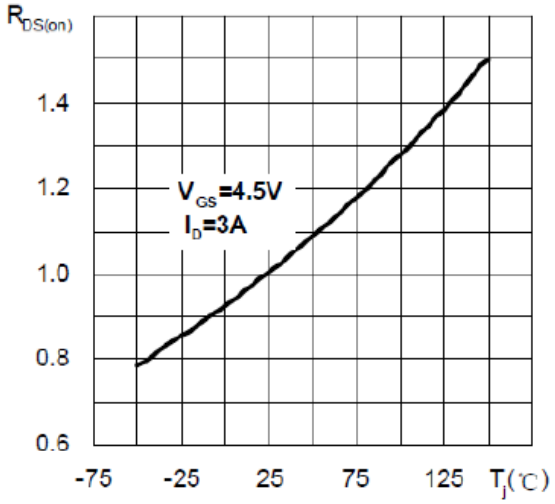


Figure 5 Rds(on) vs. Temperature

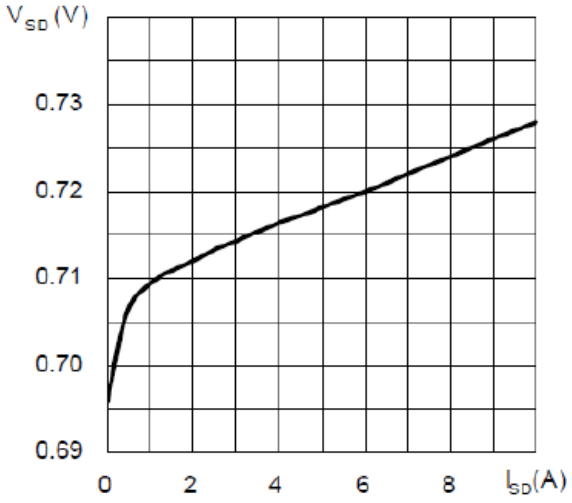


Figure 6 Source to Drain vs. Temperature

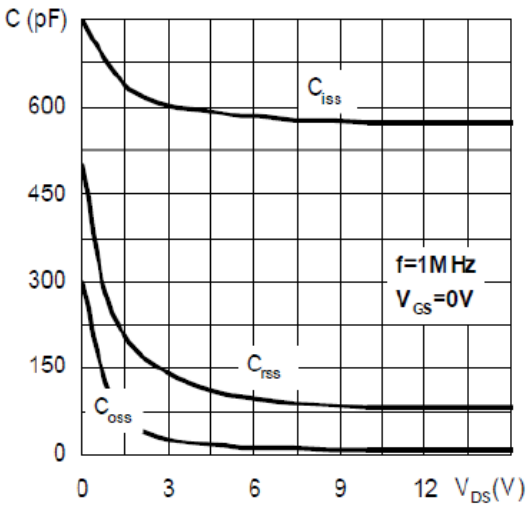


Figure 7 Capacitance

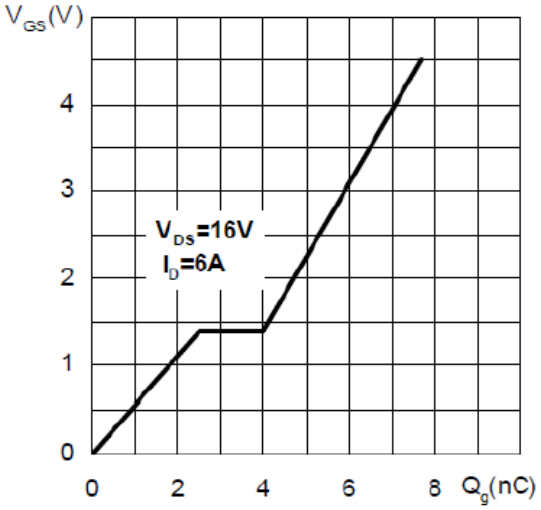


Figure 8 Gate Charge

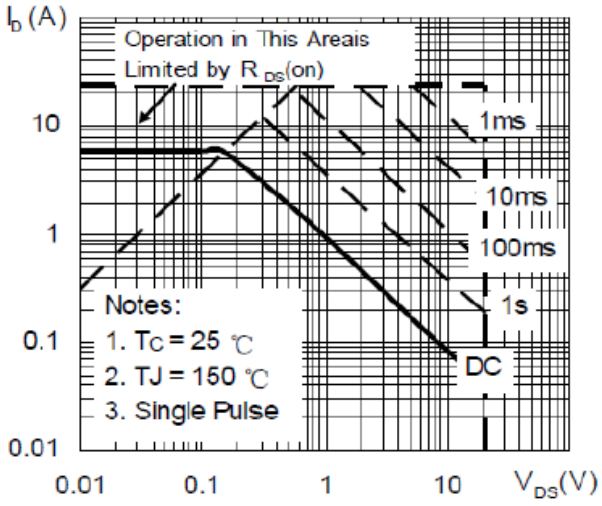


Figure 9 Safe Operating Area

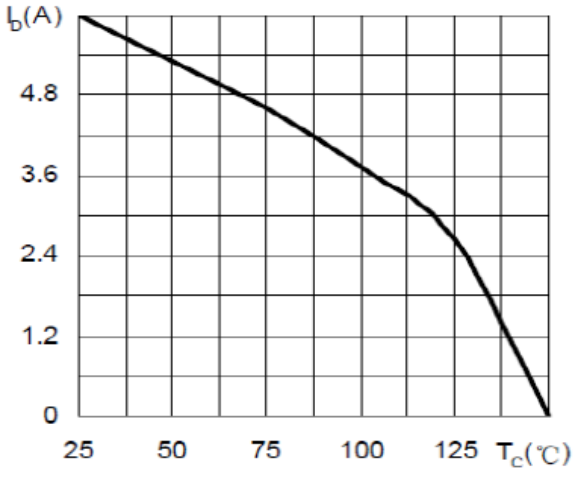


Figure 10 Maximum Drain Current vs. Case Temperature

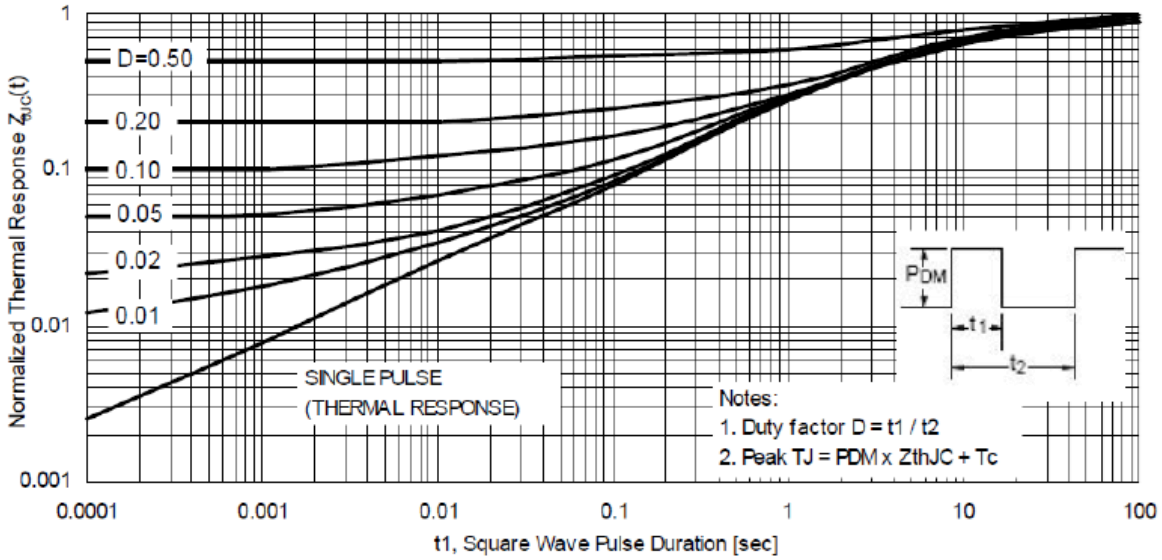
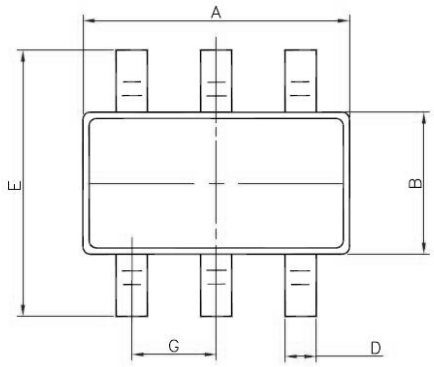
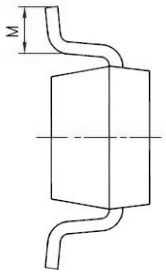
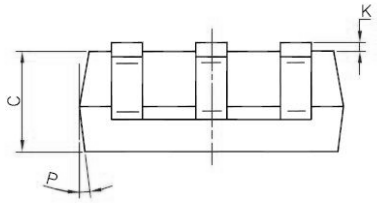


Figure 11 Maximum Transient Thermal Impedence

SOT-23-6 Package Outline Data



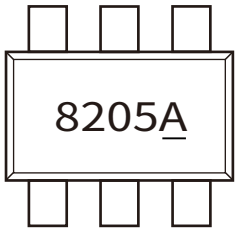




UNIT: mm

DIM	MILLIMETERS
A	2.82~3.02
B	1.60 ± 0.10
C	1.10 ± 0.05
D	0.40 ± 0.10
E	2.65~2.95
G	0.95typ
K	0.00~0.10
M	0.20MIN
P	9 ± 2°

Marking Information：



Previous Version

Version	Date	Subjects (major changes since last revision)
1.0	2024-06-08	Release of final version

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