

Product Summary

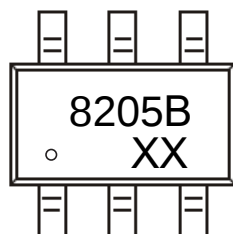
$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
20V	26mΩ@4.5V	4A
	32mΩ@2.5V	

Feature

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

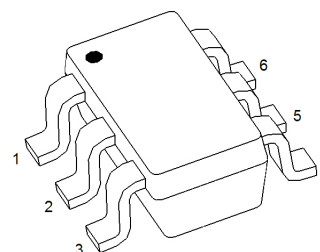
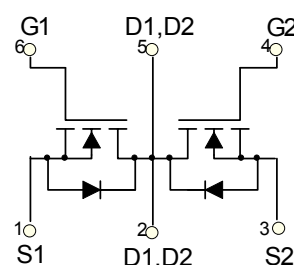
Application

- Battery Protection
- Load Switch
- Power Management

MARKING:


8205B = Device Code

XX = Date Code

SOT-23-6L

Schematic diagram

ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current ^{1,2}	I_D	4	A
Pulsed Drain Current	I_{DM}	16	A
Power Dissipation	P_D	0.35	W
Thermal Resistance from Junction to Ambient ^{1,2}	$R_{\theta JA}$	357	$^\circ\text{C/W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^\circ\text{C}$

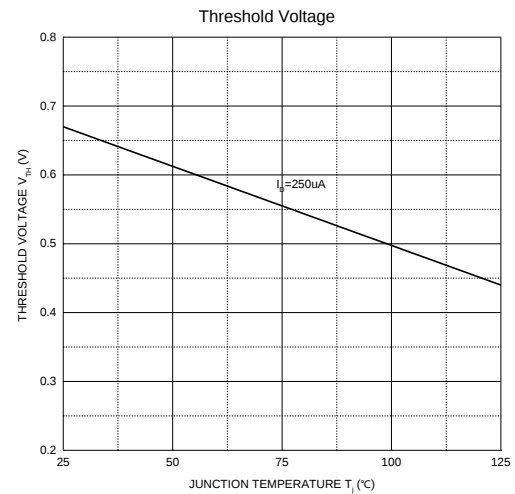
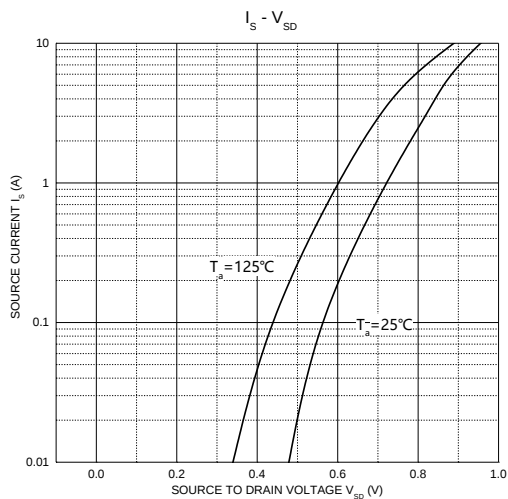
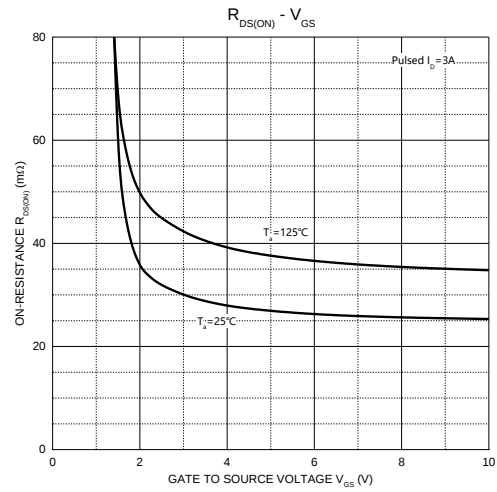
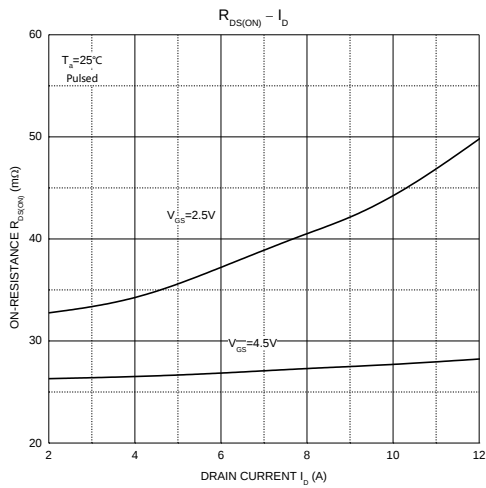
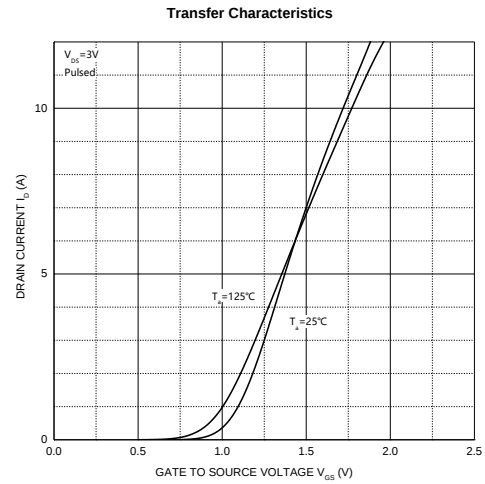
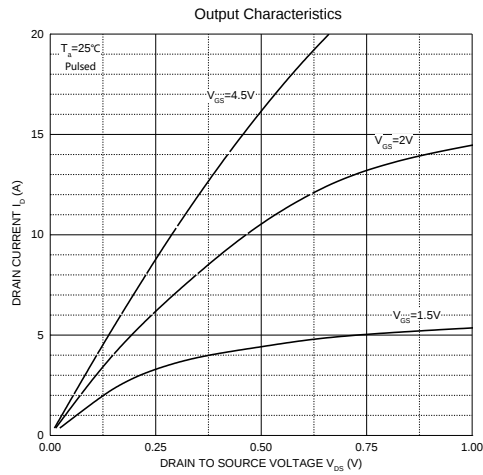
MOSFET ELECTRICAL CHARACTERISTICS($T_a = 25^\circ\text{C}$ unless otherwise noted)

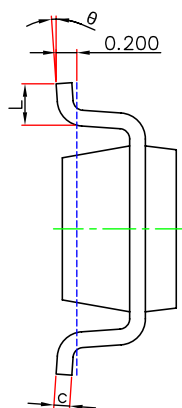
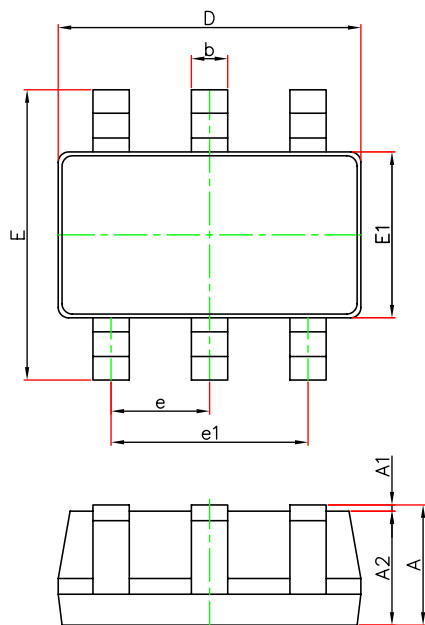
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	20			V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = 20V, V_{GS} = 0V$			1	μA
Gate-body leakage current	I_{GSS}	$V_{GS} = \pm 12V, V_{DS} = 0V$			± 100	nA
On Characteristics ³						
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.45	0.7	1.2	V
Drain-source on-resistance	$R_{DS(on)}$	$V_{GS} = 4.5V, I_D = 3A$		26	32	m Ω
		$V_{GS} = 2.5V, I_D = 3A$		32	40	
Forward Transconductance	g_{fs}	$V_{DS} = 5V, I_D = 3A$		8		S
Dynamic characteristics						
Input Capacitance	C_{iss}	$V_{DS} = 10V, V_{GS} = 0V, f = 1MHz$		278		pF
Output Capacitance	C_{oss}			51		
Reverse Transfer Capacitance	C_{rss}			44		
Switching Characteristics						
Total Gate Charge	Q_g	$V_{DS} = 10V, V_{GS} = 4.5V, I_D = 4A$		14		nC
Gate-Source Charge	Q_{gs}			2.5		
Gate-Drain Charge	Q_{gd}			2.5		
Turn-on delay time	$t_{d(on)}$	$V_{DD} = 10V, V_{GS} = 4V, I_D = 1A$ $R_G = 10\Omega$		16		ns
Turn-on rise time	t_r			8		
Turn-off delay time	$t_{d(off)}$			36		
Turn-off fall time	t_f			18		
Diode Characteristics						
Diode Forward Current	I_S				4	A
Diode Forward Voltage ³	V_{SD}	$V_{GS} = 0V, I_S = 3A$			1.2	V

Notes:

1. $R_{\theta JA}$ is measured with the device mounted on 1 in² FR4 board with 1oz. single side copper, in a still air environment with $T_A = 25^\circ\text{C}$.
2. $R_{\theta JA}$ is measured in the steady state
3. Pulse test : Pulse width $\leq 380\mu s$, duty cycle $\leq 2\%$.

Typical Electrical and Thermal Characteristics



SOT-23-6L Package Information


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E1	1.500	1.700	0.059	0.067
E	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°