

BM8205A

20V Dual N-Channel
Enhancement MOSFET

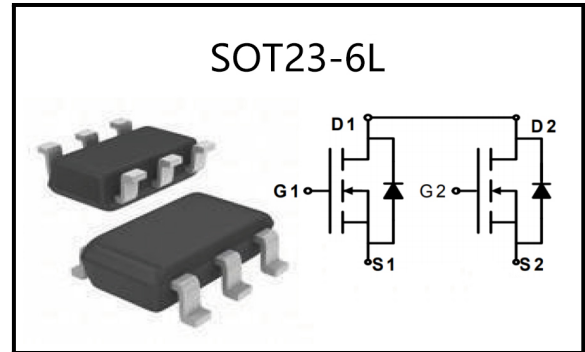
Features

- $V_{DS}=20V$
- $I_D=6A$
- $R_{DS(ON)}@V_{GS}=4.5V$, TYP=20m Ω
- $R_{DS(ON)}@V_{GS}=2.5V$, TYP=27m Ω

General Description

- Very low on-resistance $R_{DS(ON)}$
- High density cell design for ultra low $R_{DS(ON)}$
- Fully characterized avalanche voltage and current
- SOT23-6L for Surface Mount Package.

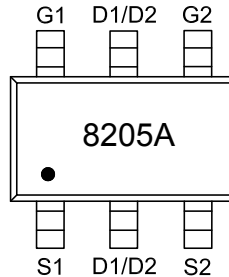
Package



Application

- Power switching application
- PWM applications
- Hard switched and high frequency circuits
- Uninterruptible power supply

Marking



Ordering information

Order code	Package	Marking	Base qty	Delivery mode
BM8205A	SOT23-6L	8205A	3K	Tape and reel

Absolute Maximum Ratings (@ $T_A=25^{\circ}C$ unless otherwise noted)

Symbol	Parameter		Value	Unit
V_{DS}	Drain-Source Voltage		20	V
V_{GS}	Gate-Source Voltage		± 10	V
I_D	Continuous Drain Current ($T_J=150^{\circ}C$) ⁽¹⁾	$T_A = 25^{\circ}C$	6.0	A
		$T_A = 85^{\circ}C$	4.8	
I_{DM}	Pulsed Drain Current ⁽²⁾		24	A
P_D	Maximum Power Dissipation ⁽¹⁾		1.05	W
T_J, T_{stg}	Operating junction and storage temperature range		-55 to +150	$^{\circ}C$



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N-Channel Electrical Characteristics @T_A=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
OFF Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} = 0V, I _D = 250uA	20	–	–	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = 20V, V _{GS} = 0V	–	–	1	uA
I _{GSS}	Gate Body Leakage Current	V _{GS} = ±12V, V _{DS} = 0V	–	–	±100	nA
ON Characteristics						
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS} , I _D = 250uA	0.55	0.85	1.15	V
R _{DS(on)}	Drain-Source On-State Resistance ⁽¹⁾	V _{GS} = 4.5V, I _D = 3.0A	–	20	25	mΩ
		V _{GS} = 2.5V, I _D =2.0A	–	27	35	
Dynamic Characteristics ⁽²⁾						
C _{iss}	Input Capacitance	V _{DS} = 10V, V _{GS} = 0V, f = 1.0MHZ	–	370	–	pF
C _{Oss}	Output Capacitance		–	89	–	
C _{rss}	Reverse Transfer Capacitance		–	10	–	
Switching Characteristics						
t _{d(on)}	Turn-On Delay Time	V _{DD} = 10V, V _{GEN} = 4.5V, I _D =3A R _{GEN} = 10Ω,	–	200	–	ns
t _r	Turn-On Rise Time		–	236	–	
t _{d(off)}	Turn-Off Delay Time		–	36	–	
t _f	Turn-Off Fall Time		–	165	–	
Q _g	Total Gate Charge	V _{DS} = 10V I _D =1A, V _{GS} = 4.5V	–	7.5	–	nC
Q _{gs}	Gate-Source Charge		–	3.0	–	
Q _{gd}	Gate-Drain Charge		–	1.5	–	
Drain-Source Diode Characteristics						
V _{SD}	Diode Forward Voltage	I _S = 2.8A,V _{GS} = 0V	–	0.7	1.3	V

Notes:

(1)Pulse test: Pulse width ≤300 μs, duty cycle≤2%.

(2)Guaranteed by design, not subject to production testing.



Typical Performance Characteristics($T_J = 25^\circ\text{C}$, unless otherwise noted)

Figure 1 :Output Characteristics

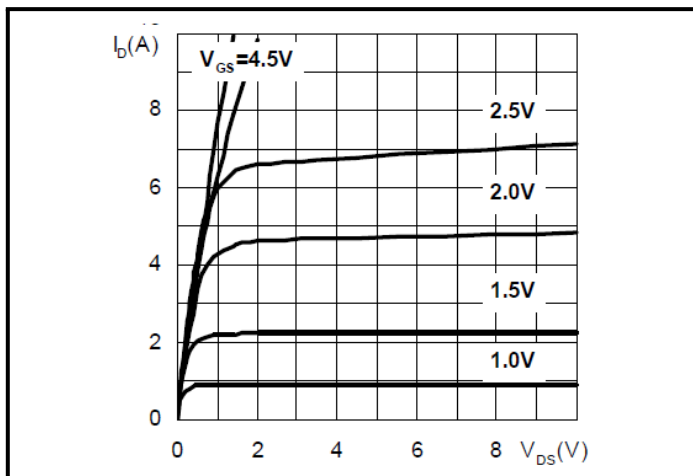


Figure 2 :Transfer Characteristics

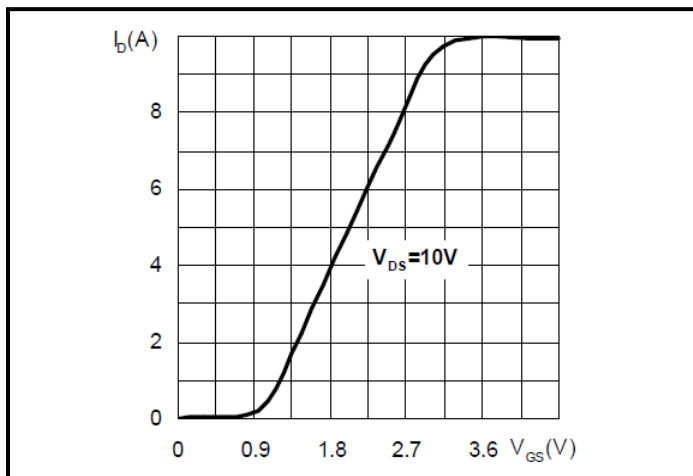


Figure 3 :Thershold Voltage VS. Temperature

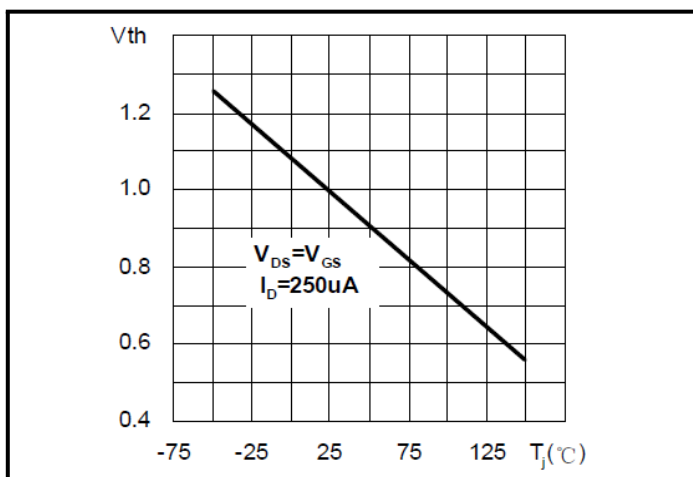


Figure 4 :BVdss VS. Temperature

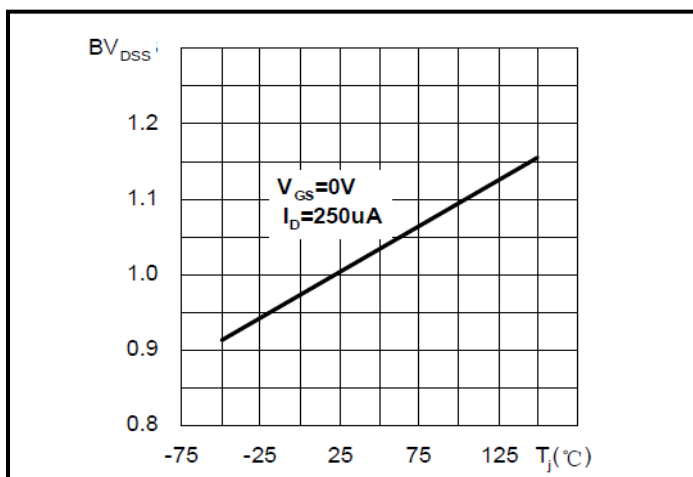


Figure 5 :Rds(ON) VS. Temperature

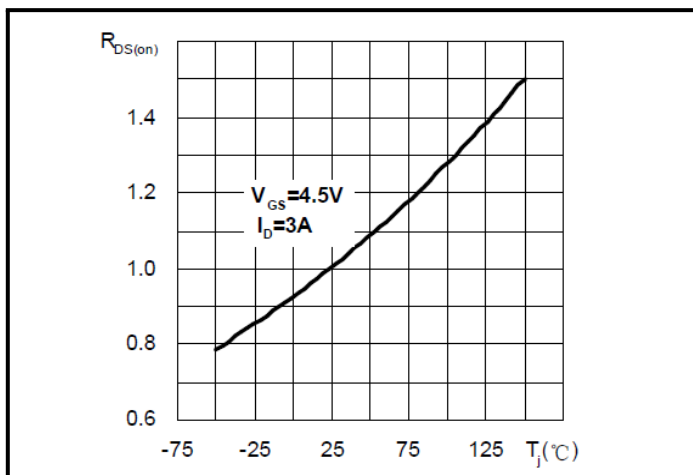
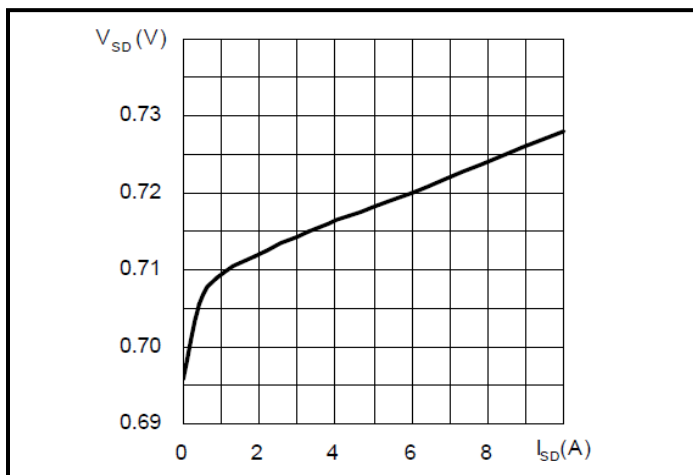


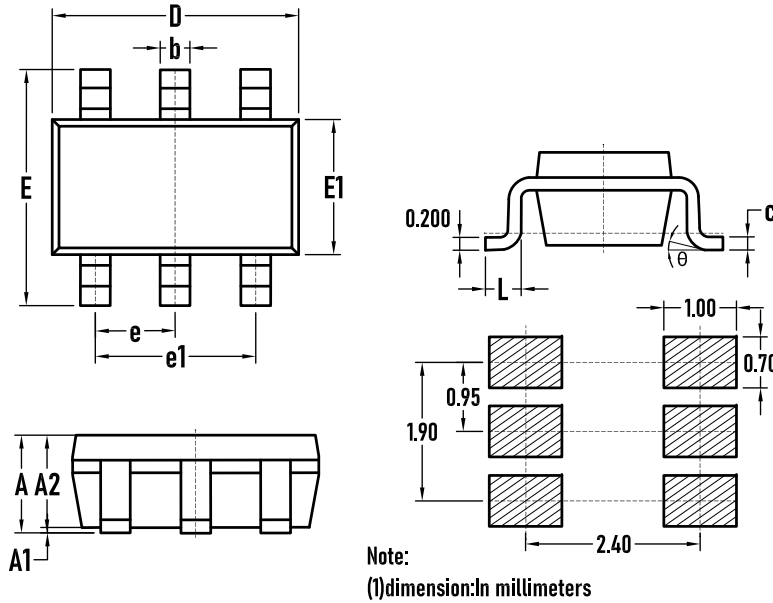
Figure 6 :Source to Drain VS. Temperature



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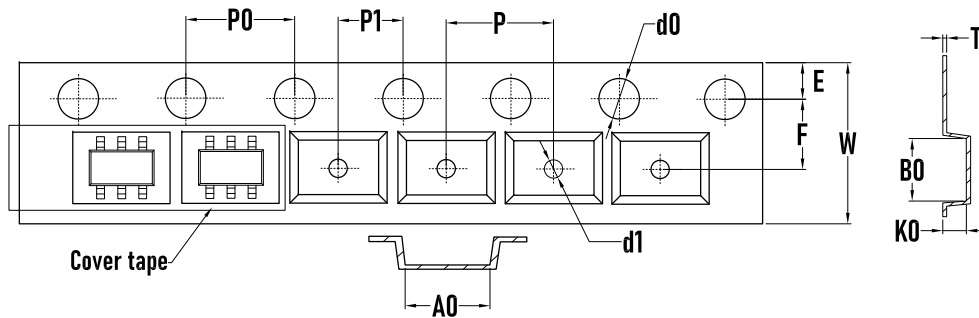
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Outline Drawing - SOT23-6L



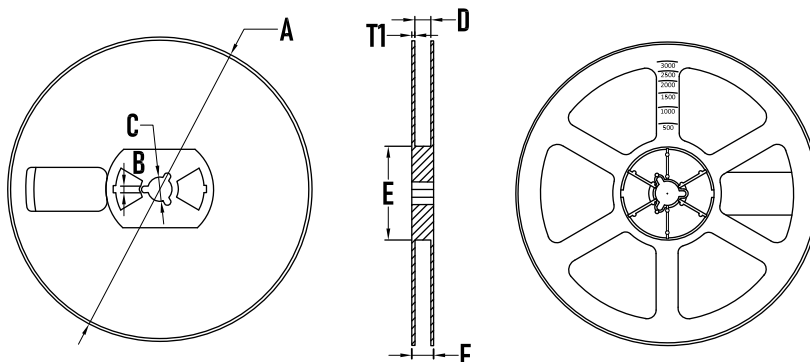
SYMBOL	MILLIMETER		Inches	
	MIN	MAX	MIN	MAX
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
C	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E1	1.500	1.700	0.059	0.067
E	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071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

Packaging Tape - SOT23-6L



SYMBOL	MILLIMETER
A0	3.25±0.1
B0	3.3±0.1
d0	1.55±0.1
d1	1.0±0.1
E	1.75±0.1
F	3.50±0.1
K0	1.38±0.1
P	4.00±0.1
P0	4.00±0.1
P1	2.00±0.1
W	8.00±0.2
T	0.2±0.02

Packaging Reel



SYMBOL	MILLIMETER
A	177.8±0.2
B	2.7±0.2
C	13.5±0.2
D	9.6±0.3
E	54.5±0.2
F	12.3±0.3
T1	1.0±0.2
Quantity	3000PCS

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Specifications are subject to change without notice.

Please refer to <http://www.born-tw.com> for current information.

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