Features

★ VDS(m in) 19.5 V
★ ID (max)=6A
★ Low on state resistance
RDS(on) = 19 mΩ TYP.(VGS = 4.5V)
RDS(on) = 23 mΩ TYP. (VGS = 2.5V)
★ Lead free product is acquired
★ Surface Mount Package

Product Summary

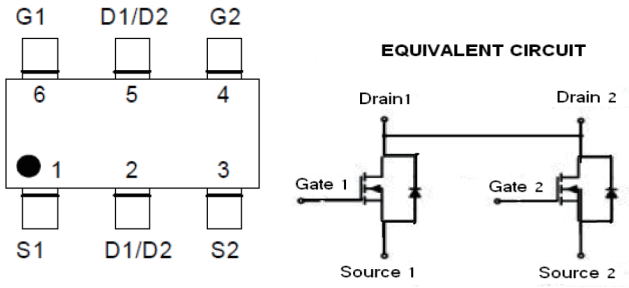
RoHS

BVDSS	RDSON	ID
20V	19mΩ	6A

Description

The 8205 is a dual N channel MOS Field Effect Transistor which uses advanced trench technologyto provide excellent RDS(on) , low gate charge and operation with low gate voltages. This device issuitable for use as a battery protection or in other switching application. 8205 is packaged in a small SOT23-6 package.

SOT23-6



Applications

★ Battery pr otection
★ Battery Powered Systems
★ Power Management in Notebook Computer
★ Portable Equipment

Absolute Maximum Ratings

Symbol	Parameter	Value	Unit
V_{DS}	Drain-Source Voltage	19.5	V
V_{GS}	Gate-Source Voltage	±12	V
I_D@T_C=25℃	Continuous Drain Current	6	A
I_{DM}	Pulsed Drain Current2	25	A
T_{STG}	Storage Temperature Range	-55 to 150	℃
T_J	Operating Junction Temperature Range	150	℃
$R_{\theta JA}$	Thermal Resistance θJA=100℃/W)	1.25	℃/W

Absolute Maximum Ratings

[Table-1] Ordering Information

DEVICE	PACKAGE	PIN COUNT	MARKING
FL8205	SOT23-6	6	8205A

Note:
1. Stresses above those listed parameter may cause permanent damage to the device.These are stress ratings only and operation of the devices at these or any other conditions above this indicated in the operational section of this specification is not implied. Exposure to these listed ratings for extended periods may affect the reliability.
2. Relative Rating: Pulse width limited by maximum junction temperature.

Electrical Characteristics (T_J =25 °C unless otherwise specified)

Symbol	Parameter	Test condition	Min.	Typ.	Max.	Units
OFF CHARACTERISTICS						
BV_{DSS}	Drain-Source breakdown voltage	V_{GS}=0V, I_D=250μA	19.5	---	---	V
I_{DSS}	Zero gate voltage drain current	V_{DS}=19.5V, V_{GS}=0V	---	---	1	μA
I_{GSS}	Gate-body leakage current	V_{GS}=±12V, V_{DS}=0V	---	---	±100	nA
ON CHARACTERISTICS(1)						
$V_{GS(TH)}$	Gate threshold voltage	V_{DS}= V_{GS}, I_D=250μA	0.55	0.7	0.95	V
$R_{DS(ON)}$	Drain-source on-state resistance	V_{GS}=4.5V, I_D=3A	---	19	23	mΩ
		V_{GS}=2.5V, I_D=2A	---	23	30	mΩ
DYNAMIC CHARACTERISTICS(2)						
C_{ISS}	Input capacitance	V_{DS}=10V, V_{GS}=0V, F=1.0MHz	---	465	---	PF
C_{OSS}	Output capacitance		---	99	---	PF
C_{RSS}	Reverse transfer capacitance		---	76	---	PF
SWITCHING CHARACTERISTICS(2)						
$t_{d(ON)}$	Turn-on delay time	V_{DD}= 10V, I_D=1A V_{GS}= 4.5V, R_{GEN}=10Ω	---	8	---	nS
t_r	Turn-on rise time		---	17	---	nS
$t_{d(OFF)}$	Turn-off delay time		---	19	---	nS
t_f	Turn-off fall time		---	12	---	nS
Q_g	Total gate charge	V_{DS}= 10V, I_D=4A V_{GS}= 4.5V	---	6.1	---	nC
Q_{gs}	Gate-source charge		---	0.9	---	nC
Q_{gd}	Gate-drain charge		---	1.8	---	nC
Drain-source diode characteristics						
V_{SD}	Diode forward voltage(1)	V_{GS}= 0V, I_S=2.8A	---	0.7	1.2	V
I_S	Diode forward current(3)		---	---	4.5	A

Note :

1.Pulse Test: pulse width 300 μ s, duty cycle 2%.

2.Guaranteed by design, not subject to production.

3.Surface mounted on FR4 board, t 10sec.

Typical Performance Characteristics

Figure1: Output Characteristics

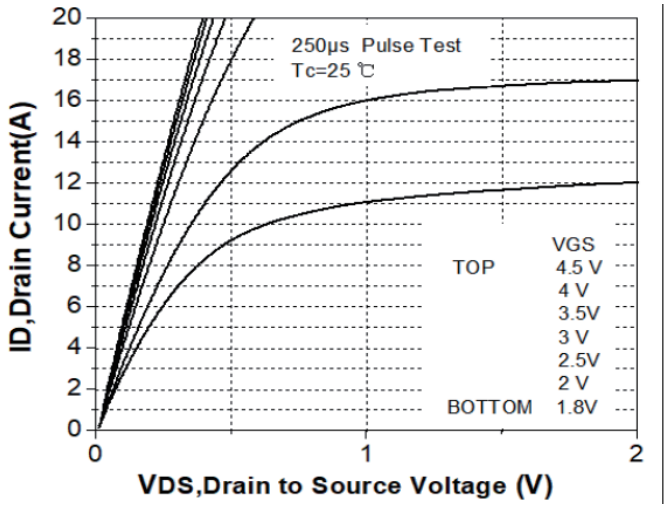


Figure 2: Transfer Ch aracteristics

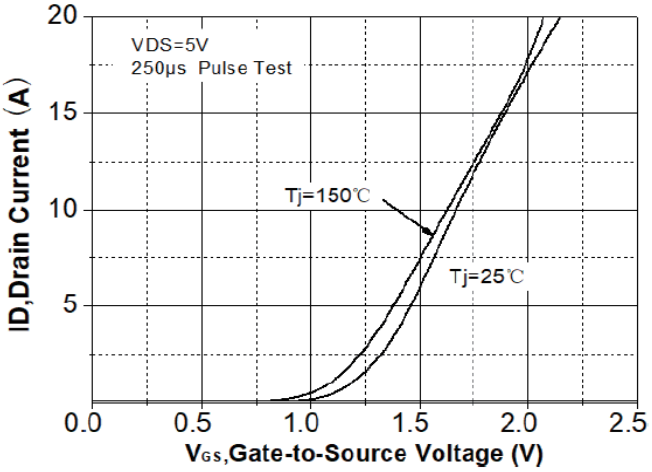


Figure 3:Threshold Voltage VS. Temperat

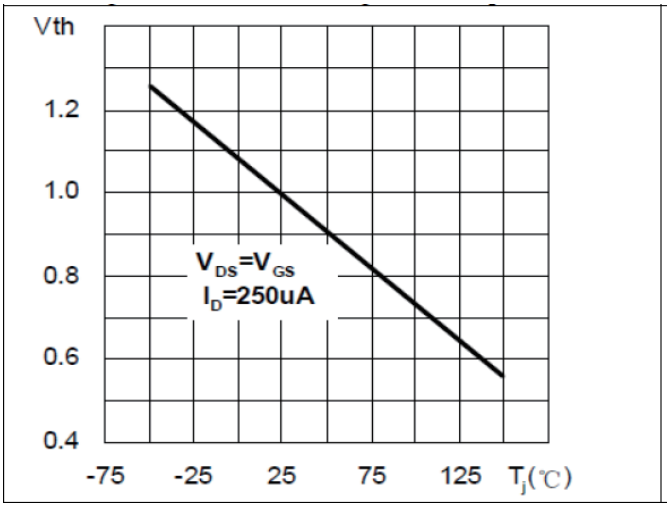


Figure 4: BVdss VS. Temperature

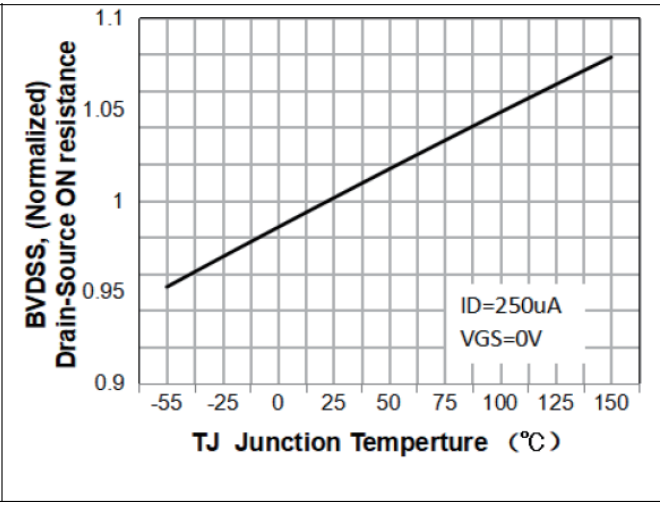


Figure 5: Rds(ON) VS. Temperature

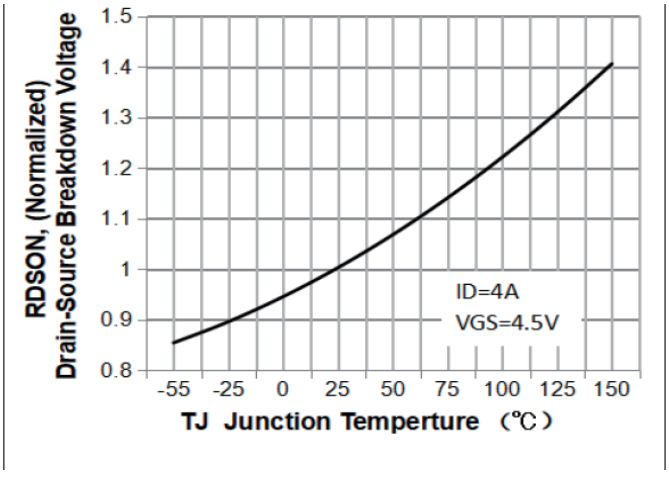
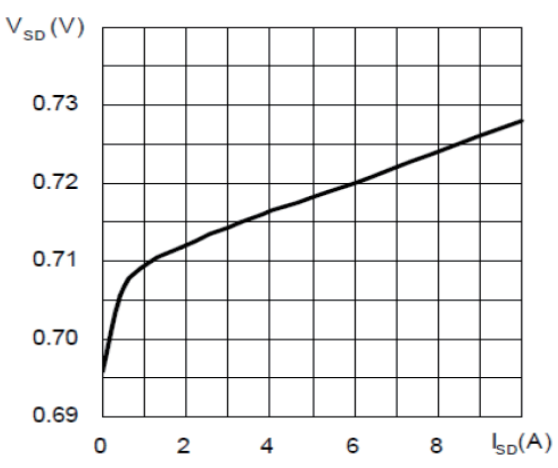


Figure 6: Source to Drain VS. Temperatu



Typical Performance Characteristics

Figure 7: Safe Operating Area

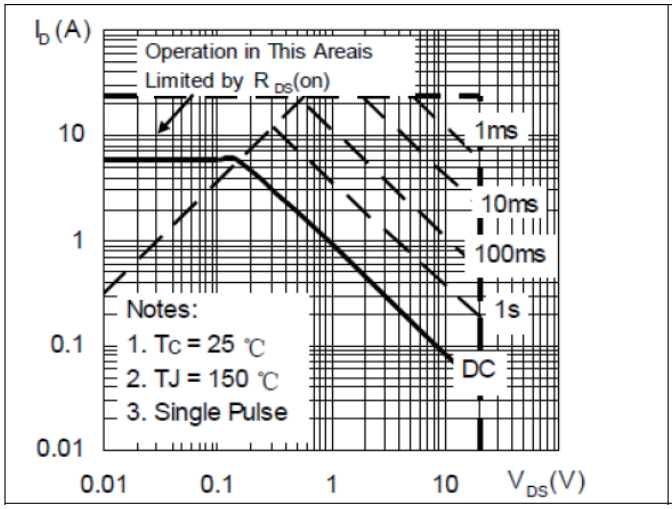


Figure 8: Maximum Drain Current VS. Cas Tempera ture

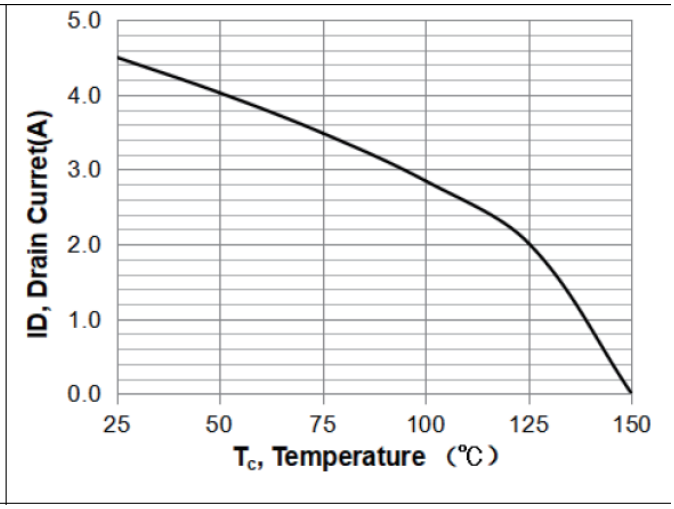
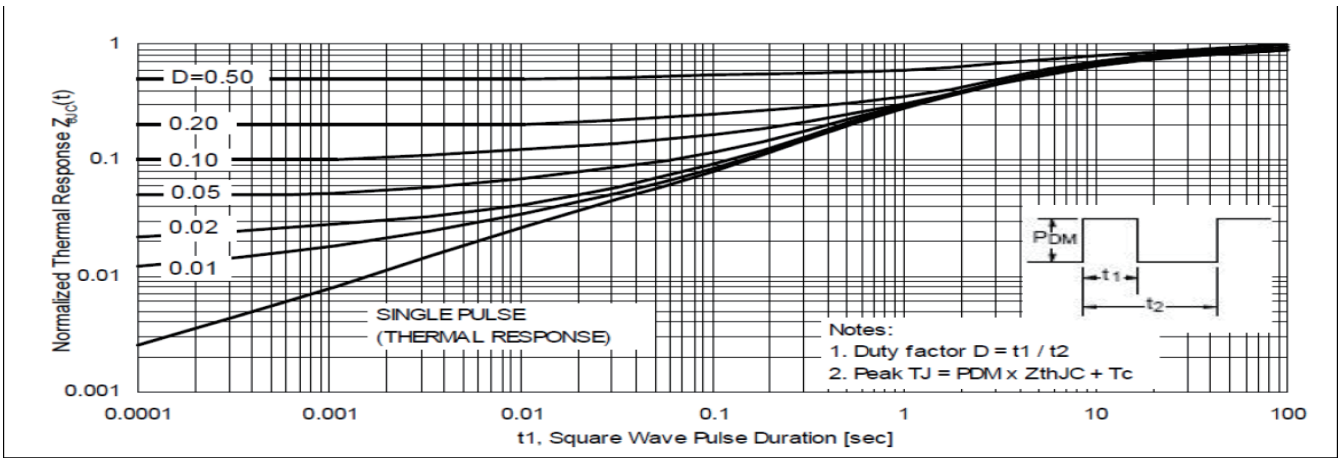


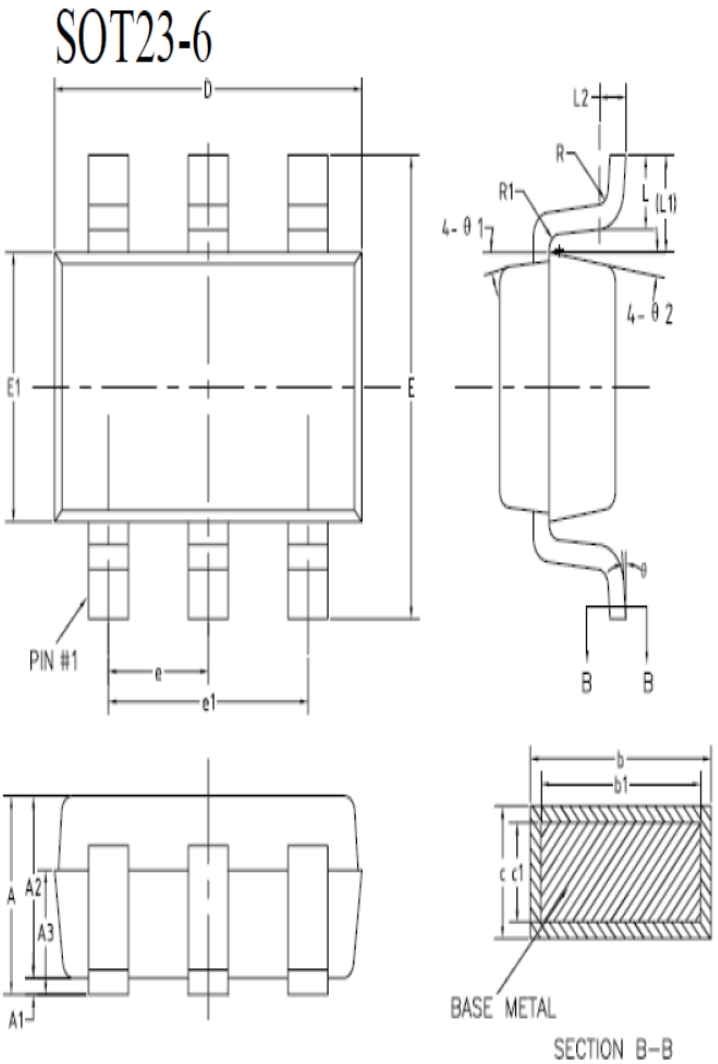
Figure 9: Maximum Transient Thermal Im



Package Mechanical Data-SOT23-6

COMMON DIMENSIONS
(UNITS OF MEASURE=MILLIMETER)

SYMBOL	MIN	NOM	MAX
A	–	–	1.45
A1	0	–	0.15
A2	0.90	1.15	1.30
A3	0.60	0.65	0.70
b	0.39	–	0.49
b1	0.35	0.40	0.45
c	0.08	–	0.22
c1	0.08	0.13	0.20
D	2.80	2.90	3.00
E	2.60	2.80	3.00
E1	1.50	1.60	1.70
e	0.85	0.95	1.05
e1	1.80	1.90	2.00
L	0.35	0.45	0.60
L1	0.60REF		
L2	0.25BSC		
R	0.10	–	–
R1	0.10	–	0.25
θ	0°	–	8°
θ1	7°	9°	11°
θ2	8°	10°	12°



NOTES:
ALL DIMENSIONS REFER TO JEDEC STANDARD MO-178 C
DO NOT INCLUDE MOLD FLASH OR PROTRUSIONS.

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