Datasheet

FS8205A

Dual N-Channel Enhancement Mode Power MOSFET

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Fortune SEMICONDUCTOR CORPORATION

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1. Features

1.1 Low on-resistance

1.1.1 $R_{DS(ON)}$ = 28 mΩ MAX. (V_{GS} = 4.5V, I_D = 4A)

1.1.2 $R_{DS(ON)}$ = 37 mΩ MAX. (V_{GS} = 2.5V, I_D = 3A)

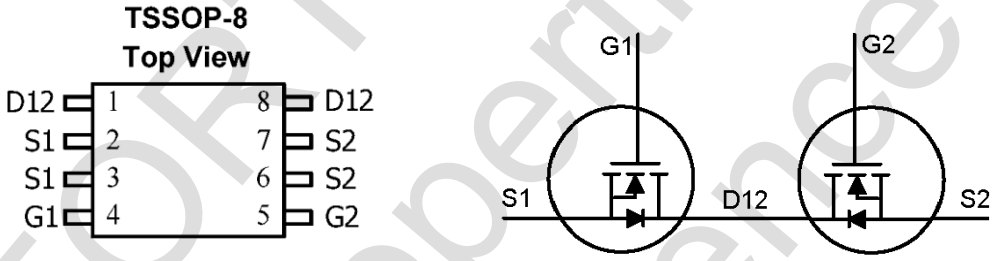
2. Applications

- Li-ion battery management applications

3. Ordering Information

Product Number	Description	Package Type	Quantity/Reel
FS8205A	TSSOP8 package version	TSSOP-8	3,000

4. Pin Assignment



5. Absolute Maximum Ratings

Symbol	Parameter	Rating	Units
VDS	Drain-Source Voltage	20	V
VGS	Gate-Source Voltage	±12	V
ID @TA = 25℃	Continuous Drain Current3	6	A
ID @TA = 70℃	Continuous Drain Current3	5	A
IDM	Pulsed Drain Current1	25	A
PD @TA = 25℃	Total Power Dissipation	1	W
	Linear Derating Factor	0.008	W/℃
TSTG	Storage Temperature Range	-55 to 150	℃
TJ	Operating Junction Temperature Range	-55 to 150	℃

6. Thermal Data

Symbol	Parameter	Value	Unit
Rthj-a	Thermal Resistance Junction-ambient3	Max. 125	℃/W

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7. Electrical Characteristics

Electrical Characteristics @T_j = 25℃ (unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
Static Characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS} = 0V, I_D = 250uA	20	-	-	V
$\Delta BV_{DSS}/\Delta T_j$	Breakdown Voltage Temperature Coefficient	Reference to 25℃, I_D=1mA	-	0.1	-	V/℃
$R_{DS(ON)}$	Static Drain-Source On-Resistance[2]	V_{GS} = 4.5V, I_D = 4A	-	23	28	mΩ
		V_{GS} = 2.5V, I_D = 3A	-	30	37	mΩ
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS}, I_D = 250uA	0.45	-	1.2	V
I_{DSS}	Drain-Source Leakage Current (T_j = 25℃)	V_{DS} =16V, V_{GS} = 0V	-	-	1	uA
	Drain-Source Leakage Current (T_j = 70℃)	V_{DS} =16V, V_{GS} = 0V	-	-	25	uA
I_{GSS}	Gate-Source Leakage	V_{GS} = ±10V	-	-	±0.1	uA

8. Source-Drain Diode

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
I_S	Continuous Source Current (Body Diode)	V_D = V_G = 0V, V_S = 1.2V	-	-	0.83	A
V_{SD}	Forward On Voltage[2]	T_j = 25℃, I_S = 1.25A, V_{GS} = 0V	-	-	1.2	V

Notes：

1. Pulse width limited by Max. junction temperature.
2. Pulse width ≦ 300us, duty cycle ≦ 2%.
3. Surface mounted on 1 in2 copper pad of FR4 board；208℃/W when mounted on Min. copper pad.

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9. Typical Characteristics

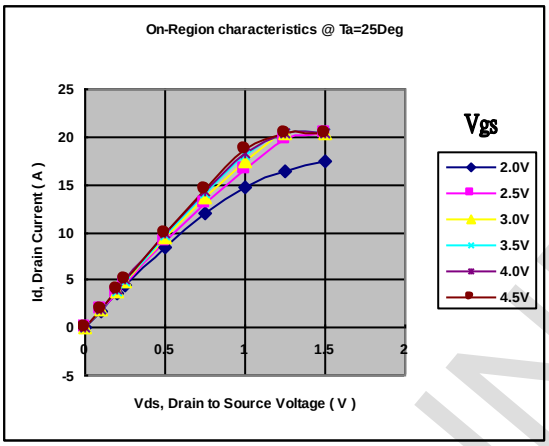


Fig 1. Typical Output Characteristics

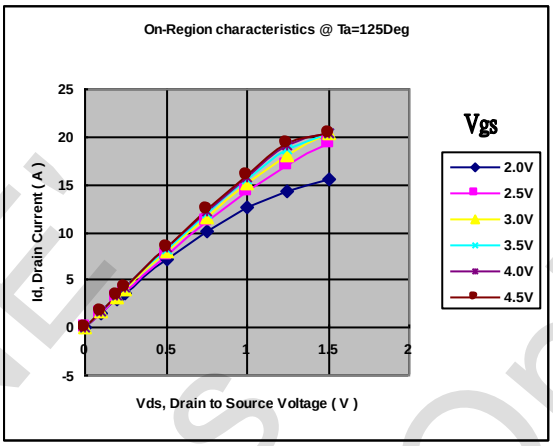


Fig 2. Typical Output Characteristics

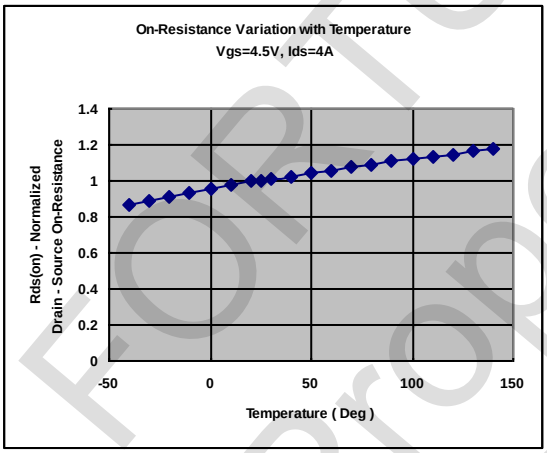


Fig 3. Normalized On-Resistance

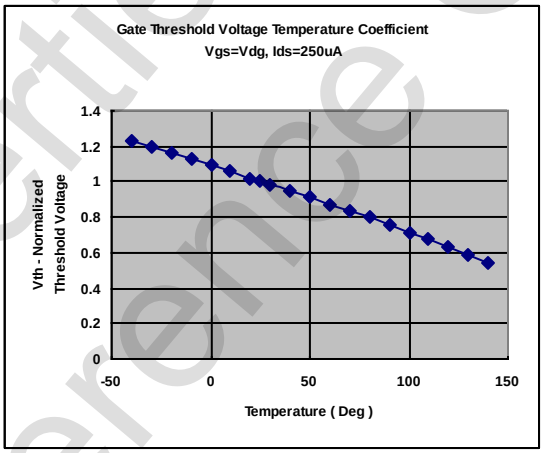


Fig 4. Gate Threshold Variation with Temperature

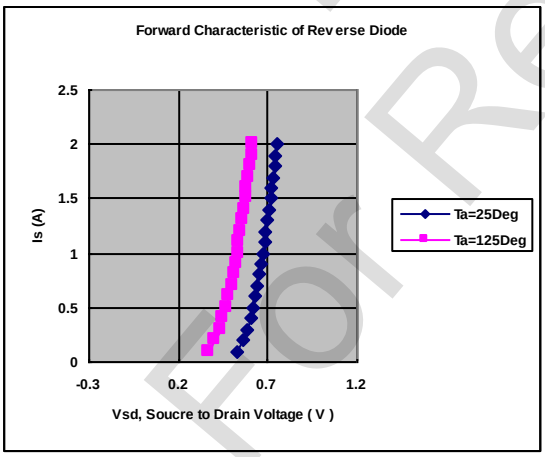
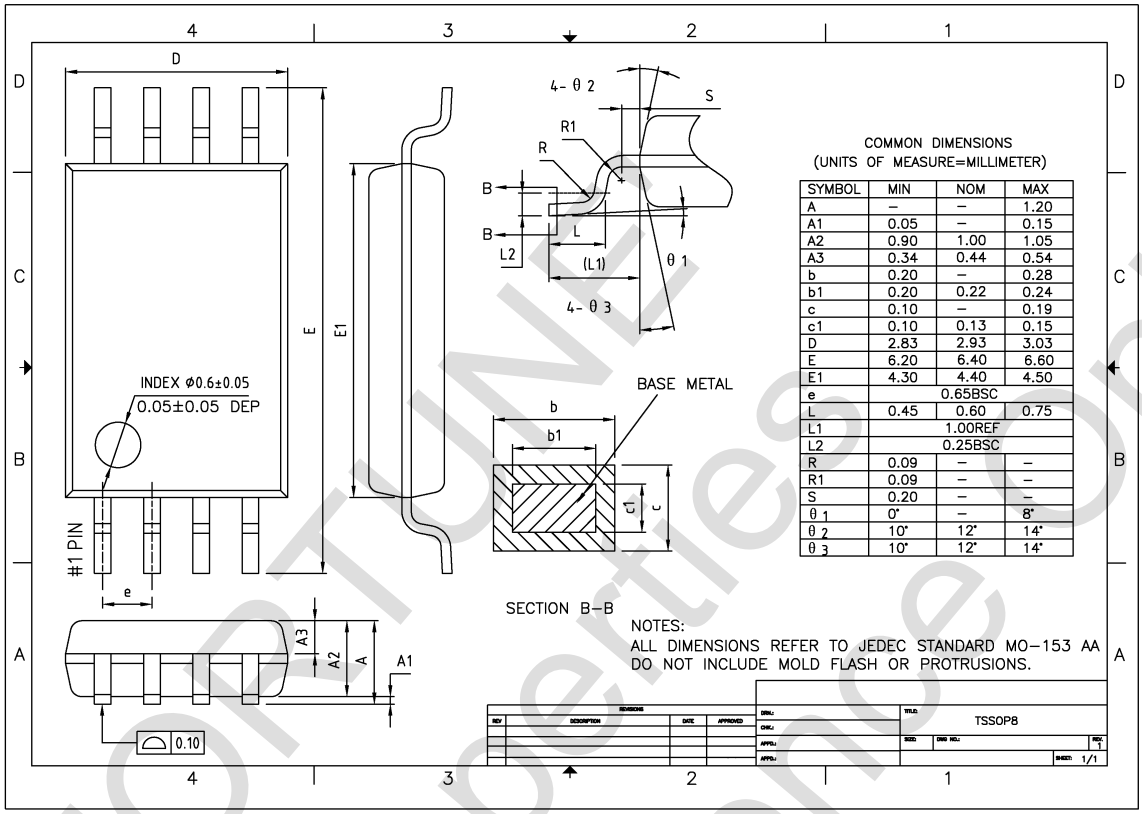


Fig 5. Forward Characteristic of Reverse Diode

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10. Package Information



COMMON DIMENSIONS
(UNITS OF MEASURE=MILLIMETER)

SYMBOL	MIN	NOM	MAX
A	–	–	1.20
A1	0.05	–	0.15
A2	0.90	1.00	1.05
A3	0.34	0.44	0.54
b	0.20	–	0.28
b1	0.20	0.22	0.24
c	0.10	–	0.19
c1	0.10	0.13	0.15
D	2.83	2.93	3.03
E	6.20	6.40	6.60
E1	4.30	4.40	4.50
e		0.65BSC	
L	0.45	0.60	0.75
L1		1.00REF	
L2		0.25BSC	
R	0.09	–	–
R1	0.09	–	–
S	0.20	–	–
θ 1	0°	–	8°
θ 2	10°	12°	14°
θ 3	10°	12°	14°

11. Revision History

Version	Date	Page	Description
1.0	2009/02/10	-	Version 1.0 released
1.1	2009/04/28	3~4	Rds25 TYP 25mohm MAX 32mohm Rds45 TYP 20mohm MAX 25mohm ID @TA = 25℃ 6A ID @TA = 70℃ 5A ID pulse 300μ S 25A
1.2	2009/08/04	3~4	Rds25 TYP 27mohm MAX 35mohm Rds45 TYP 21mohm MAX 25mohm Rds25 ID：3A Rds45 ID：4A
1.3	2010/06/02	3~4	Rds45 TYP 22mohm MAX 27mohm
1.4	2010/06/10	4	IDSS Test Conditions：VDS=16V VGS=0V
1.5	2011/04/27	4	Rds25 TYP：30mohm MAX：37mohm Rds45 TYP：23mohm MAX：28mohm VGS(th) MIN：0.45V MAX：1.2V IGSS MAX：±0.1uA
1.6	2014/05/22	2	Revised company address

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