Datasheet

FS8205A

Dual N-Channel Enhancement Mode Power MOSFET

FSC' Properties For Reference Only

Fortune SEMICONDUCTOR CORPORATION

Fortune Semiconductor Corporation
富晶電子股份有限公司
28F., No.27, Sec. 2, Zhongzheng E. Rd.,
Danshui Town, Taipei County 251, Taiwan
Tel.：886-2-28094742
Fax：886-2-28094874
www.ic-fortune.com

FSC' Properties For Reference Only

This manual contains new product information. **Fortune Semiconductor Corporation** reserves the rights to modify the product specification without further notice. No liability is assumed by **Fortune Semiconductor Corporation** as a result of the use of this product. No rights under any patent accompany the sale of the product

1. Features

1.1 Low on-resistance

1.1.1 $R_{DS(ON)}$ = 25 mΩ MAX. (V_{GS} = 4.5V, I_D = 4A)

1.1.2 $R_{DS(ON)}$ = 35 mΩ MAX. (V_{GS} = 2.5V, I_D = 3A)

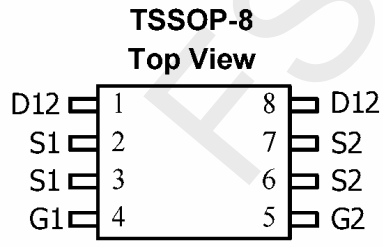
2. Applications

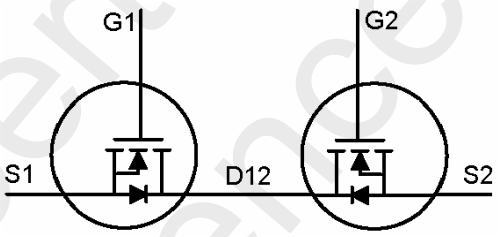
- Li-ion battery management applications

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

FSC Properties For Reference Only

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	-	21	25	mΩ
		V_{GS} = 2.5V, I_D = 3A	-	27	35	mΩ
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS}, I_D = 250uA	0.5	-	1.0	V
I_{DSS}	Drain-Source Leakage Current (T_j = 25℃)	V_{DS} =20V, V_{GS} = 0V	-	-	1	uA
	Drain-Source Leakage Current (T_j = 70℃)	V_{DS} =20V, V_{GS} = 0V	-	-	25	uA
I_{GSS}	Gate-Source Leakage	V_{GS} = ±10V	-	-	±10	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 in^2 copper pad of FR4 board；208℃/W when mounted on Min. copper pad.

FSC Properties For Reference Only

9. Typical Characteristics

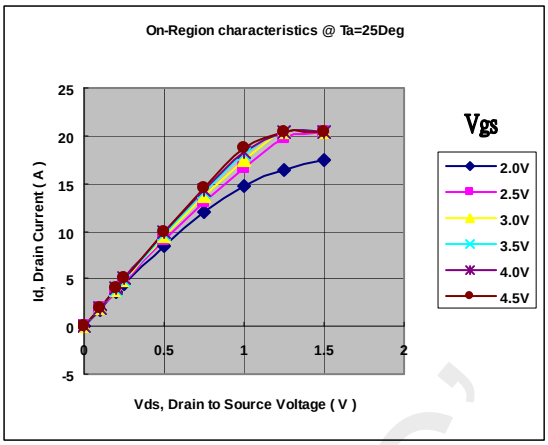


Fig 1. Typical Output Characteristics

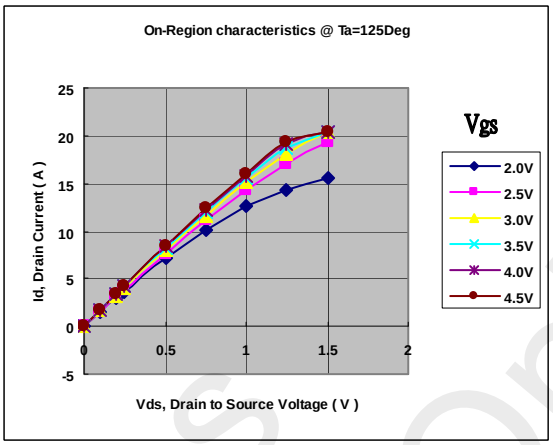


Fig 2. Typical Output Characteristics

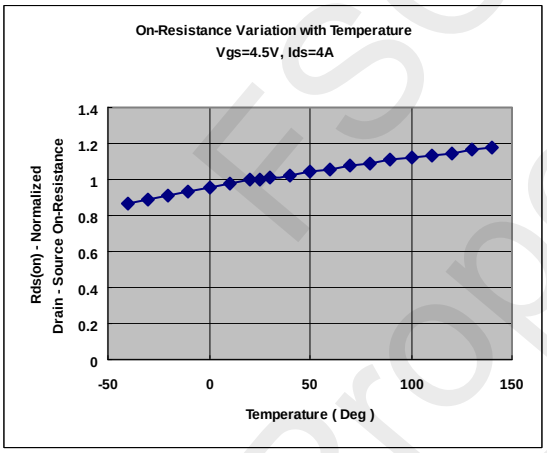


Fig 3. Normalized On-Resistance

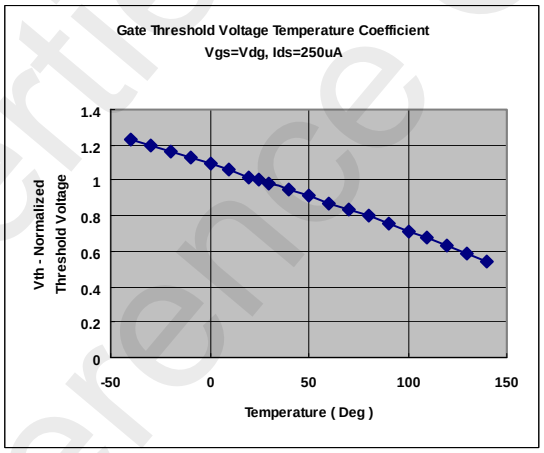


Fig 4. Gate Threshold Variation with Temperature

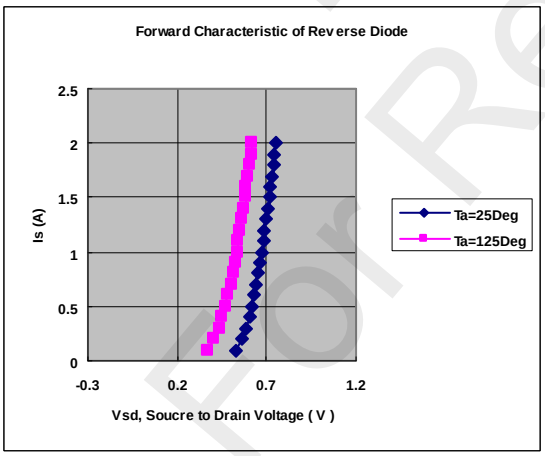
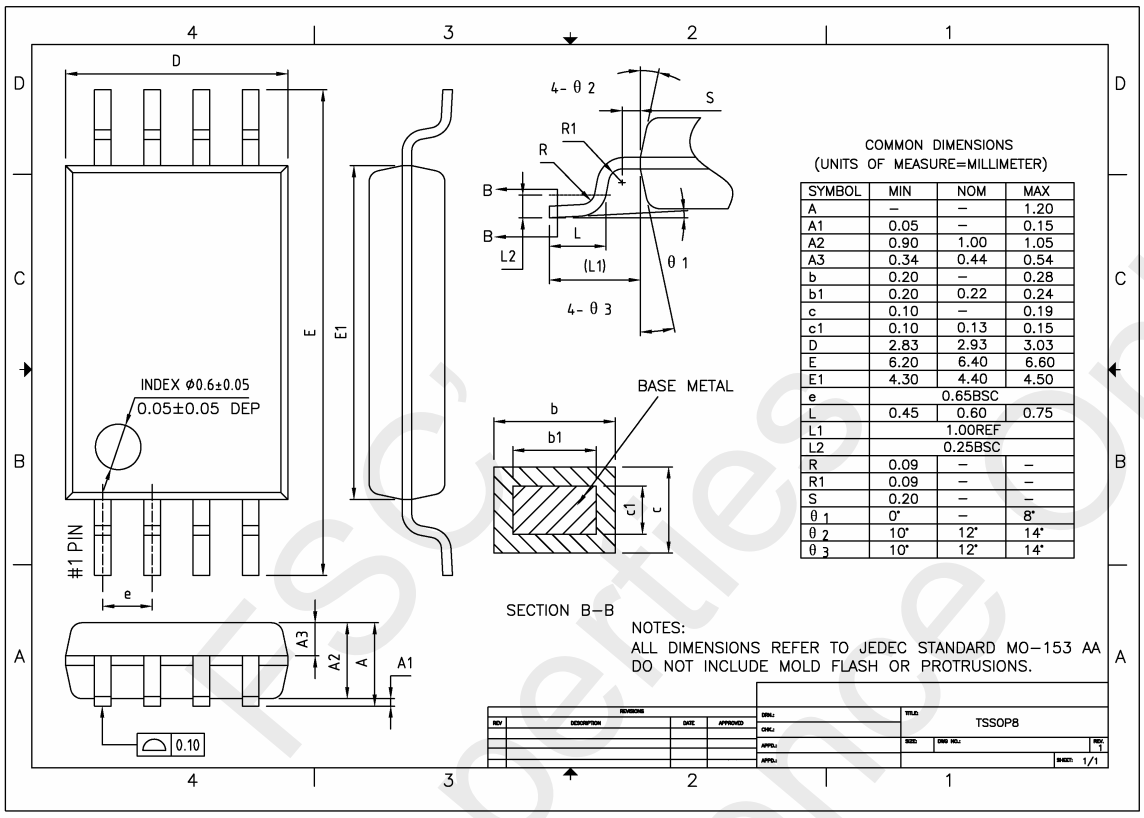


Fig 5. Forward Characteristic of Reverse Diode

FSC Properties For Reference Only

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 300μS 25A
1.2	2009/08/04	3~4	Rds25 TYP 27mohm MAX 35mohm Rds45 TYP 21mohm MAX 25mohm Rds25 ID：3A Rds45 ID：4A

FSC Properties For Reference Only