



HAT1108C

Silicon P Channel MOS FET
Power Switching

REJ03G1234-0500

Rev.5.00

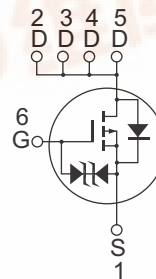
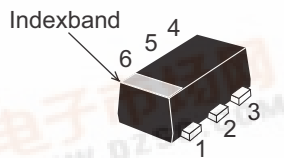
Aug 30, 2006

Features

- Low on-resistance
 $R_{DS(on)} = 155 \text{ m}\Omega$ typ. (at $V_{GS} = -10 \text{ V}$)
- Low drive current.
- 4.5 V gate drive devices.
- High density mounting

Outline

RENESAS Package code: PWSF0006JA-A
(Package name: CMFPAK-6)



1. Source
2. Drain
3. Drain
4. Drain
5. Drain
6. Gate

Absolute Maximum Ratings

($T_a = 25^\circ\text{C}$)

Item	Symbol	Ratings	Unit
Drain to Source voltage	V_{DSS}	-30	V
Gate to Source voltage	V_{GSS}	-20 / +10	V
Drain current	I_D	-1.5	A
Drain peak current	I_D (pulse) ^{Note1}	-6	A
Body - Drain diode reverse drain current	I_{DR}	-1.5	A
Channel dissipation	P_{ch} ^{Note 2}	830	mW
Channel temperature	T_{ch}	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

Notes: 1. $PW \leq 10 \mu\text{s}$, duty cycle $\leq 1\%$

2. When using the glass epoxy board. (FR4 $40 \times 40 \times 1.6\text{mm}$), $T_a = 25^\circ\text{C}$



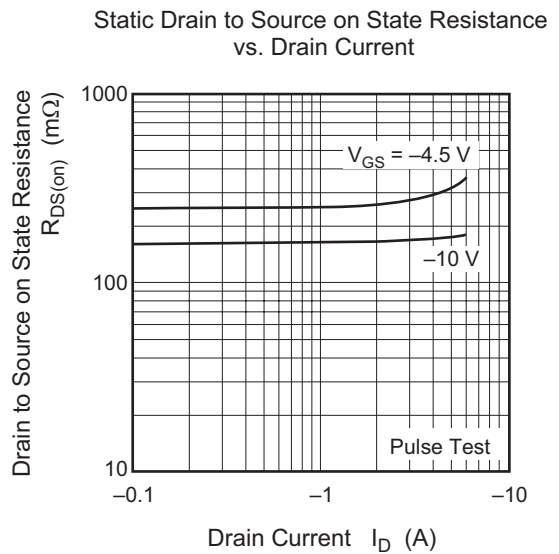
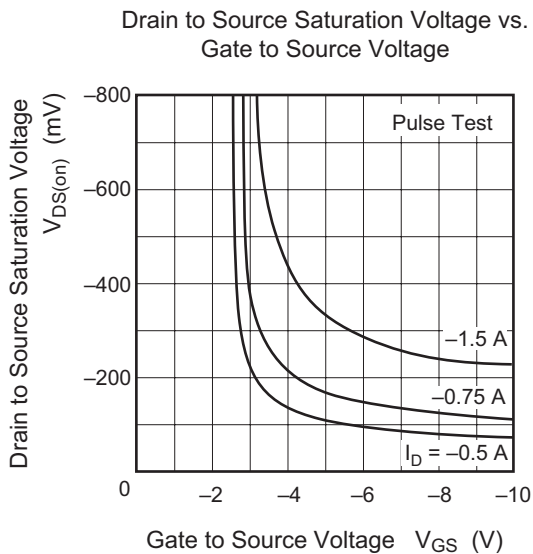
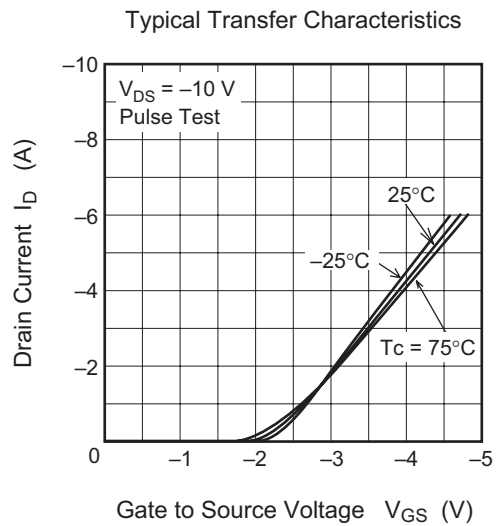
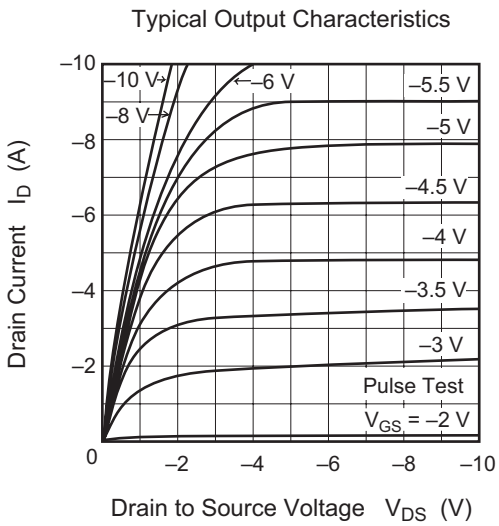
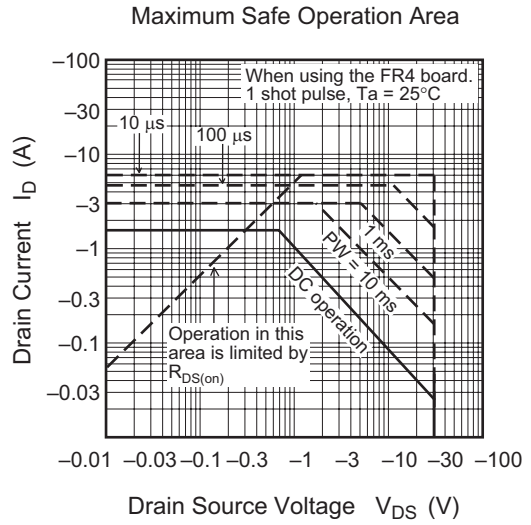
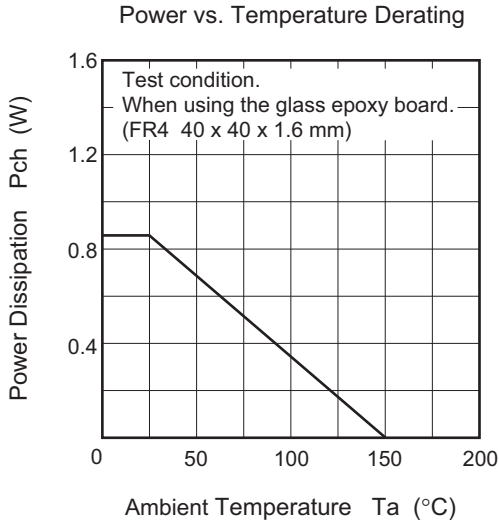
Electrical Characteristics

(Ta = 25°C)

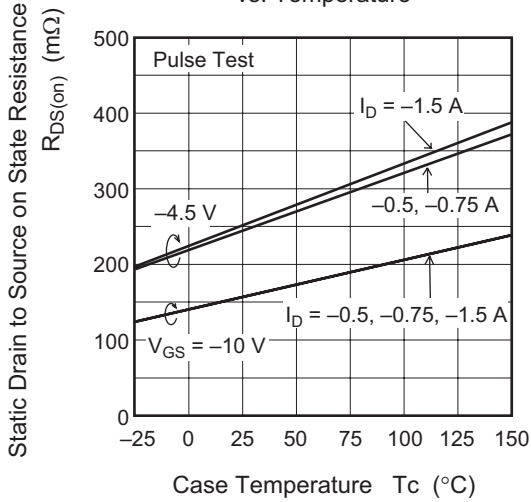
Item	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain to Source breakdown voltage	$V_{(BR)DSS}$	-30	—	—	V	$I_D = -10 \text{ mA}$, $V_{GS} = 0$
Gate to Source breakdown voltage	$V_{(BR)GSS}$	-20 +10	—	—	V	$I_G = \pm 100 \text{ }\mu\text{A}$, $V_{DS} = 0$
Gate to Source leakage current	I_{GSS}	—	—	± 10	μA	$V_{GS} = -16/ +8 \text{ V}$, $V_{DS} = 0$
Drain to Source leakage current	I_{DSS}	—	—	-1	μA	$V_{DS} = -30 \text{ V}$, $V_{GS} = 0$
Gate to Source cutoff voltage	$V_{GS(th)}$	-0.5	—	-2.0	V	$I_D = -1 \text{ mA}$, $V_{DS} = -10 \text{ V}$ ^{Note4}
Drain to Source on state resistance	$R_{DS(on)}$	—	155	194	$\text{m}\Omega$	$I_D = -0.75\text{A}$, $V_{GS} = -10 \text{ V}$ ^{Note4}
		—	245	356	$\text{m}\Omega$	$I_D = -0.75\text{A}$, $V_{GS} = -4.5 \text{ V}$ ^{Note4}
Forward transfer admittance	$ y_{fs} $	0.65	1	—	S	$I_D = -0.75\text{A}$, $V_{DS} = -10 \text{ V}$ ^{Note4}
Input capacitance	C_{iss}	—	160	—	pF	$V_{DS} = -10 \text{ V}$, $V_{GS} = 0$, $f = 1 \text{ MHz}$
Output capacitance	C_{oss}	—	50	—	pF	
Reverse transfer capacitance	C_{rss}	—	30	—	pF	
Total gate charge	Q_g	—	3	—	nC	$V_{DS} = -10 \text{ V}$, $V_{GS} = -10 \text{ V}$, $I_D = -1.5 \text{ A}$
Gate to Source charge	Q_{gs}	—	0.2	—	nC	
Gate to Drain charge	Q_{gd}	—	0.6	—	nC	
Turn - on delay time	$t_{d(on)}$	—	20	—	ns	$V_{DS} = -10 \text{ V}$, $V_{GS} = -10 \text{ V}$, $I_D = -0.75 \text{ A}$, $R_L = 13.3 \text{ }\Omega$, $R_g = 4.7 \text{ }\Omega$
Rise time	t_r	—	13	—	ns	
Turn - off delay time	$t_{d(off)}$	—	28	—	ns	
Fall time	t_f	—	5	—	ns	
Body - Drain diode forward voltage	V_{DF}	—	-0.85	-1.2	V	$I_F = -1.5 \text{ A}$, $V_{GS} = 0$

Notes: 4. Pulse test

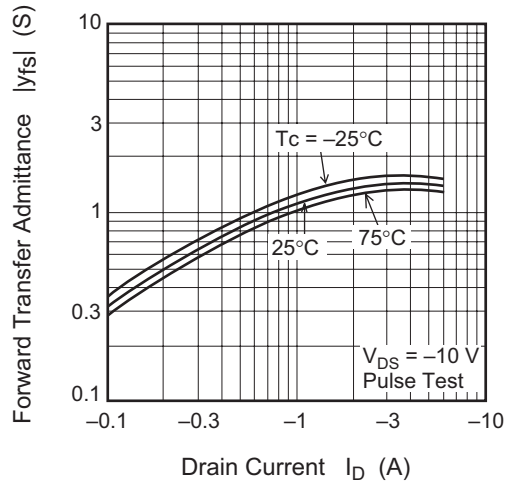
Main Characteristics



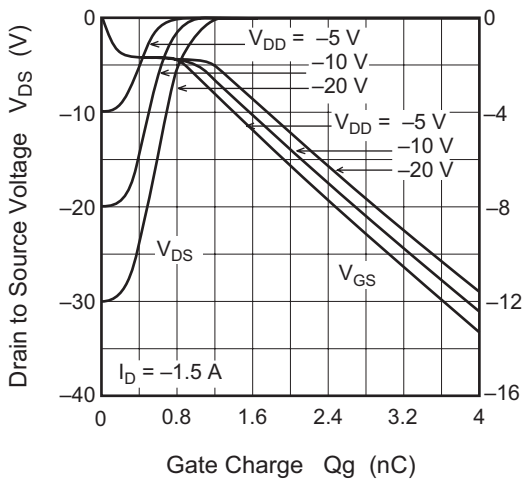
Static Drain to Source on State Resistance vs. Temperature



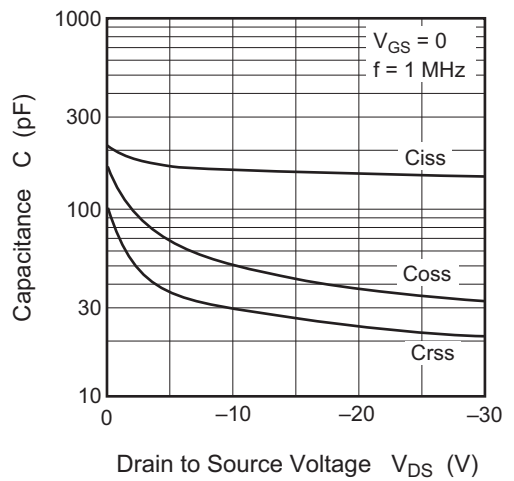
Forward Transfer Admittance vs. Drain Current



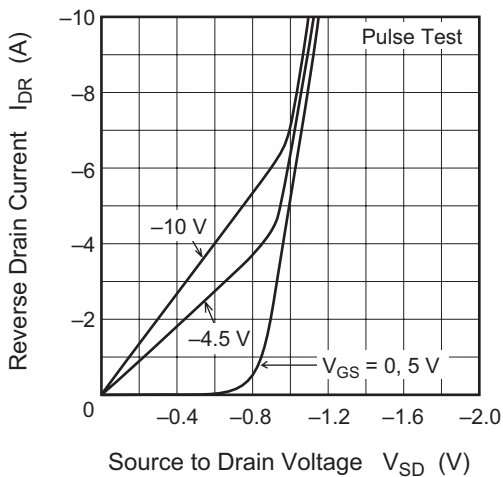
Dynamic Input Characteristics



Typical Capacitance vs. Drain to Source Voltage

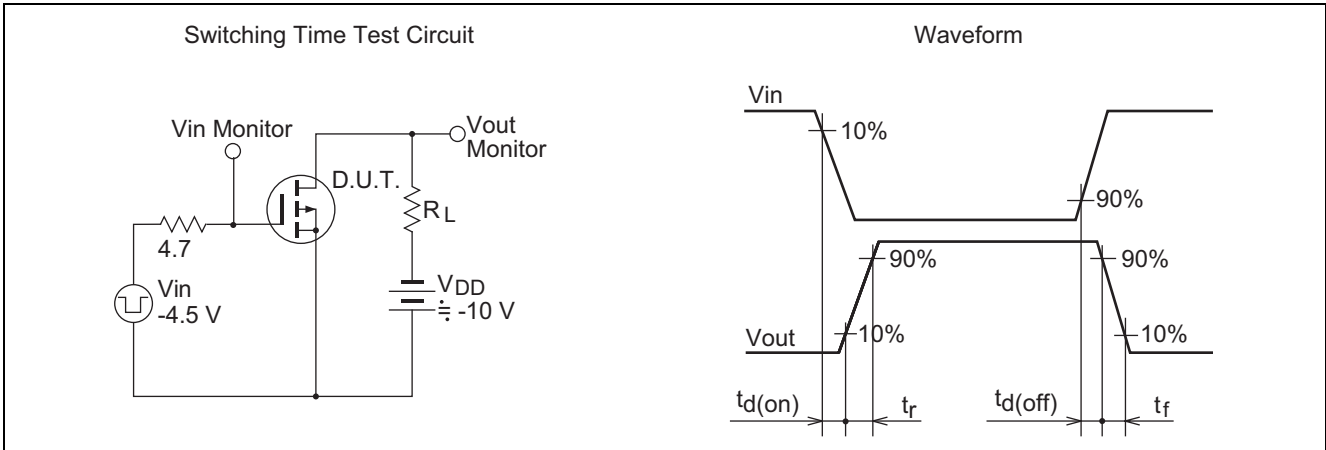


Reverse Drain Current vs. Source to Drain Voltage

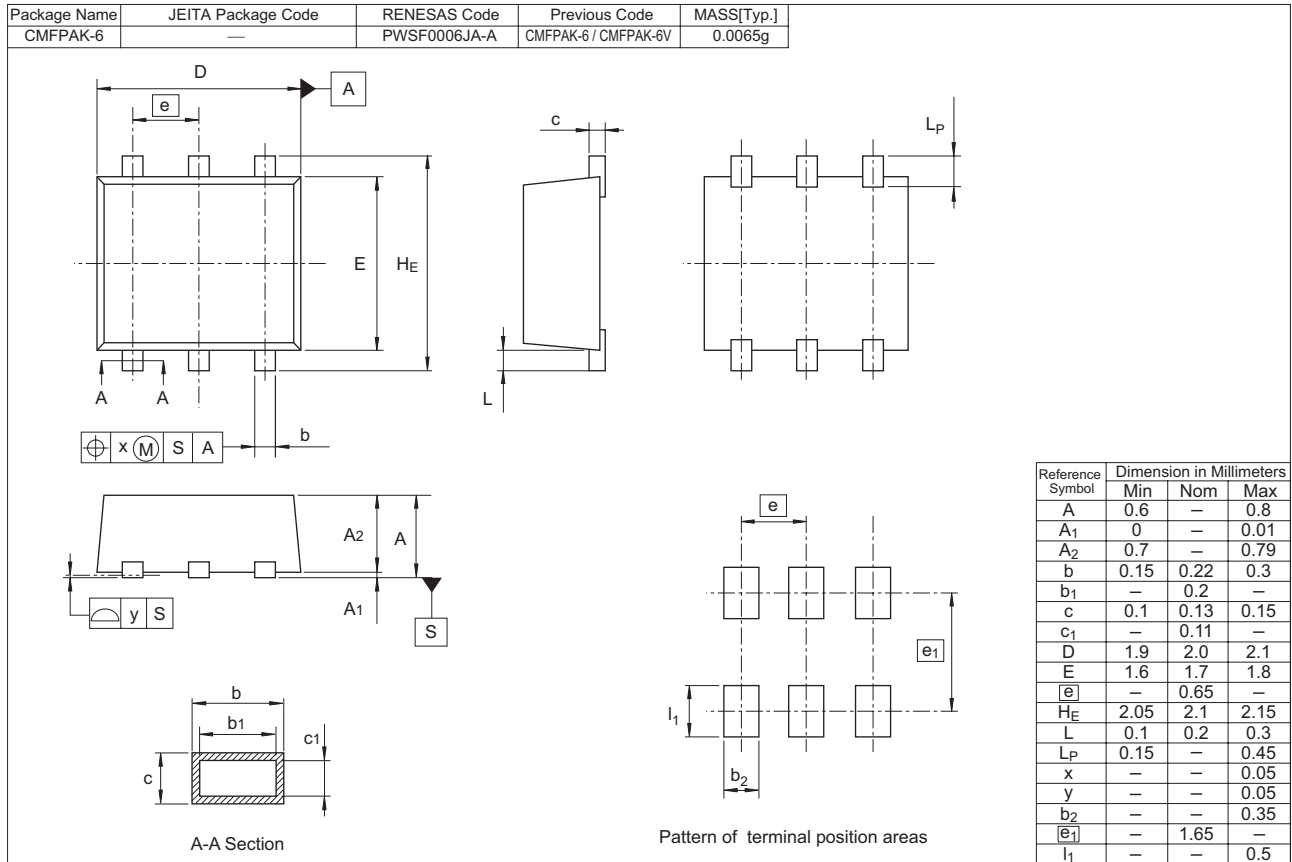


Switching Characteristics





Package Dimensions



Ordering Information

Part Name	Quantity	Shipping Container
HAT1108C-EL-E	3000 pcs	Taping

Note: For some grades, production may be terminated. Please contact the Renesas sales office to check the state of production before ordering the product.

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Renesas Technology America, Inc.

450 Holger Way, San Jose, CA 95134-1368, U.S.A
Tel: <1> (408) 382-7500, Fax: <1> (408) 382-7501

Renesas Technology Europe Limited

Dukes Meadow, Millboard Road, Bourne End, Buckinghamshire, SL8 5FH, U.K.
Tel: <44> (1628) 585-100, Fax: <44> (1628) 585-900

Renesas Technology (Shanghai) Co., Ltd.

Unit 204, 205, AZIACenter, No.1233 Lujiazui Ring Rd, Pudong District, Shanghai, China 200120
Tel: <86> (21) 5877-1818, Fax: <86> (21) 6887-7898

Renesas Technology Hong Kong Ltd.

7th Floor, North Tower, World Finance Centre, Harbour City, 1 Canton Road, Tsimshatsui, Kowloon, Hong Kong
Tel: <852> 2265-6688, Fax: <852> 2730-6071

Renesas Technology Taiwan Co., Ltd.

10th Floor, No.99, Fushing North Road, Taipei, Taiwan
Tel: <886> (2) 2715-2888, Fax: <886> (2) 2713-2999

Renesas Technology Singapore Pte. Ltd.

1 Harbour Front Avenue, #06-10, Keppel Bay Tower, Singapore 098632
Tel: <65> 6213-0200, Fax: <65> 6278-8001

Renesas Technology Korea Co., Ltd.

Kukje Center Bldg. 18th Fl., 191, 2-ka, Hangang-ro, Yongsan-ku, Seoul 140-702, Korea
Tel: <82> (2) 796-3115, Fax: <82> (2) 796-2145

Renesas Technology Malaysia Sdn. Bhd

Unit 906, Block B, Menara Amcorp, Amcorp Trade Centre, No.18, Jalan Persiaran Barat, 46050 Petaling Jaya, Selangor Darul Ehsan, Malaysia
Tel: <603> 7955-9390, Fax: <603> 7955-9510