

HAT2206C

Silicon N Channel MOS FET Power Switching

REJ03G1238-0500

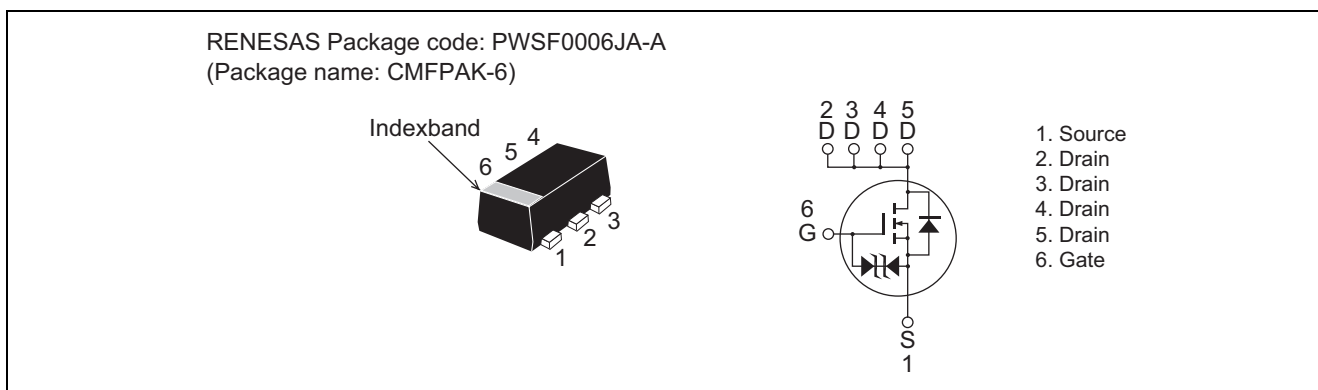
Rev.5.00

Jan 26, 2006

Features

- Low on-resistance
 $R_{DS(on)} = 65 \text{ m}\Omega$ typ. (at $V_{GS} = 4.5 \text{ V}$)
- Low drive current.
- High density mounting
- 1.8 V gate drive devices.

Outline



Absolute Maximum Ratings

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

Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	12	V
Gate to source voltage	V_{GSS}	± 8	V
Drain current	I_D	2	A
Drain peak current	I_D (pulse) ^{Note 1}	8	A
Body - Drain diode reverse drain current	I_{DR}	2	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 $40 \times 40 \times 1.6 \text{ mm}$)

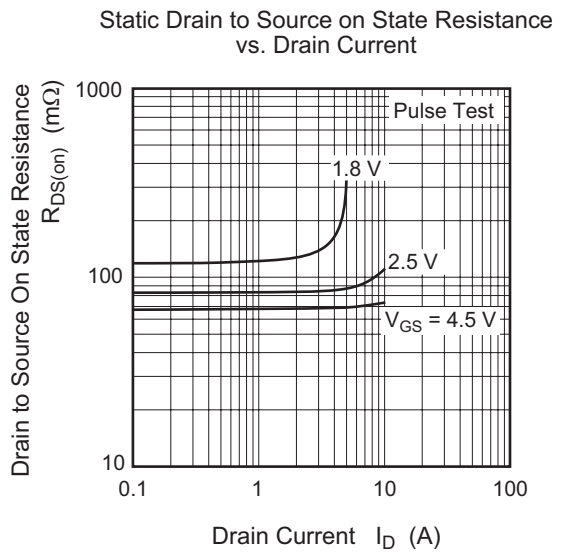
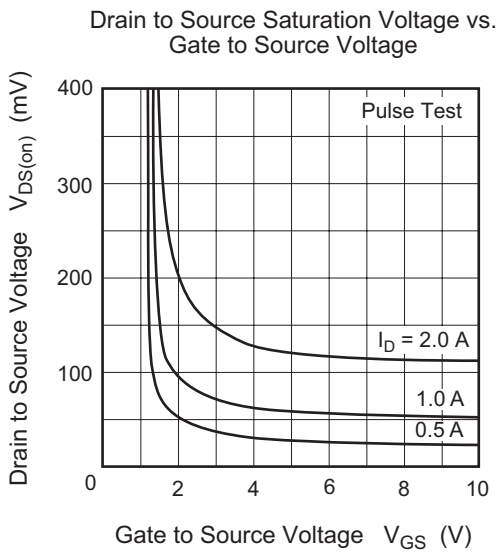
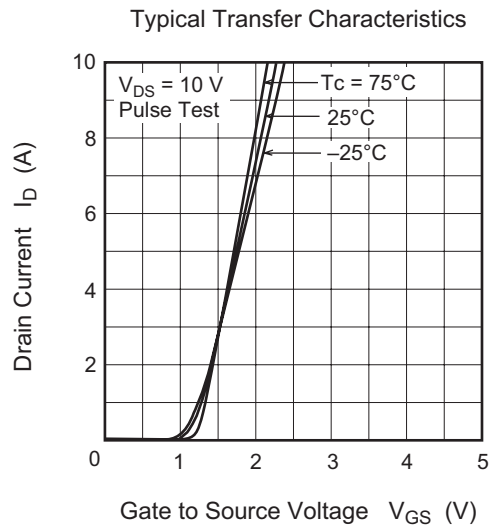
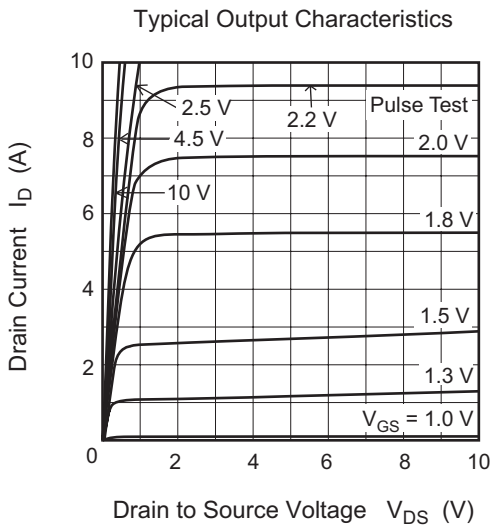
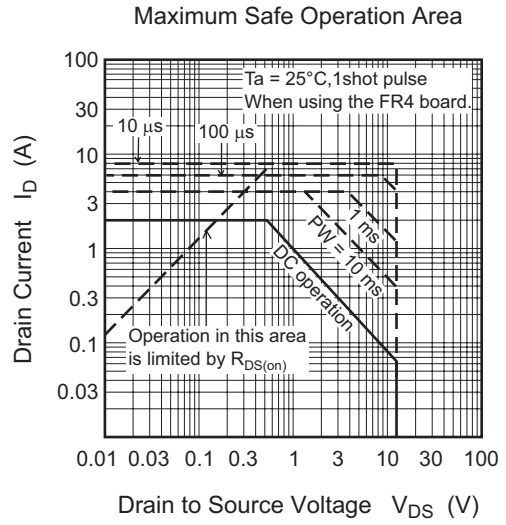
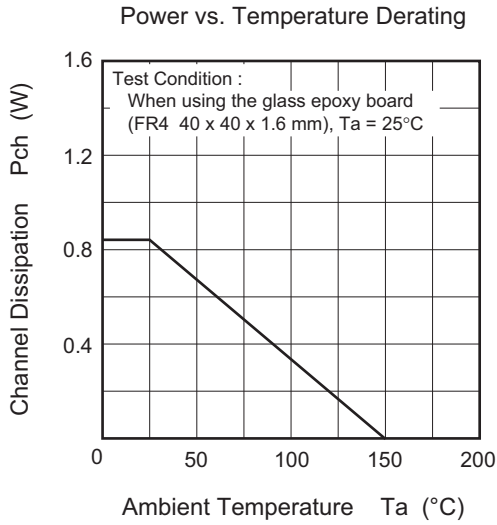
Electrical Characteristics

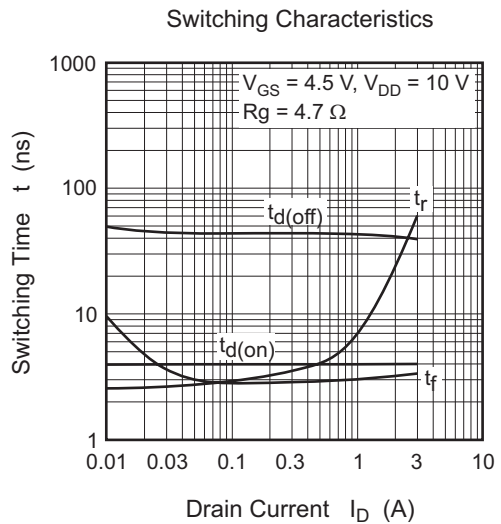
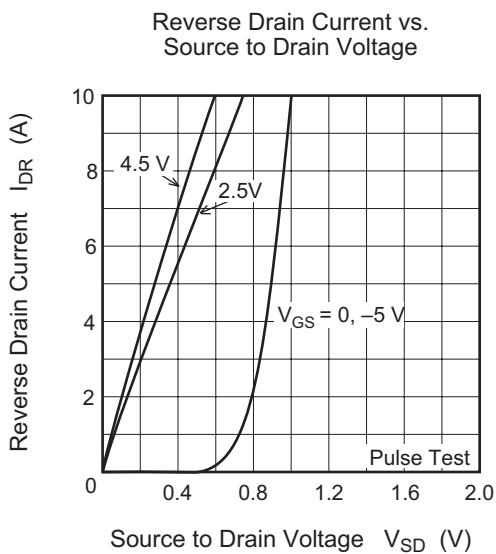
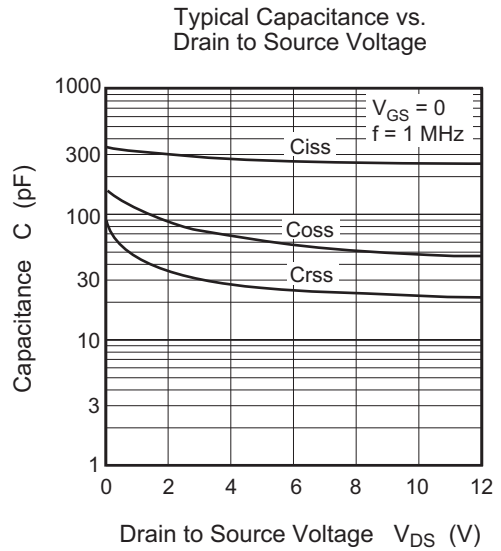
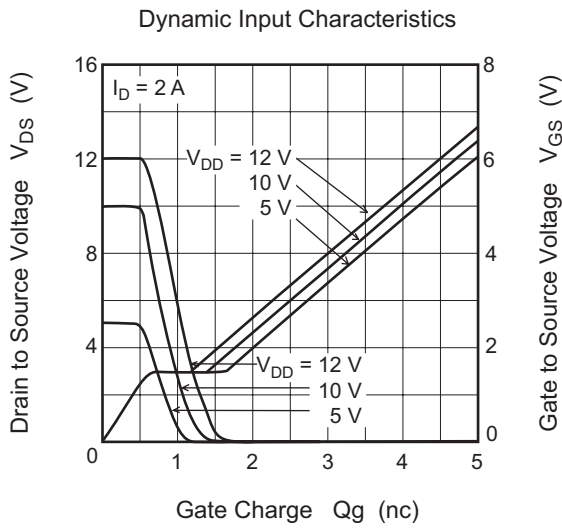
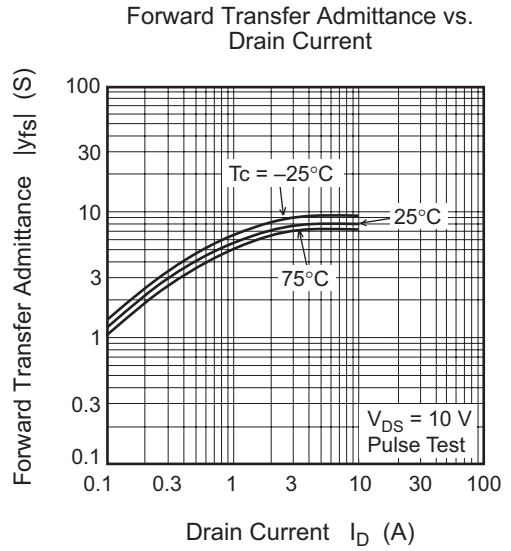
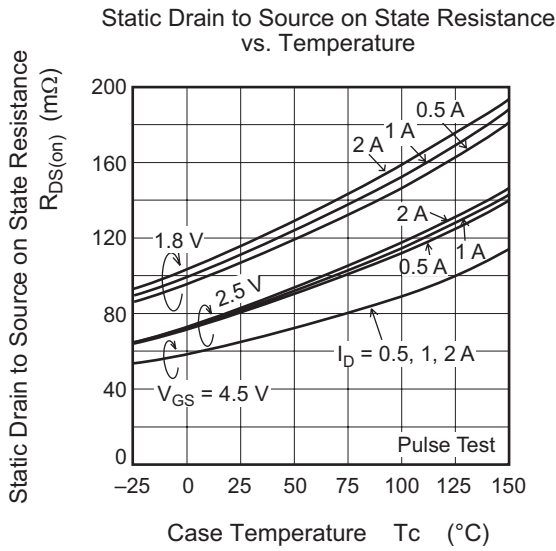
(Ta = 25°C)

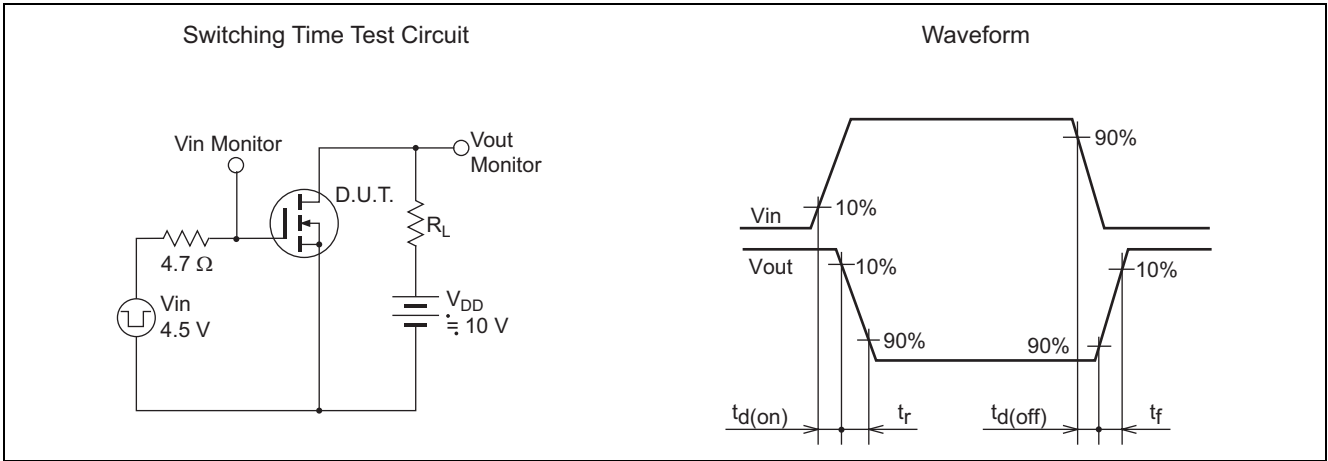
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to Source breakdown voltage	$V_{(BR)DSS}$	12	—	—	V	$I_D = 10 \text{ mA}$, $V_{GS} = 0$
Gate to Source breakdown voltage	$V_{(BR)GSS}$	± 8	—	—	V	$I_G = \pm 10 \text{ }\mu\text{A}$, $V_{DS} = 0$
Gate to Source leakage current	I_{GSS}	—	—	± 10	μA	$V_{GS} = \pm 6.4 \text{ V}$, $V_{DS} = 0$
Drain to Source leakage current	I_{DSS}	—	—	1	μA	$V_{DS} = 10 \text{ V}$, $V_{GS} = 0$
Gate to Source cutoff voltage	$V_{GS(th)}$	0.3	—	1.2	V	$V_{DS} = 10 \text{ V}$, $I_D = 1 \text{ mA}$
Drain to Source on state resistance	$R_{DS(on)}$	—	65	85	m Ω	$I_D = 1 \text{ A}$, $V_{GS} = 4.5 \text{ V}$ ^{Note3}
		—	81	114	m Ω	$I_D = 1 \text{ A}$, $V_{GS} = 2.5 \text{ V}$ ^{Note3}
		—	113	170	m Ω	$I_D = 1 \text{ A}$, $V_{GS} = 1.8 \text{ V}$ ^{Note3}
Forward transfer admittance	$ y_{fs} $	3.5	5.5	—	S	$I_D = 1 \text{ A}$, $V_{GS} = 10 \text{ V}$ ^{Note3}
Input capacitance	C_{iss}	—	260	—	pF	$V_{GS} = 0$, $f = 1 \text{ MHz}$, $V_{DS} = 10 \text{ V}$
Output capacitance	C_{oss}	—	46	—	pF	
Reverse transfer capacitance	C_{rss}	—	22	—	pF	
Total gate charge	Q_g	—	3.5	—	nC	$V_{GS} = 4.5 \text{ V}$, $V_{DS} = 10 \text{ V}$, $I_D = 2 \text{ A}$
Gate to Source charge	Q_{gs}	—	0.7	—	nC	
Gate to Drain charge	Q_{gd}	—	0.7	—	nC	
Turn - on delay time	$t_{d(on)}$	—	4	—	ns	$V_{GS} = 4.5 \text{ V}$, $I_D = 1 \text{ A}$, $V_{DD} = 10 \text{ V}$, $R_L = 10 \text{ }\Omega$, $R_g = 4.7 \text{ }\Omega$
Rise time	t_r	—	7	—	ns	
Turn - off delay time	$t_{d(off)}$	—	43	—	ns	
Fall time	t_f	—	3	—	ns	
Body - Drain diode forward voltage	V_{DF}	—	0.8	1.1	V	$I_F = 2 \text{ A}$, $V_{GS} = 0$ ^{Note3}

Notes: 3. Pulse test

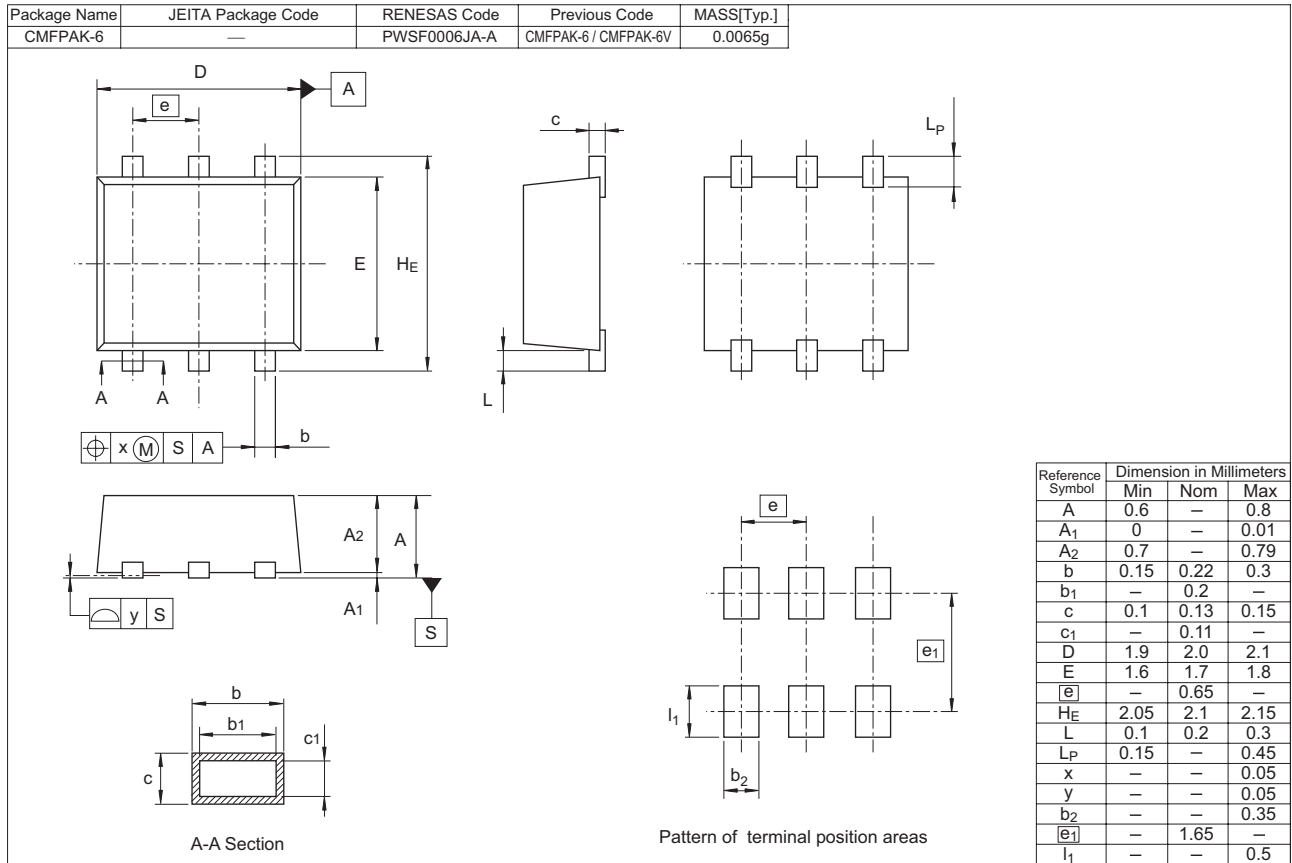
Main Characteristics







Package Dimensions



Ordering Information

Part Name	Quantity	Shipping Container
HAT2206C-EL-E	3000 pcs	Taping

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450 Holger Way, San Jose, CA 95134-1368, U.S.A
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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