

HAT2217C

Silicon N Channel MOS FET Power Switching

REJ03G0449-0300

Rev.3.00

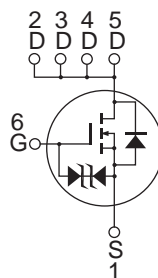
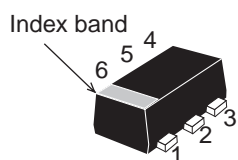
May 19.2005

Features

- Low on-resistance
 $R_{DS(on)} = 105 \text{ m}\Omega$ typ. (at $V_{GS} = 4.5 \text{ V}$)
- Low drive current.
- High density mounting
- 4.5 V gate drive devices.

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}	60	V
Gate to Source voltage	V_{GSS}	+20 / -10	V
Drain current	I_D	3	A
Drain peak current	I_D (pulse) ^{Note 1}	12	A
Body - Drain diode reverse Drain current	I_{DR}	3	A
Channel dissipation	P_{ch} ^{Note 2}	1.25	W
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 × 40 × 1.6 mm), $PW \leq 5 \text{ s}$

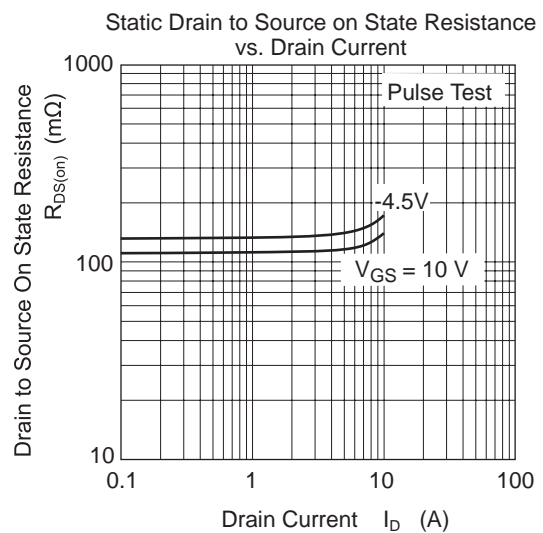
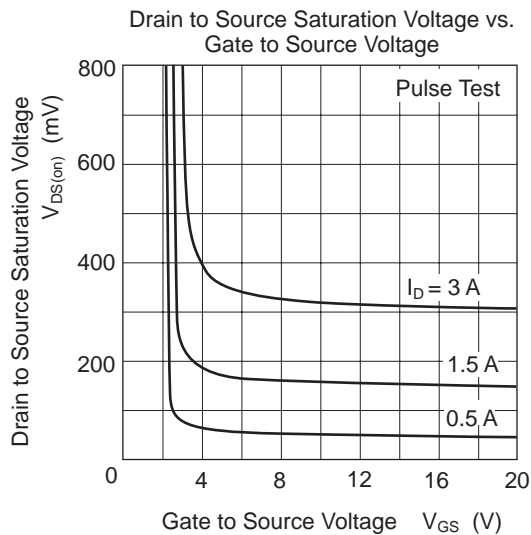
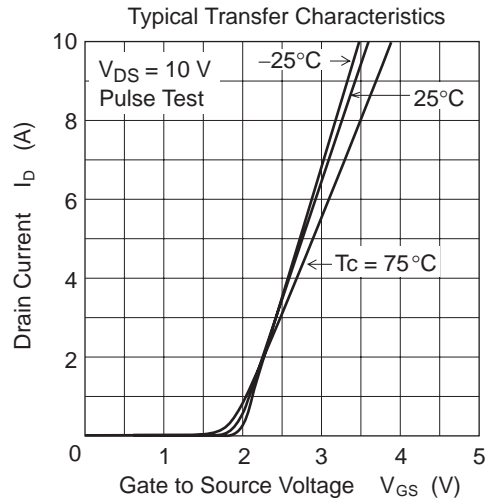
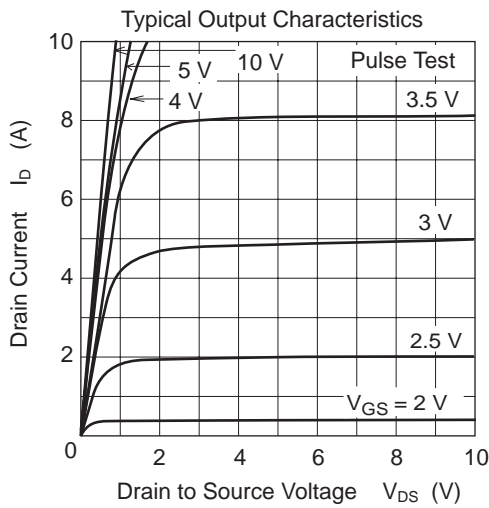
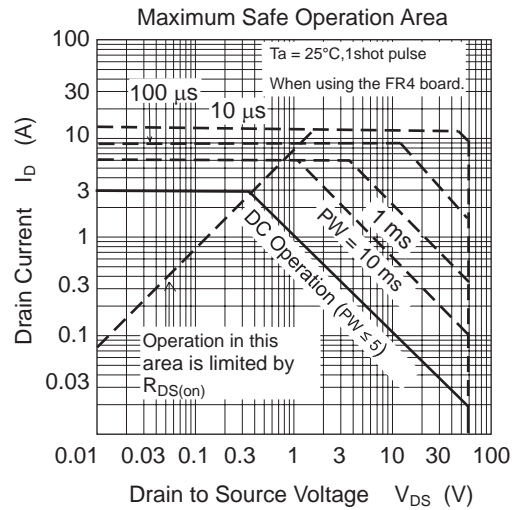
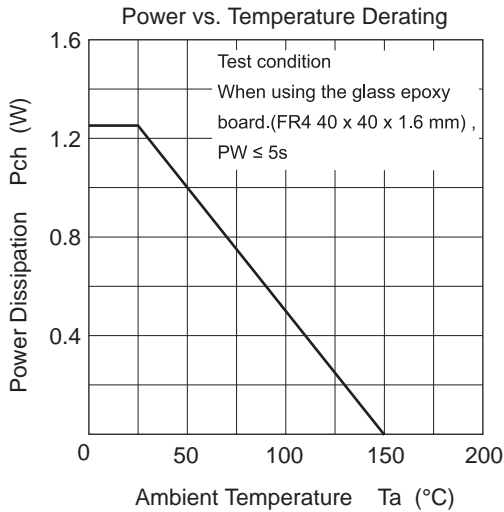
Electrical Characteristics

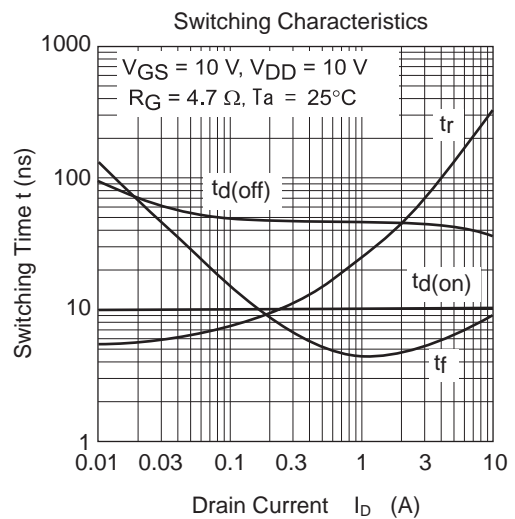
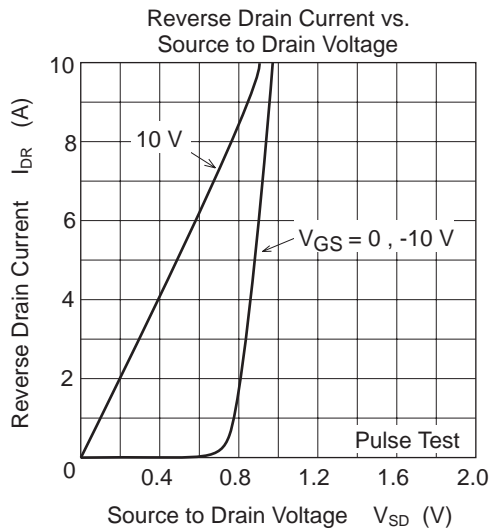
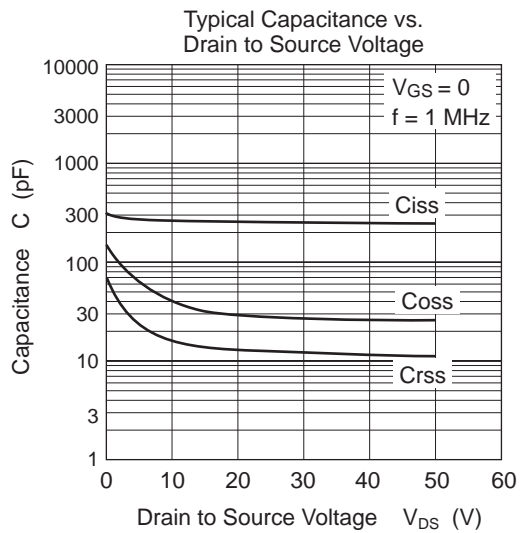
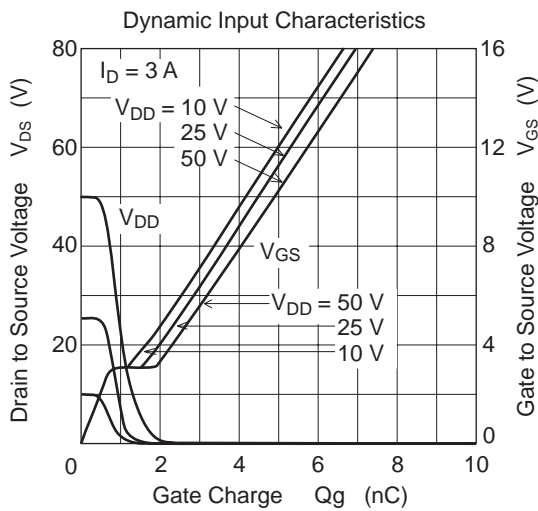
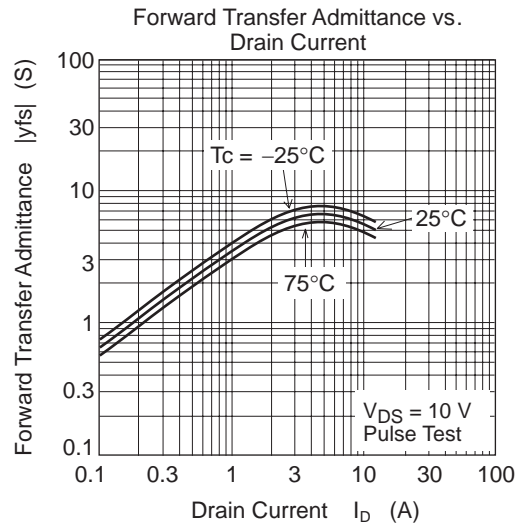
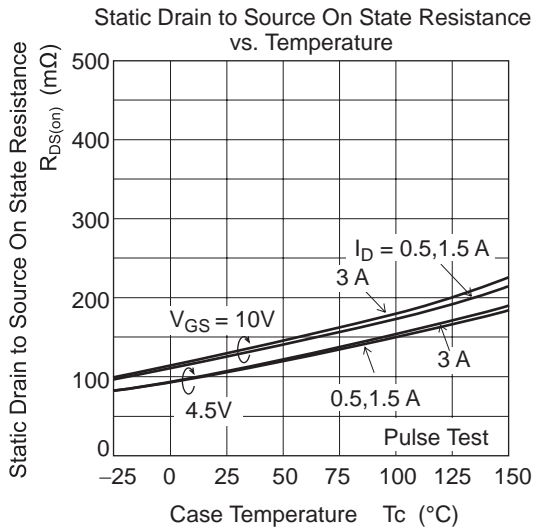
(Ta = 25°C)

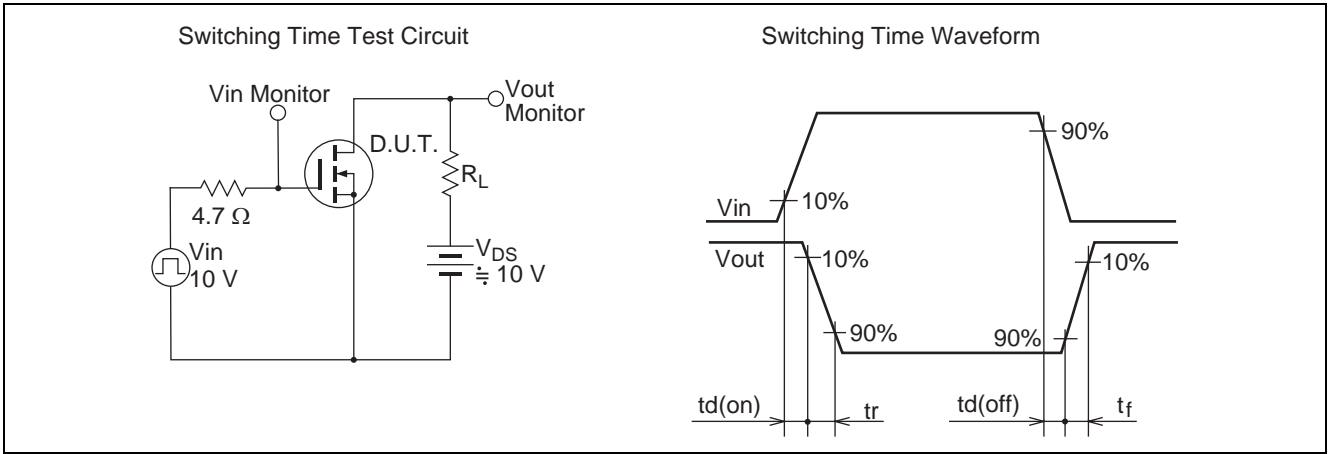
Item	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain to Source breakdown voltage	$V_{(BR)DSS}$	60	—	—	V	$I_D = 10 \text{ mA}$, $V_{GS} = 0$
Gate to Source breakdown voltage	$V_{(BR)GSS}$	+20 -10	—	—	V	$I_G = \pm 100 \text{ }\mu\text{A}$, $V_{DS} = 0$
Gate to Source leakage current	I_{GSS}	—	—	± 10	μA	$V_{GS} = 16 / -8 \text{ V}$, $V_{DS} = 0$
Drain to Source leakage current	I_{DSS}	—	—	1	μA	$V_{DS} = 60 \text{ V}$, $V_{GS} = 0$
Gate to Source cutoff voltage	$V_{GS(th)}$	1	—	2	V	$I_D = 1 \text{ mA}$, $V_{DS} = 10 \text{ V}$ ^{Note3}
Drain to Source on state resistance	$R_{DS(on)}$	—	105	132	m Ω	$I_D = 1.5 \text{ A}$, $V_{GS} = 10 \text{ V}$ ^{Note3}
		—	126	183	m Ω	$I_D = 1.5 \text{ A}$, $V_{GS} = 4.5 \text{ V}$ ^{Note3}
Forward transfer admittance	$ y_{fs} $	2.8	4.3	—	S	$I_D = 1.5 \text{ A}$, $V_{GS} = 10 \text{ V}$ ^{Note3}
Input capacitance	C_{iss}	—	275	—	pF	$V_{GS} = 0$
Output capacitance	C_{oss}	—	40	—	pF	$f = 1 \text{ MHz}$
Reverse transfer capacitance	C_{rss}	—	16	—	pF	$V_{DS} = 10 \text{ V}$
Total gate charge	Q_g	—	4.5	—	nC	$V_{GS} = 10 \text{ V}$
Gate to Source charge	Q_{gs}	—	0.8	—	nC	$V_{DS} = 10 \text{ V}$
Gate to Drain charge	Q_{gd}	—	0.7	—	nC	$I_D = 3 \text{ A}$
Turn - on delay time	$t_{d(on)}$	—	5	—	ns	$V_{GS} = 10 \text{ V}$
Rise time	t_r	—	11	—	ns	$I_D = 1.5 \text{ A}$
Turn - off delay time	$t_{d(off)}$	—	35	—	ns	$V_{DD} = 10 \text{ V}$
Fall time	t_f	—	3	—	ns	$R_L = 6.6 \text{ }\Omega$, $R_g = 4.7 \text{ }\Omega$
Body - Drain diode forward voltage	V_{DF}	—	0.85	1.25	V	$I_F = 3 \text{ A}$, $V_{GS} = 0$

Notes: 3. Pulse test

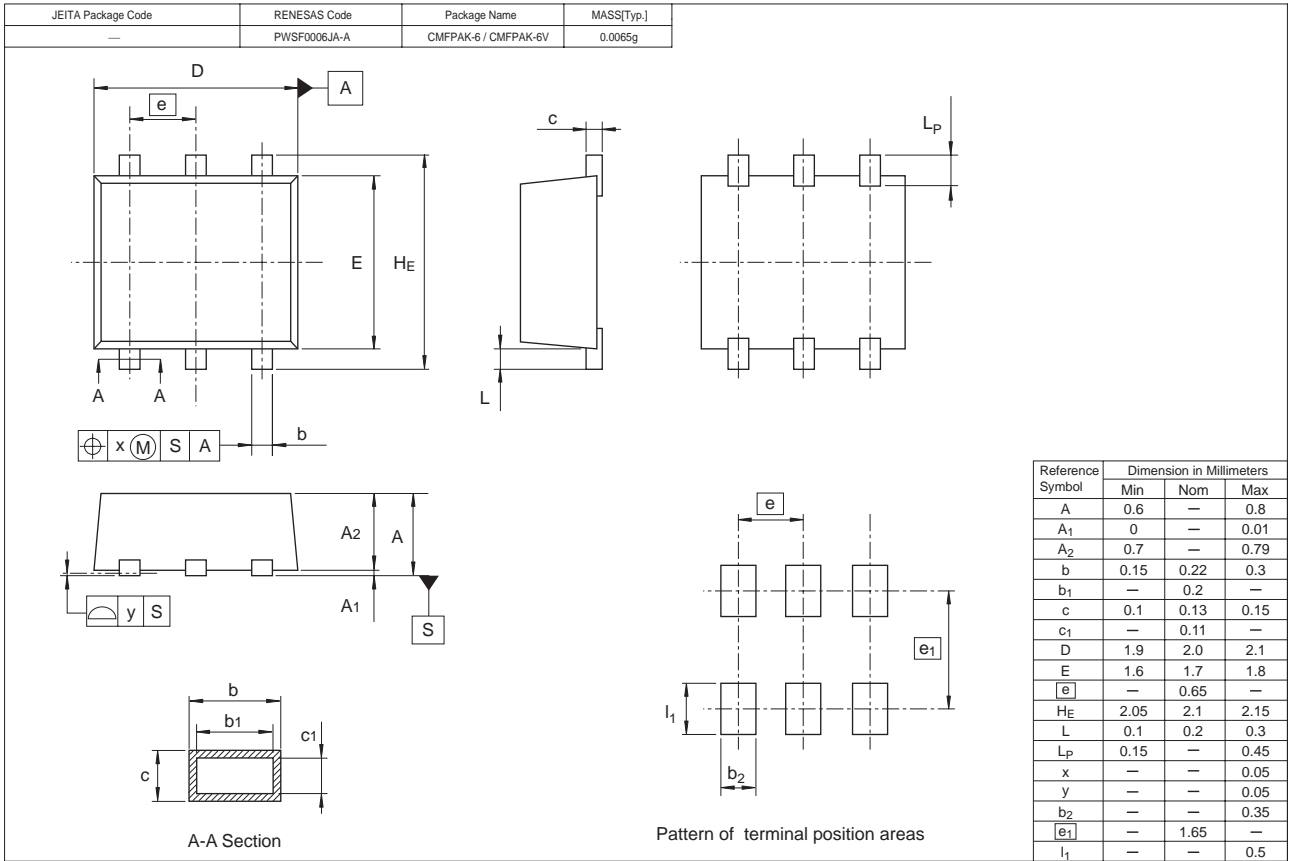
Main Characteristics







Package Dimensions



Ordering Information

Part Name	Quantity	Shipping Container
HAT2217C-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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