

HAT1026R

Silicon P Channel Power MOS FET
High Speed Power Switching

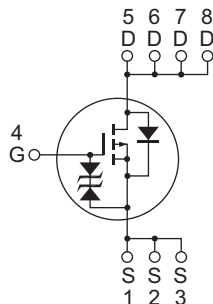
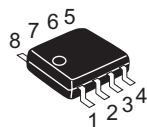
REJ03G1148-1000
(Previous: ADE-208-457H)
Rev.10.00
Sep 07, 2005

Features

- Low on-resistance
- Capable of 4 V gate drive
- Low drive current
- High density mounting

Outline

RENESAS Package code: PRSP0008DD-D
(Package name: SOP-8 <FP-8DAV>)



1, 2, 3 Source
4 Gate
5, 6, 7, 8 Drain

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Value	Unit
Drain to source voltage	V_{DSS}	-30	V
Gate to source voltage	V_{GSS}	±20	V
Drain current	I_D	-7	A
Drain peak current	$I_{D (pulse)}$ ^{Note 1}	-56	A
Body-drain diode reverse drain current	I_{DR}	-7	A
Channel dissipation	P_{ch} ^{Note 2}	2.5	W
Channel temperature	T_{ch}	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

Notes: 1. $PW \leq 10 \mu s$, duty cycle $\leq 1\%$ 2. When using the glass epoxy board (FR4 40 × 40 × 1.6 mm), $PW \leq 10 s$

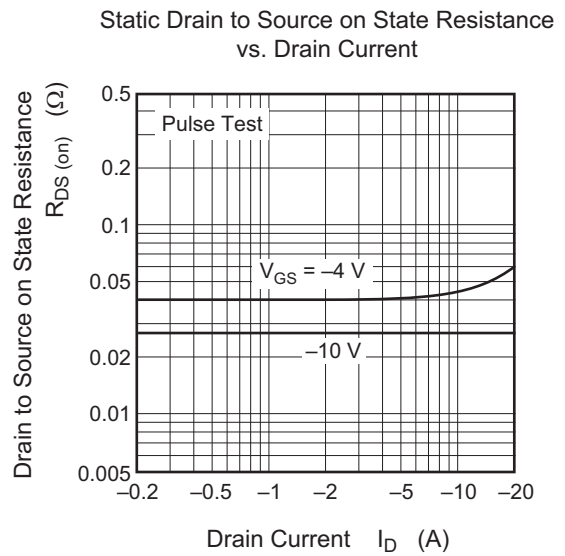
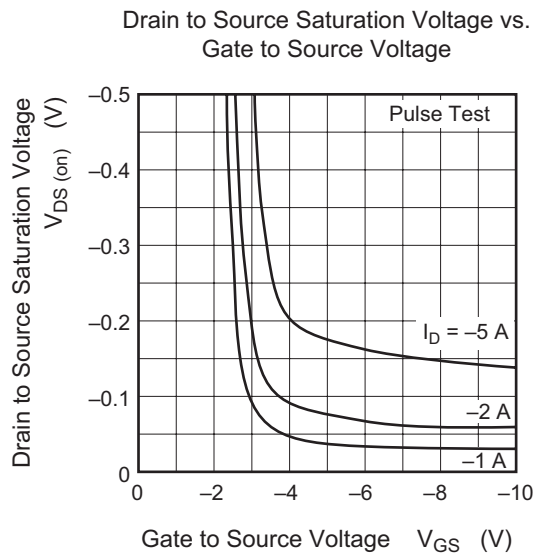
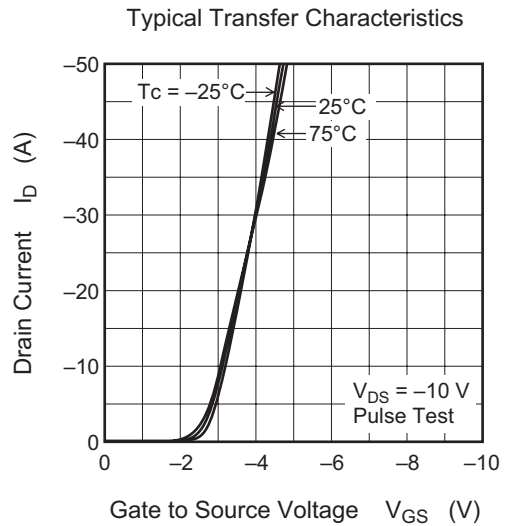
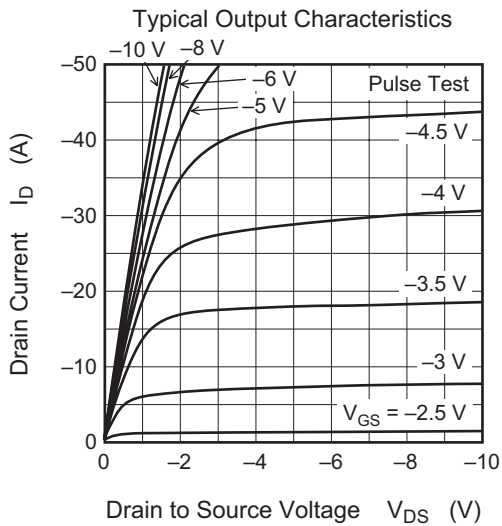
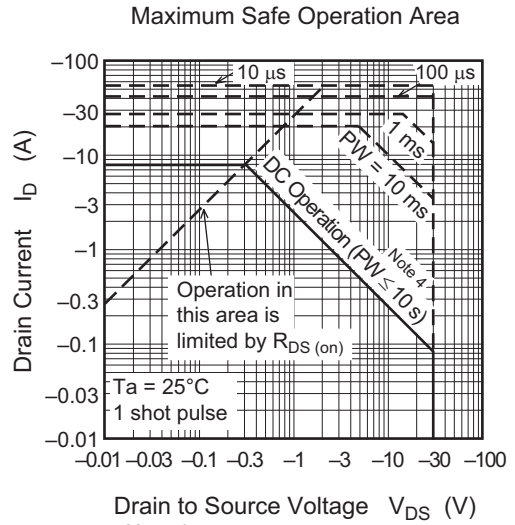
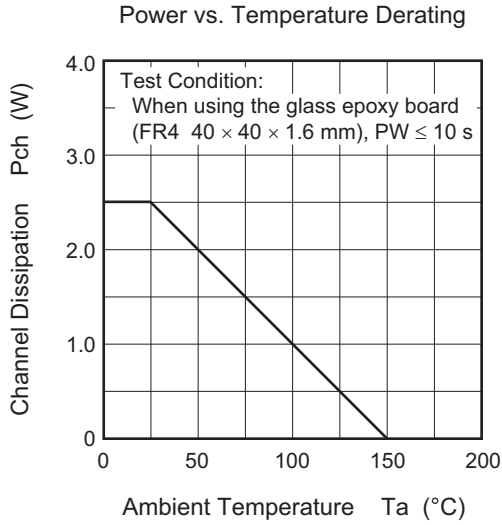
Electrical Characteristics

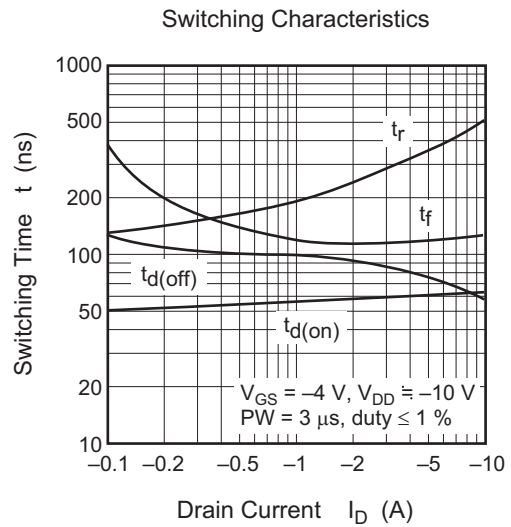
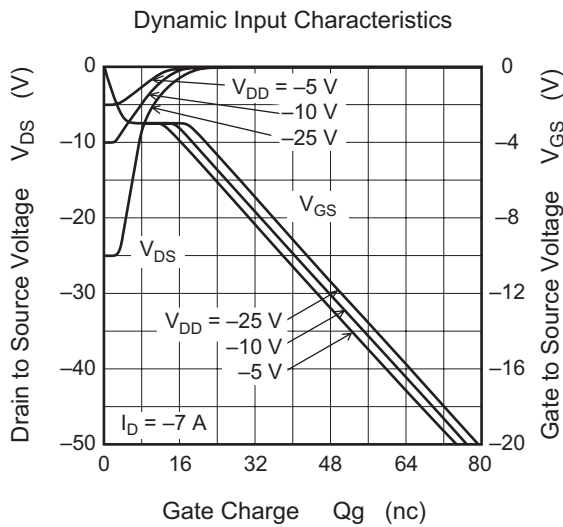
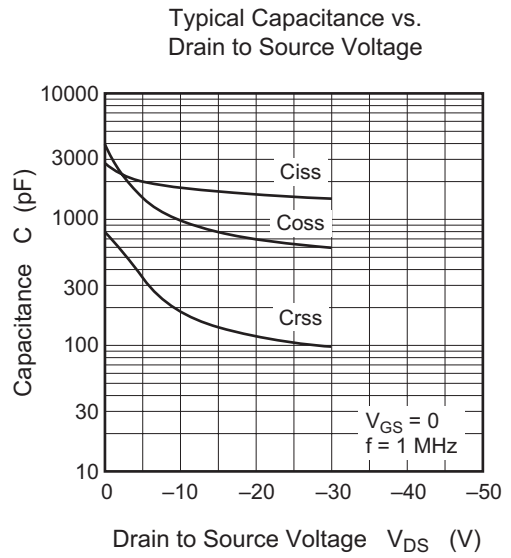
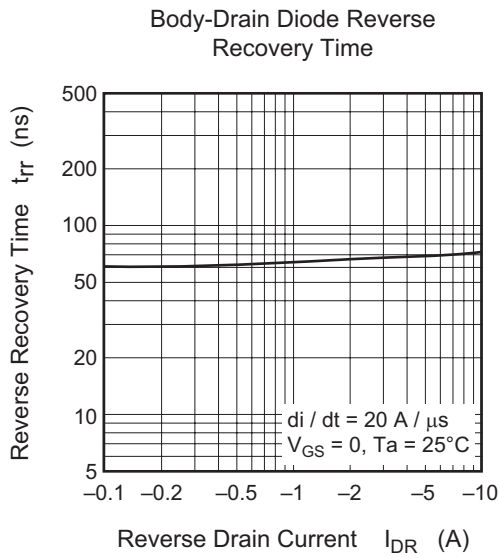
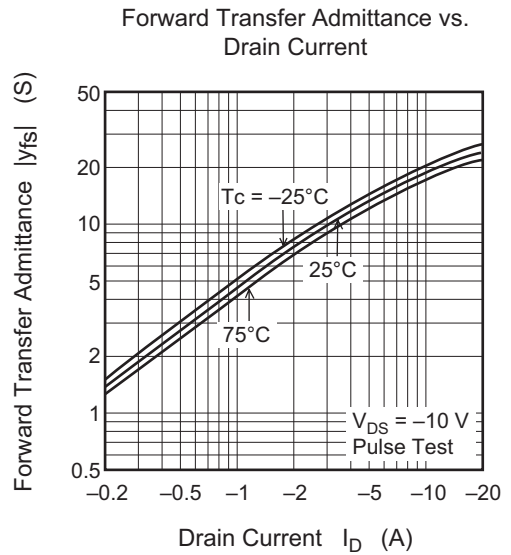
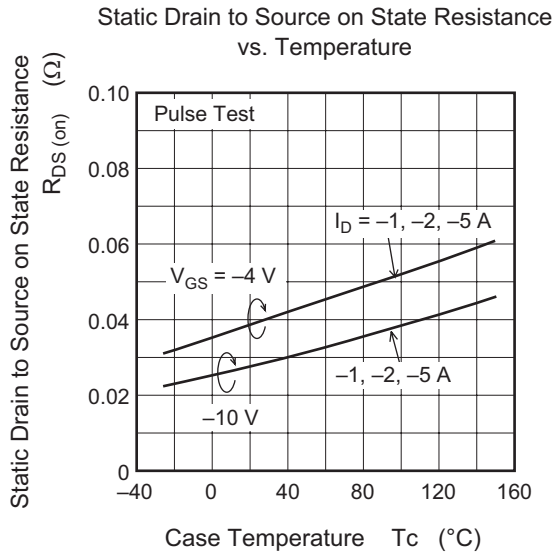
(Ta = 25°C)

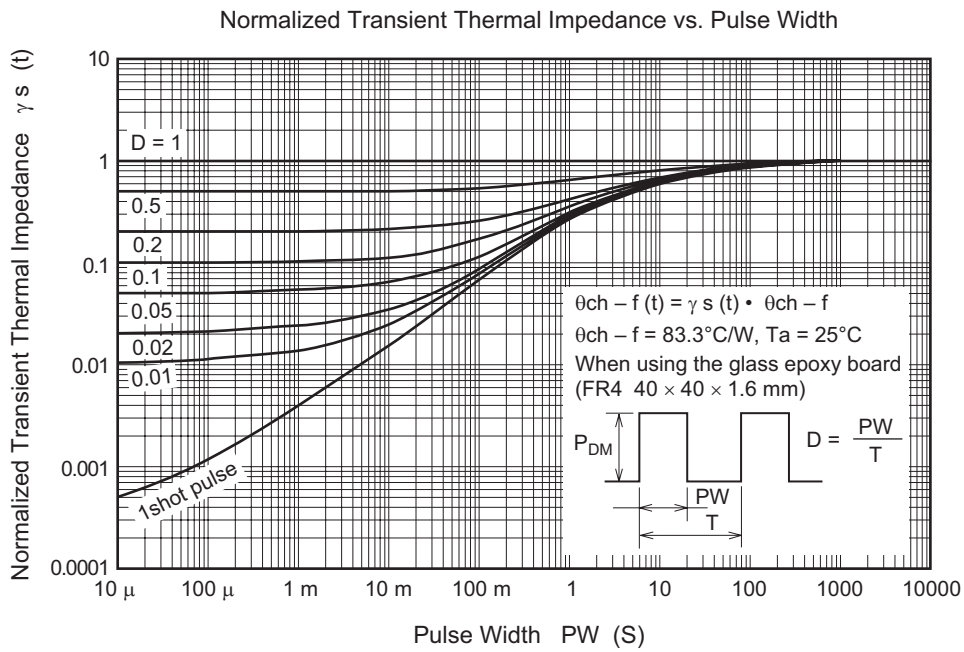
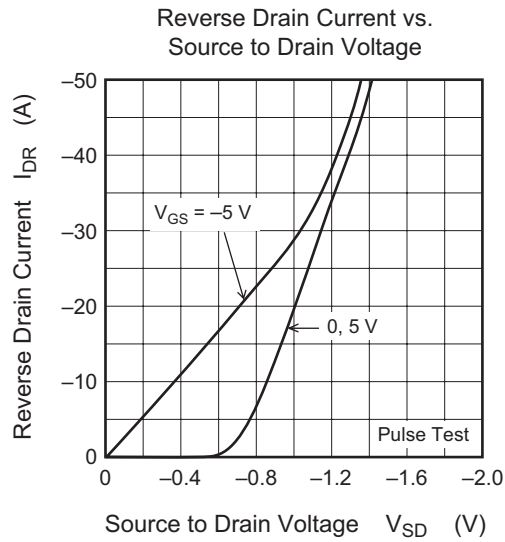
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR) DSS}$	-30	—	—	V	$I_D = -10 \text{ mA}$, $V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR) GSS}$	±20	—	—	V	$I_G = \pm 100 \mu A$, $V_{DS} = 0$
Gate to source leak current	I_{GSS}	—	—	±10	μA	$V_{GS} = \pm 16 \text{ V}$, $V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	-10	μA	$V_{DS} = -30 \text{ V}$, $V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS (off)}$	-1.0	—	-2.5	V	$V_{DS} = -10 \text{ V}$, $I_D = -1 \text{ mA}$
Static drain to source on state resistance	$R_{DS (on)}$	—	0.028	0.037	Ω	$I_D = -4 \text{ A}$, $V_{GS} = -10 \text{ V}$ ^{Note 3}
	$R_{DS (on)}$	—	0.04	0.065	Ω	$I_D = -4 \text{ A}$, $V_{GS} = -4 \text{ V}$ ^{Note 3}
Forward transfer admittance	$ y_{fs} $	8	12	—	S	$I_D = -4 \text{ A}$, $V_{DS} = -10 \text{ V}$ ^{Note 3}
Input capacitance	C_{iss}	—	1700	—	pF	$V_{DS} = -10 \text{ V}$ $V_{GS} = 0$ $f = 1 \text{ MHz}$
Output capacitance	C_{oss}	—	1000	—	pF	
Reverse transfer capacitance	C_{rss}	—	190	—	pF	
Turn-on delay time	$t_{d (on)}$	—	60	—	ns	$V_{GS} = -4 \text{ V}$, $I_D = -4 \text{ A}$, $V_{DD} \cong -10 \text{ V}$
Rise time	t_r	—	330	—	ns	
Turn-off delay time	$t_{d (off)}$	—	80	—	ns	
Fall time	t_f	—	120	—	ns	
Body-drain diode forward voltage	V_{DF}	—	-0.9	-1.4	V	$I_F = -7 \text{ A}$, $V_{GS} = 0$ ^{Note 3}
Body-drain diode reverse recovery time	t_{rr}	—	70	—	ns	$I_F = -7 \text{ A}$, $V_{GS} = 0$ $di_F/dt = 20 \text{ A}/\mu s$

Note: 3. Pulse test

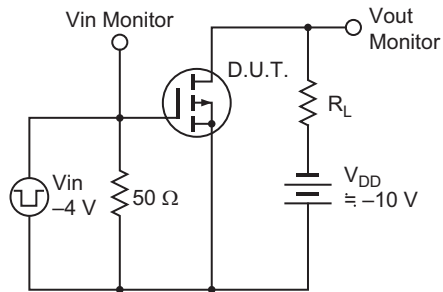
Main Characteristics



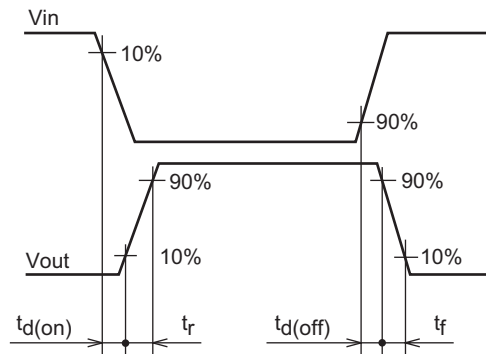




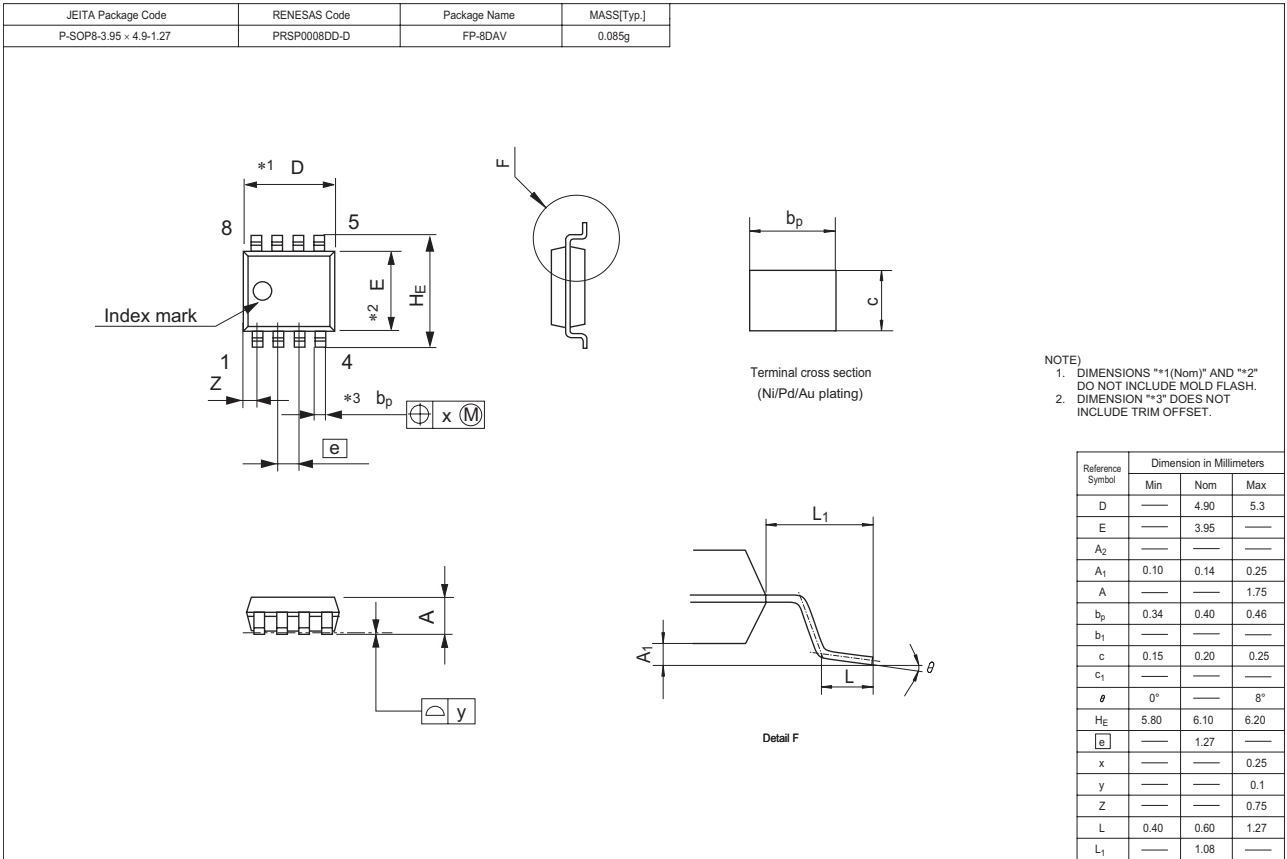
Switching Time Test Circuit



Switching Time Waveform



Package Dimensions



Ordering Information

Part Name	Quantity	Shipping Container
HAT1026R-EL-E	2500 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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