
HAT2025R

Silicon N Channel Power MOS FET
High Speed Power Switching

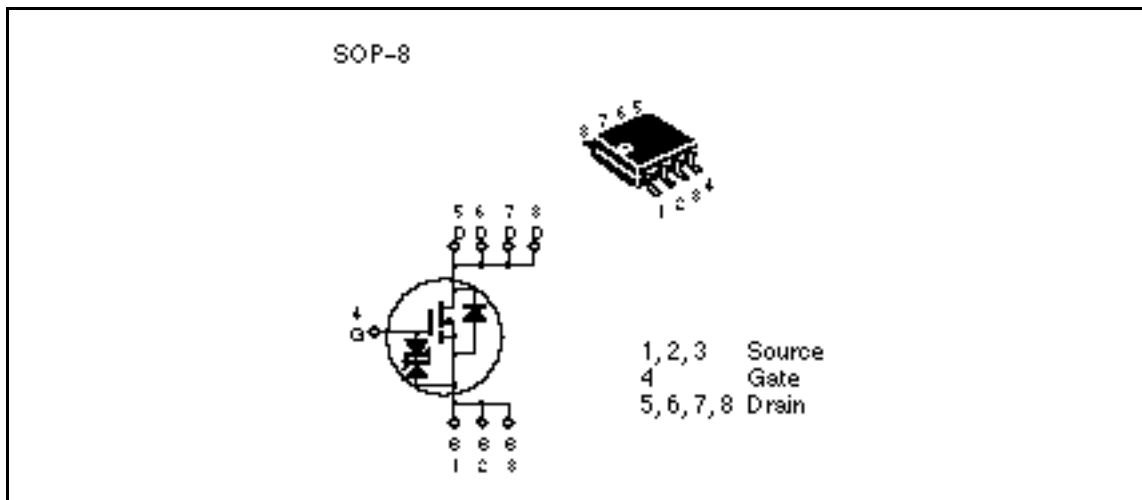
HITACHI

ADE-208-518 B
3rd. Edition

Features

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

Outline



HAT2025R

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	30	V
Gate to source voltage	V_{GSS}	± 20	V
Drain current	I_D	8	A
Drain peak current	$I_{D(pulse)}^{*1}$	64	A
Body to drain diode reverse drain current	I_{DR}	8	A
Channel dissipation	P_{ch}^{*2}	2.5	W
Channel temperature	T_{ch}	150	°C
Storage temperature	T_{stg}	-55 to +150	°C

Notes: 1. PW 10μs, duty cycle 1 %

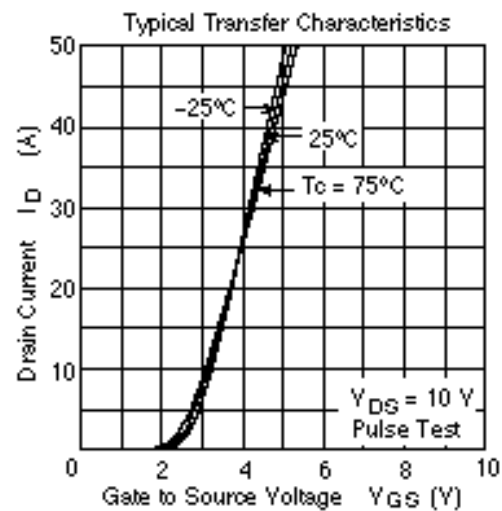
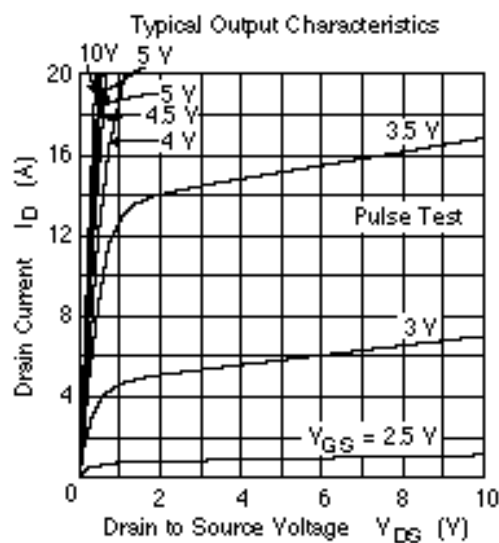
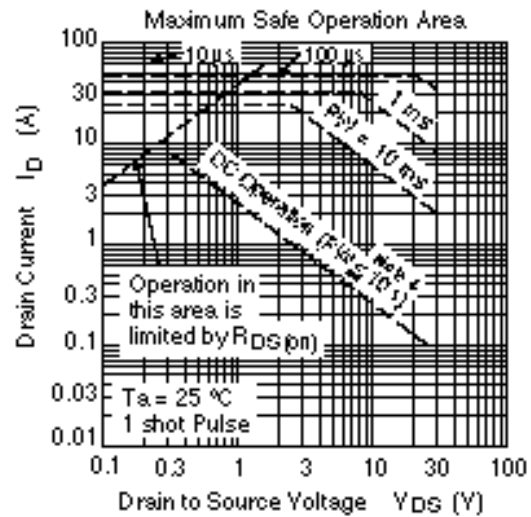
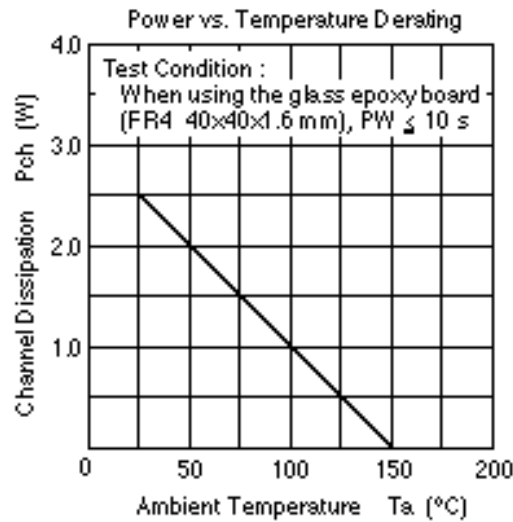
2. When using the glass epoxy board (FR4 40 x 40 x 1.6 mm), PW 10s

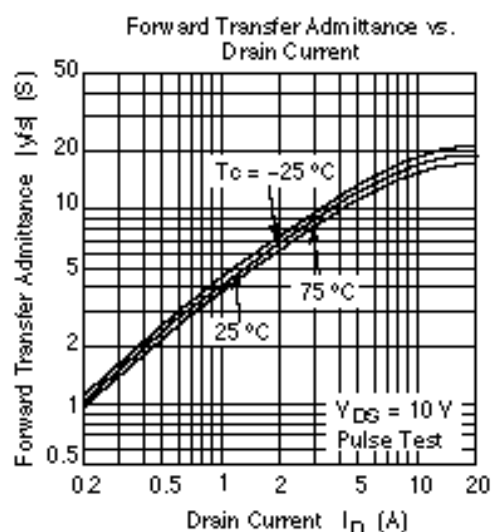
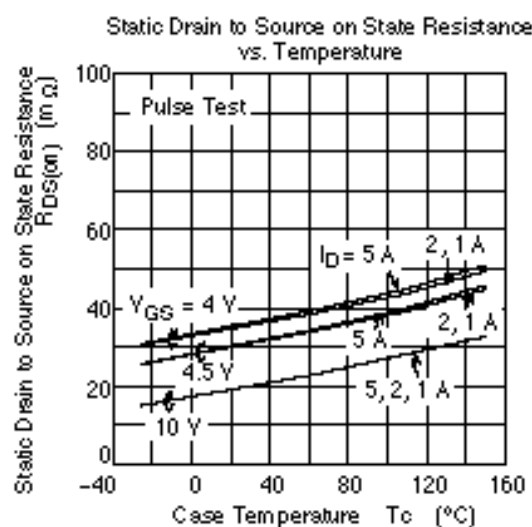
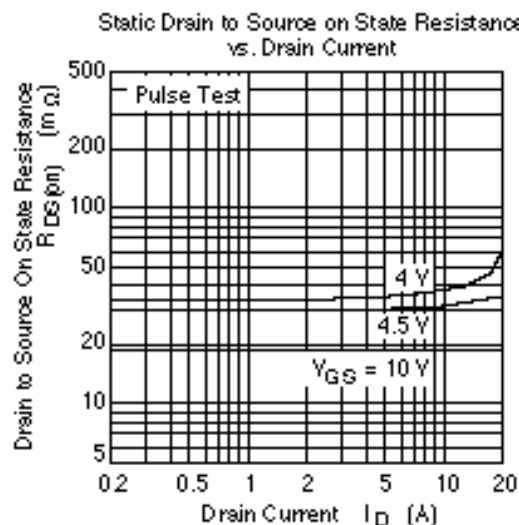
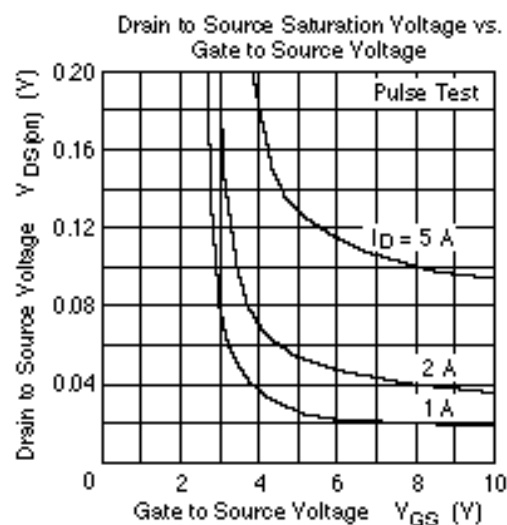
Electrical Characteristics (Ta = 25°C)

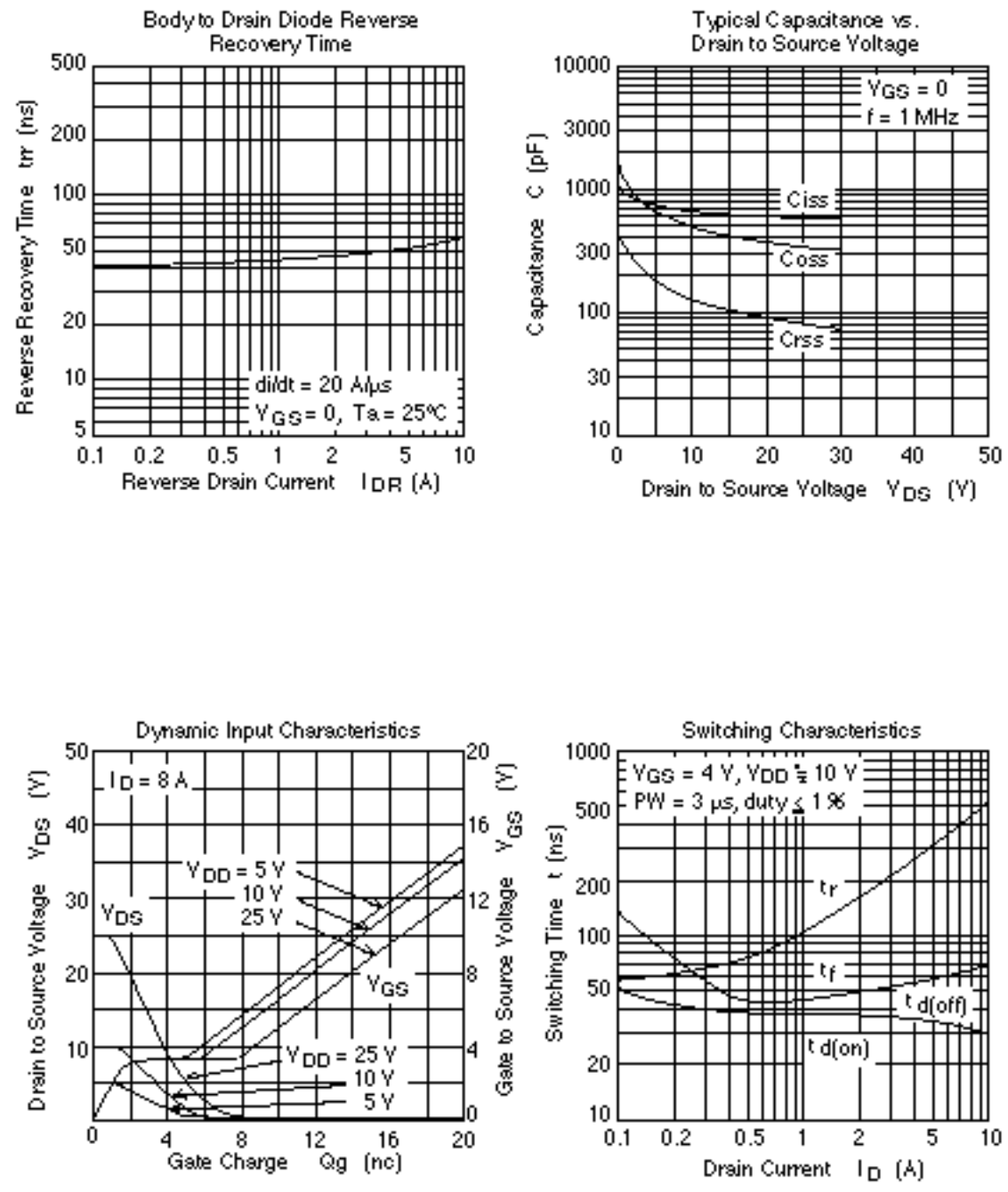
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	30	—	—	V	$I_D = 10mA, V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	± 20	—	—	V	$I_G = \pm 100\mu A, V_{DS} = 0$
Gate to source leak current	I_{GSS}	—	—	± 10	μA	$V_{GS} = \pm 16V, V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	10	μA	$V_{DS} = 30V, V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	1.3	—	2.4	V	$V_{DS} = 10V, I_D = 1mA$
Static drain to source on state resistance	$R_{DS(on)}$	—	0.019	0.026		$I_D = 4A, V_{GS} = 10V^{*1}$
	$R_{DS(on)}$	—	0.030	0.050		$I_D = 4A, V_{GS} = 4.5V^{*1}$
Forward transfer admittance	$ y_{fs} $	7	11	—	S	$I_D = 4A, V_{DS} = 10V^{*1}$
Input capacitance	C_{iss}	—	660	—	pF	$V_{DS} = 10V$
Output capacitance	C_{oss}	—	510	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	C_{rss}	—	130	—	pF	$f = 1MHz$
Turn-on delay time	$t_{d(on)}$	—	30	—	ns	$V_{GS} = 4V, I_D = 4A$
Rise time	t_r	—	265	—	ns	$V_{DD} = 10V$
Turn-off delay time	$t_{d(off)}$	—	35	—	ns	
Fall time	t_f	—	58	—	ns	
Body to drain diode forward voltage	V_{DF}	—	0.8	1.3	V	$IF = 8A, V_{GS} = 0^{*1}$
Body to drain diode reverse recovery time	t_{rr}	—	55	—	ns	$IF = 8A, V_{GS} = 0$ $diF/dt = 20A/\mu s$

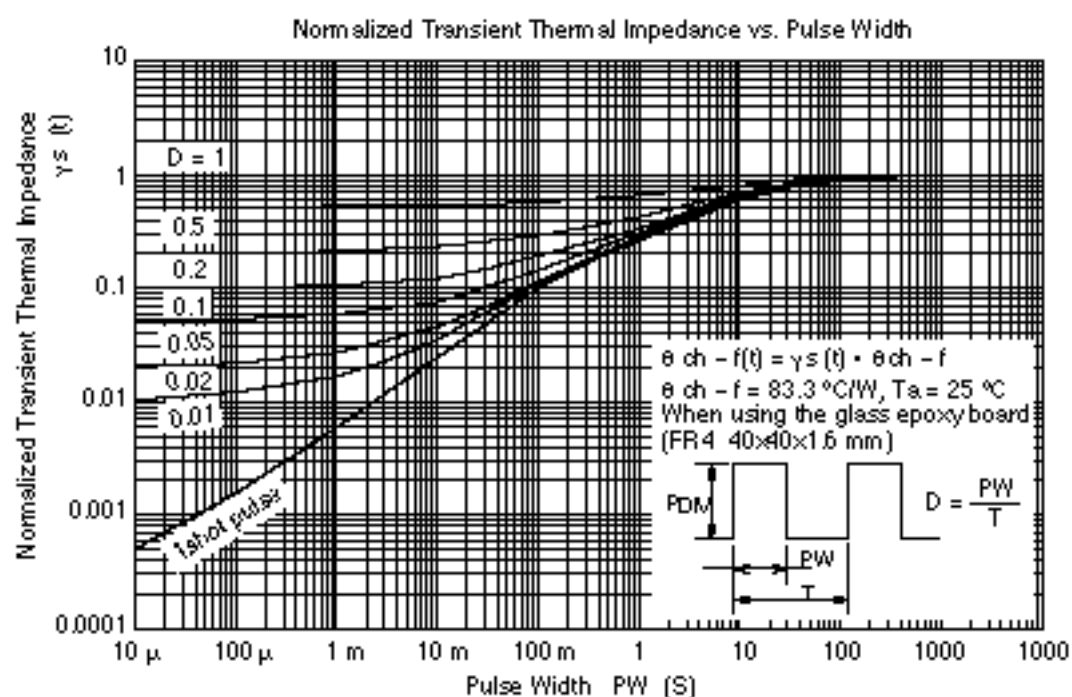
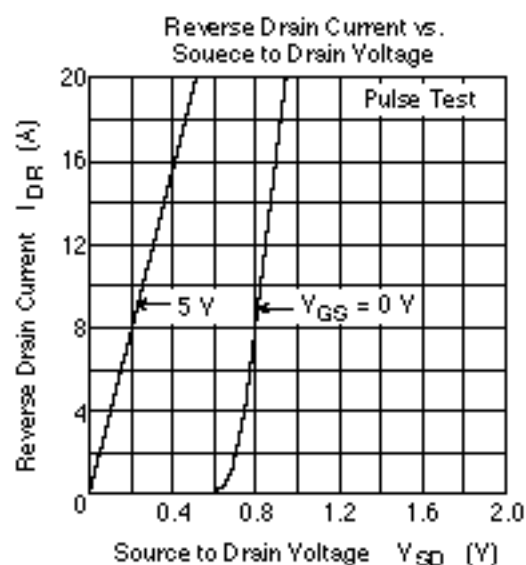
Note: 1. Pulse test

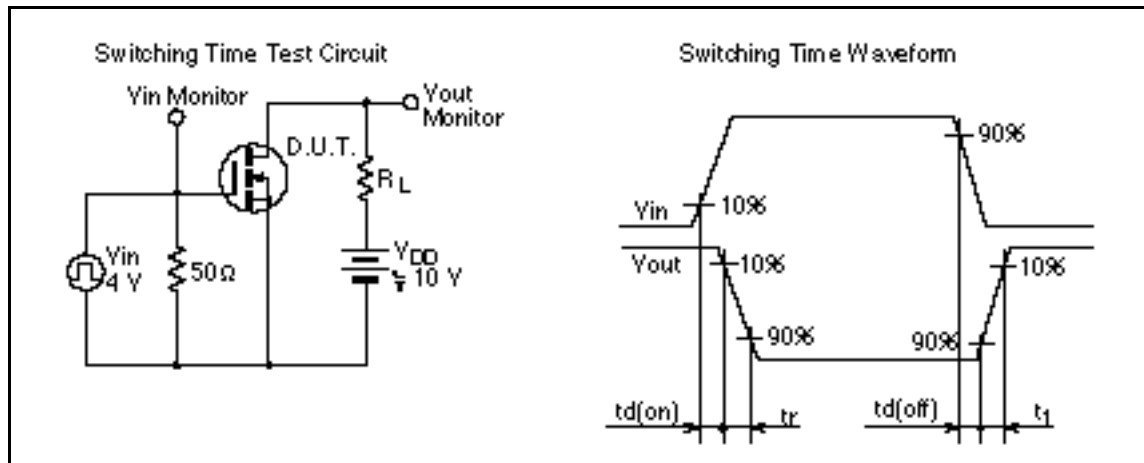
Main Characteristics







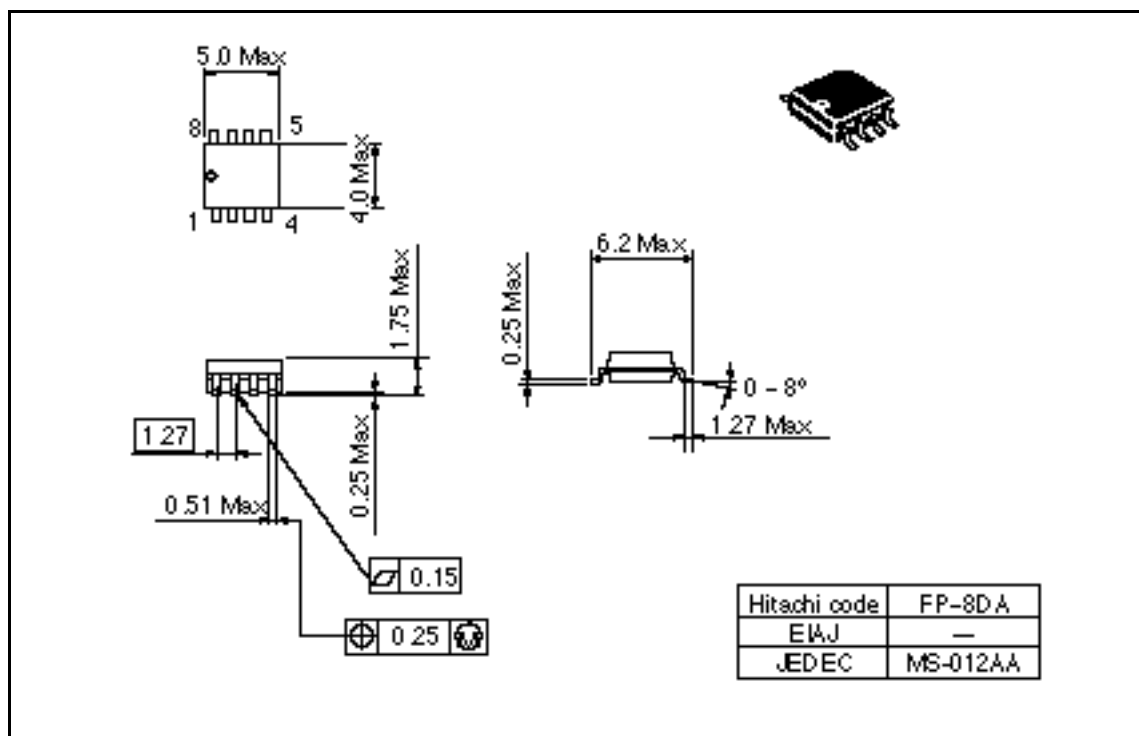




HAT2025R

Package Dimensions

Unit: mm



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