
HAT1024R

Silicon P Channel Power MOS FET
High Speed Power Switching

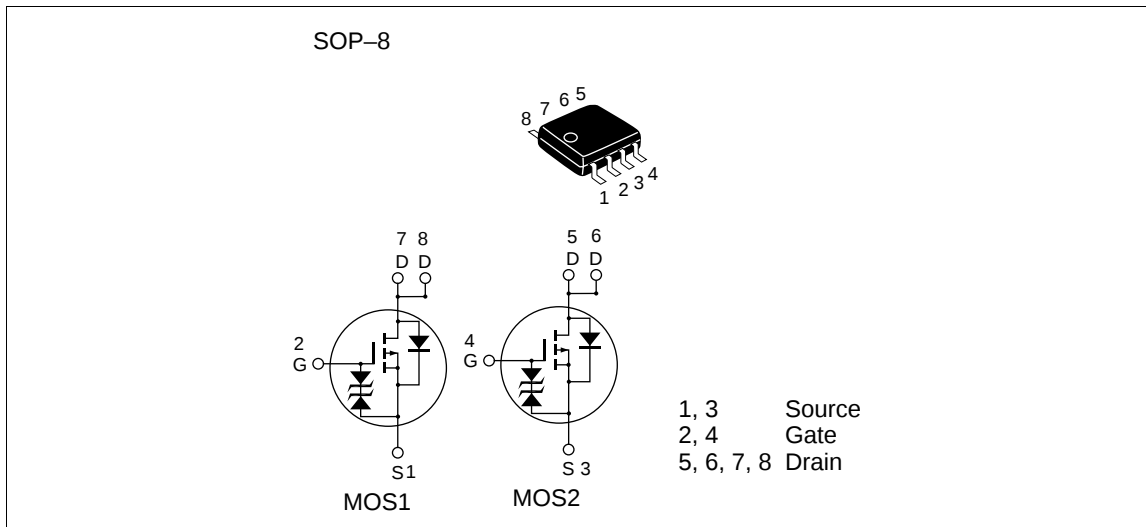
HITACHI

ADE-208-476 F (Z)
7th. Edition
October. 1996

Features

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

Outline



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Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	VDSS	−30	V
Gate to source voltage	VGSS	±20	V
Drain current	ID	−3.5	A
Drain peak current	ID(pulse)Note1	−28	A
Body–drain diode reverse drain current	IDR	−3.5	A
Channel dissipation	Pch Note2	2	W
Channel dissipation	Pch Note3	3	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	−55 to +150	°C

Note: 1. $PW \leq 10\mu s$, duty cycle $\leq 1\%$
2. 1 Drive operation : When using the glass epoxy board (FR4 40 x 40 x 1.6 mm), $PW \leq 10s$
3. 2 Drive operation : When using the glass epoxy board (FR4 40 x 40 x 1.6 mm), $PW \leq 10s$

Electrical Characteristics (Ta = 25°C)

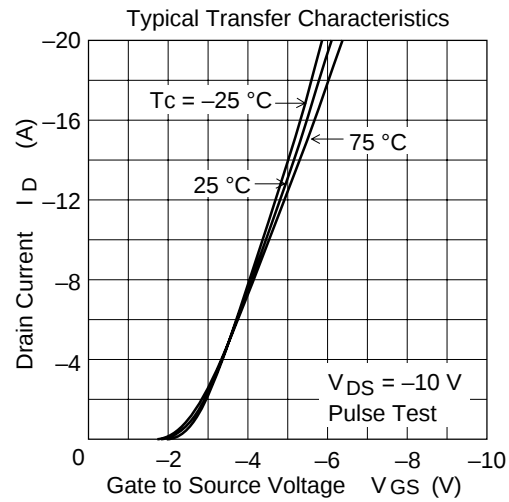
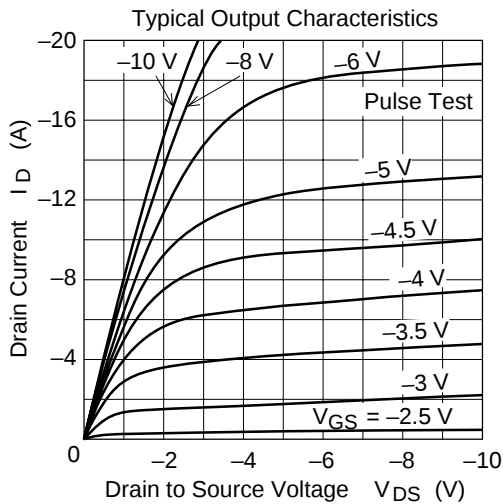
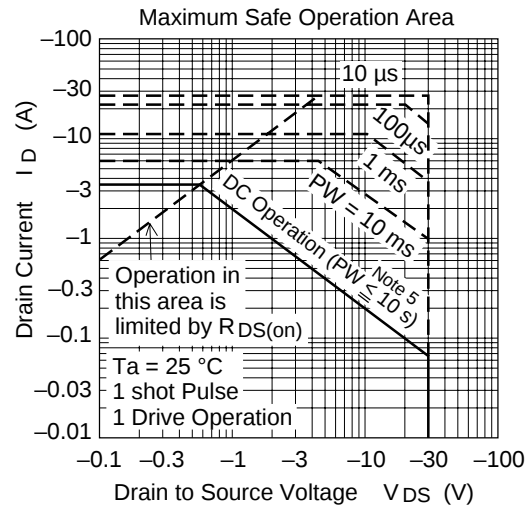
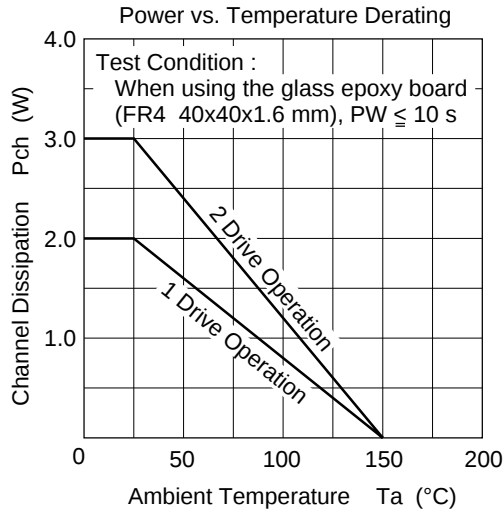
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	V(BR)DSS	−30	—	—	V	ID = −10mA, VGS = 0
Gate to source breakdown voltage	V(BR)GSS	±20	—	—	V	IG = ±100μA, VDS = 0
Gate to source leak current	IGSS	—	—	±10	μA	VGS = ±16V, VDS = 0
Zero gate voltage drain current	IDSS	—	—	−10	μA	VDS = −30 V, VGS = 0
Gate to source cutoff voltage	VGS(off)	−1.0	—	−2.5	V	VDS = −10V, ID = −1mA
Static drain to source on state resistance	RDS(on)	—	0.12	0.16	Ω	ID = −2A, VGS = −10V Note4
	RDS(on)	—	0.2	0.34	Ω	ID = −2A, VGS = −4V Note4
Forward transfer admittance	yfs	2.5	3.5	—	S	ID = −2A, VDS = −10V Note4
Input capacitance	Ciss	—	350	—	pF	VDS = −10V
Output capacitance	Coss	—	230	—	pF	VGS = 0
Reverse transfer capacitance	Crss	—	75	—	pF	f = 1MHz
Turn-on delay time	td(on)	—	18	—	ns	VGS = −4V, ID = −2A
Rise time	tr	—	110	—	ns	VDD $\nrightarrow$ −10V
Turn-off delay time	td(off)	—	20	—	ns	
Fall time	tf	—	30	—	ns	
Body–drain diode forward voltage	VDF	—	−1.0	−1.5	V	IF = −3.5A, VGS = 0 Note4

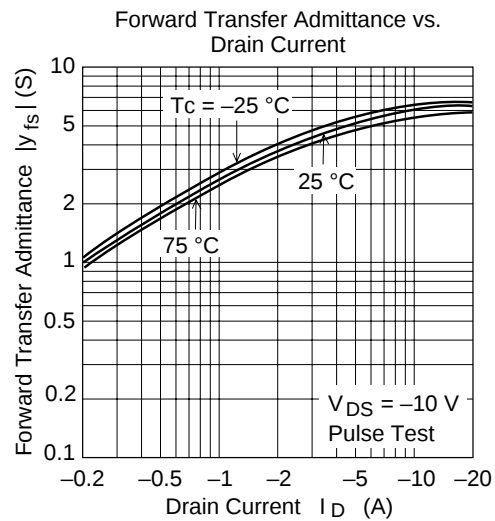
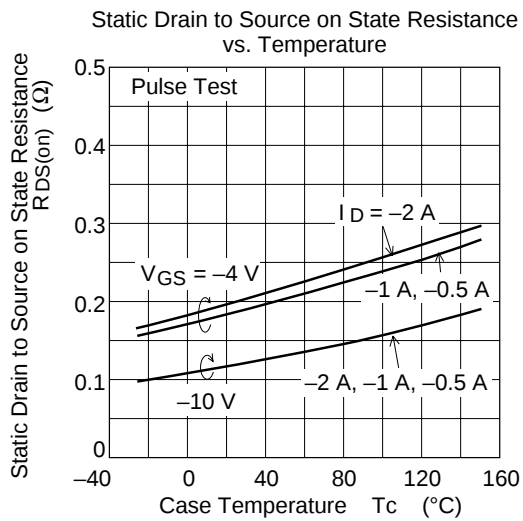
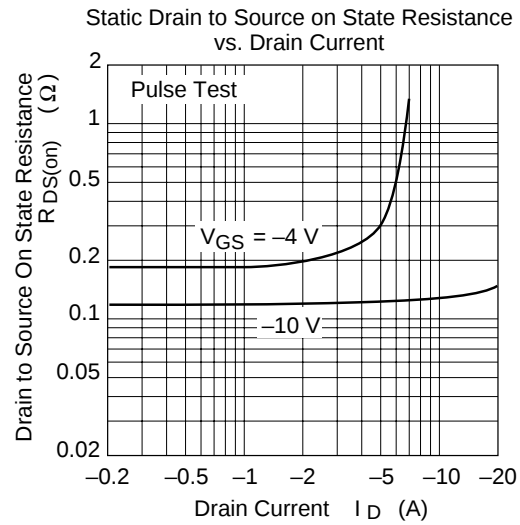
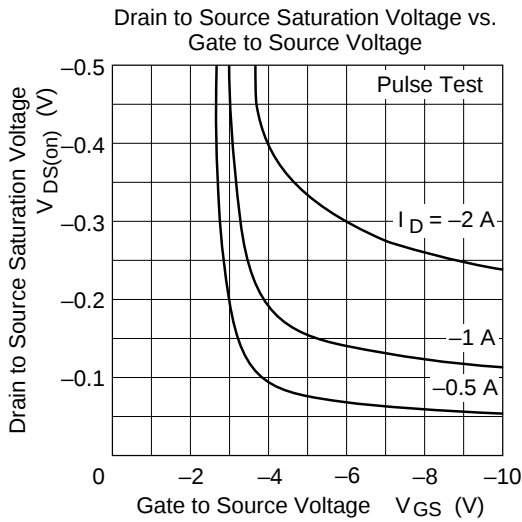
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Body–drain diode reverse recovery time	trr	—	60	—	ns	IF = –3.5A, VGS = 0 diF/ dt =20A/μs

Note: 4. Pulse test

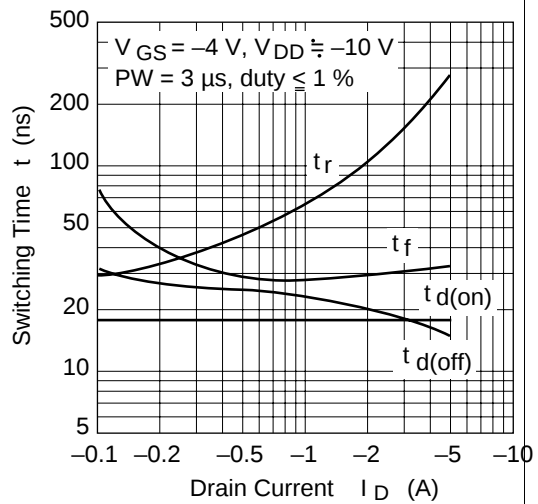
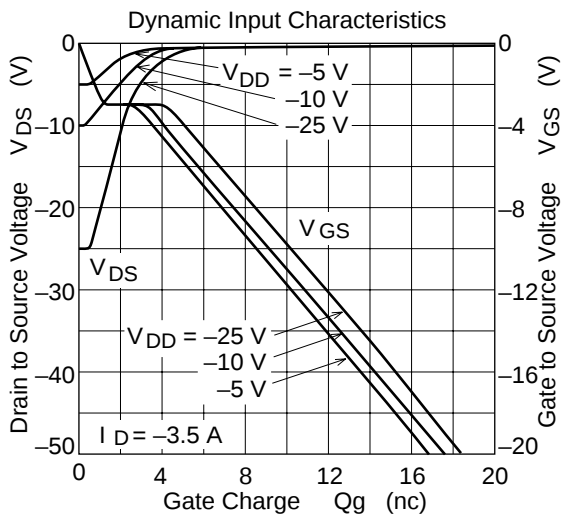
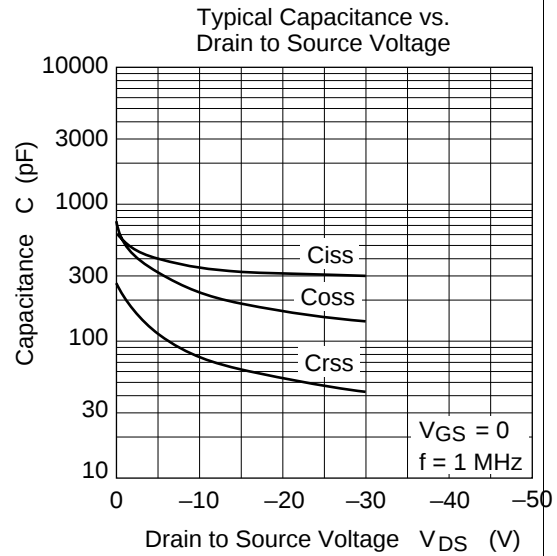
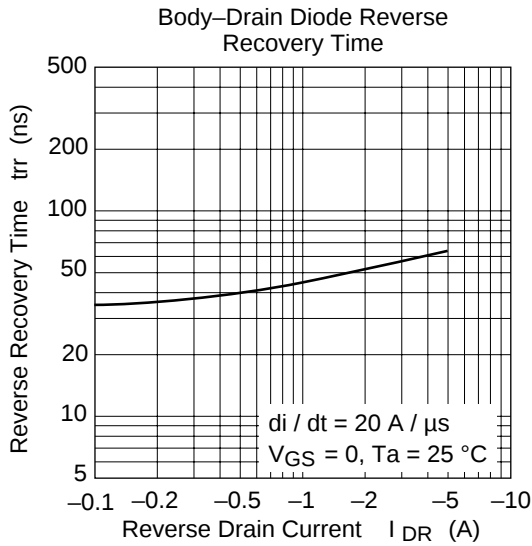
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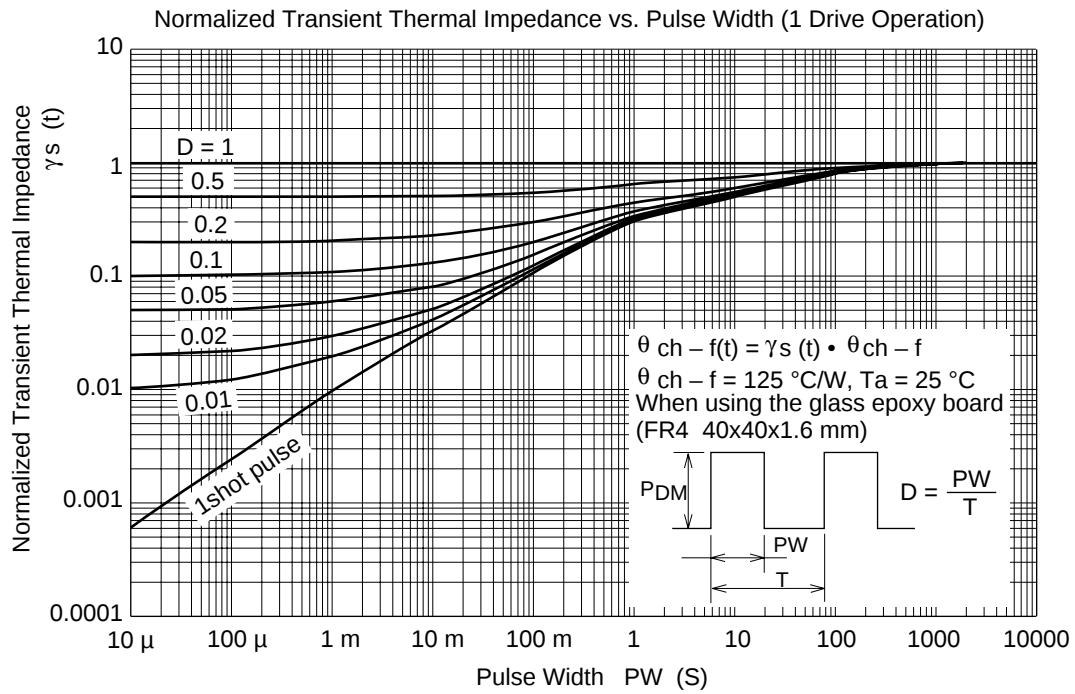
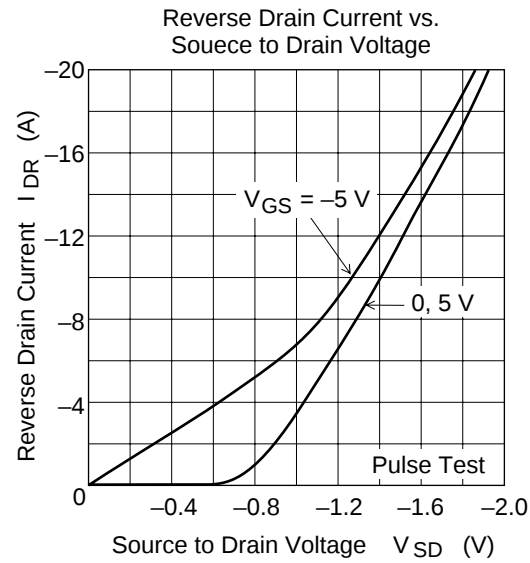
Main Characteristics



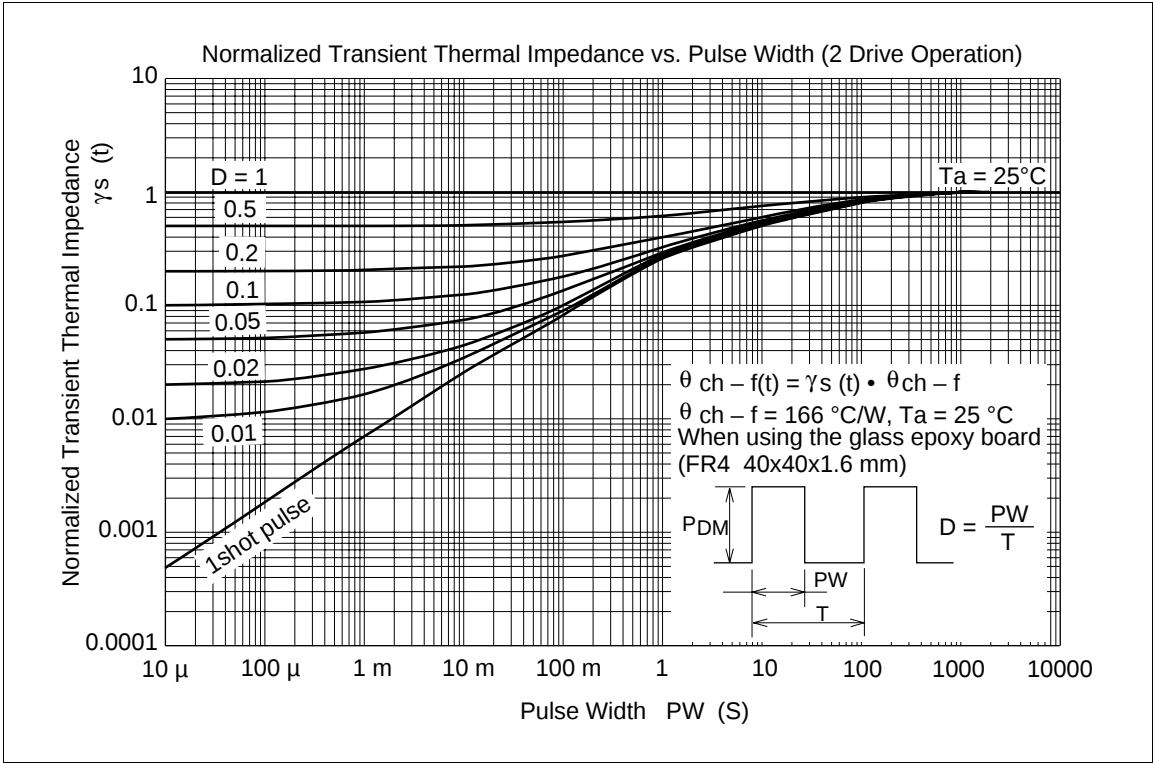


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Package Dimentions

Unit: mm

