

HAT2036R

Silicon N Channel Power MOS FET
Power Switching

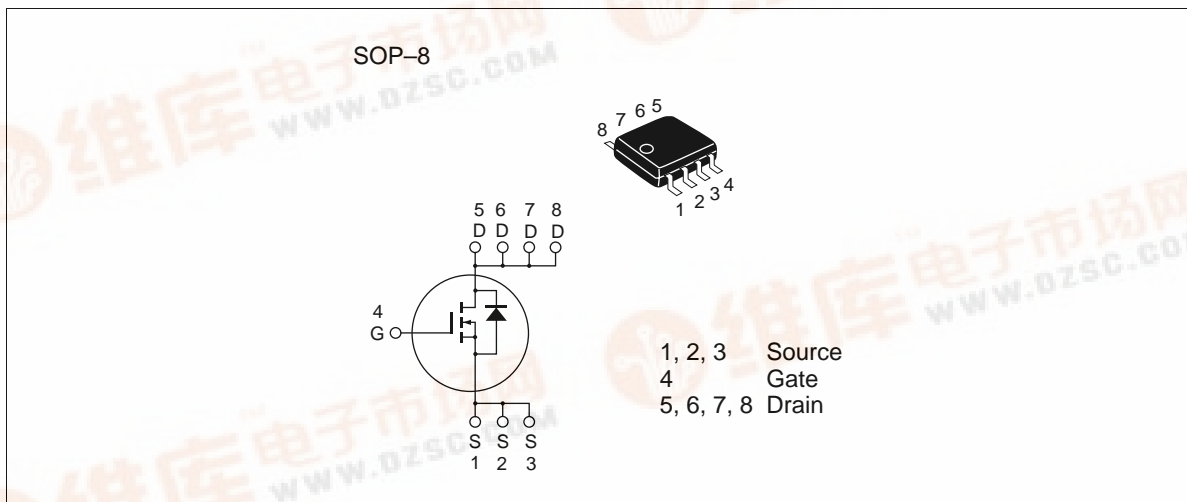
HITACHI

ADE-208-665B(Z)
Target specification 3rd. Edition
May 1998

Features

- Low on-resistance
 $R_{DS(on)}=12m\Omega$ typ
- Capable of 4.5 V gate drive
- Low drive current
- High density mounting
- High speed switching
 $t_f=60ns$ typ.

Outline



HAT2036R

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	12	A
Drain peak current	$I_{D(pulse)}^{*1}$	96	A
Body-drain diode reverse drain current	I_{DR}	12	A
Channel dissipation	Pch ^{*2}	2.5	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

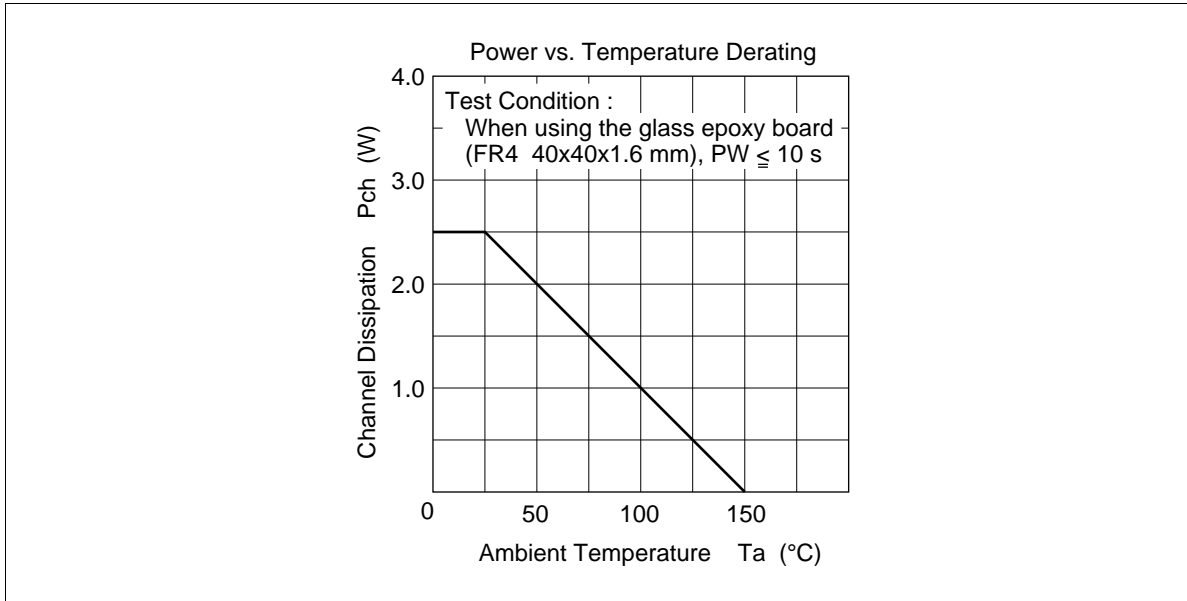
Notes: 1. PW ≤ 10μs, duty cycle ≤ 1 %

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 leak current	I_{GSS}	—	—	±0.1	μA	$V_{GS} = ±20V, V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	1	μA	$V_{DS} = 30V, V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	1.5	—	3.0	V	$V_{DS} = 10V, I_D = 1mA$
Static drain to source on state resistance	$R_{DS(on)}$	—	12	15	mΩ	$I_D = 6A, V_{GS} = 10V^{*1}$
	$R_{DS(on)}$	—	20	30	mΩ	$I_D = 6A, V_{GS} = 4.5V^{*1}$
Forward transfer admittance	$ y_{fs} $	12	20	—	S	$I_D = 6A, V_{DS} = 10V^{*1}$
Input capacitance	Ciss	—	1200	—	pF	$V_{DS} = 10V$
Output capacitance	Coss	—	380	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	Crss	—	200	—	pF	f = 1MHz
Total gate charge	Qg	—	23	—	nc	$V_{DD} = 10V$
Gate to source charge	Qgs	—	4.0	—	nc	$V_{GS} = 10V$
Gate to drain charge	Qgd	—	6.0	—	nc	$I_D = 12A$
Turn-on delay time	$t_{d(on)}$	—	40	—	ns	$V_{GS} = 4.5V, I_D = 6A$
Rise time	t_r	—	300	—	ns	$V_{DD} ≈ 10V$
Turn-off delay time	$t_{d(off)}$	—	35	—	ns	
Fall time	t_f	—	60	—	ns	
Body-drain diode forward voltage	V_{DF}	—	0.9	—	V	$I_F = 12A, V_{GS} = 0^{*1}$
Body-drain diode reverse recovery time	t_{rr}	—	35	—	ns	$I_F = 12A, V_{GS} = 0$ diF/ dt = 20A/μs

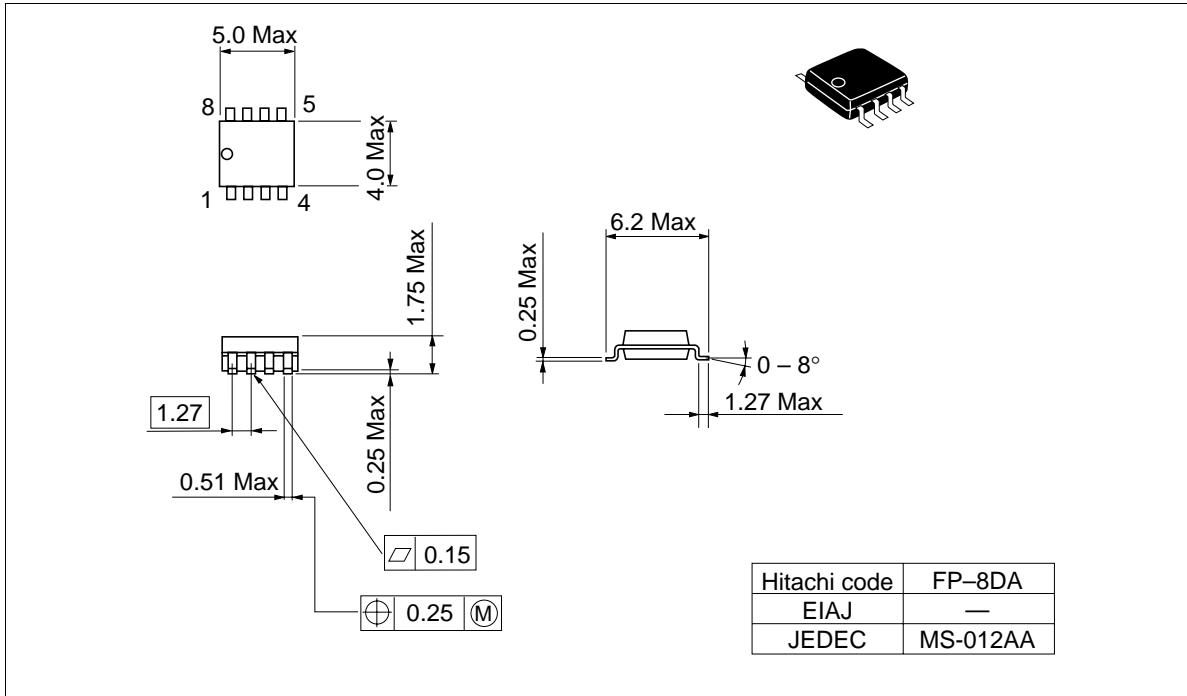
Note: 1. Pulse test

Main Characteristics

HAT2036R

Package Dimensions

Unit: mm



Cautions

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