


**PRELIMINARY**  
 Notice: This is not a final specification.  
 Some parametric limits are subject to change.

MITSUBISHI Nch POWER MOSFET

# FY7BCH-02

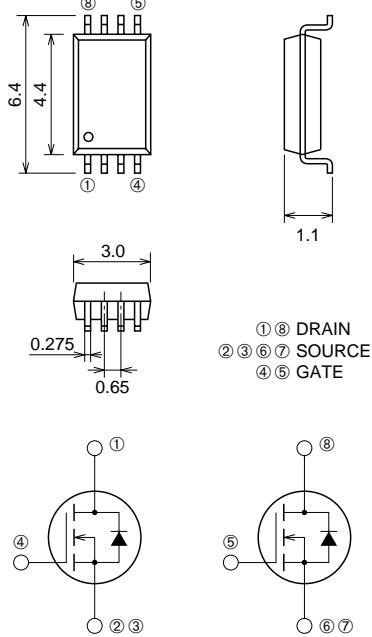
HIGH-SPEED SWITCHING USE

**FY7BCH-02**



- 2.5V DRIVE
- V<sub>DSS</sub> ..... 20V
- r<sub>DS (ON)</sub> (MAX) ..... 27mΩ
- I<sub>D</sub> ..... 7A

**OUTLINE DRAWING** Dimensions in mm



① ⑧ DRAIN  
 ② ③ ⑥ ⑦ SOURCE  
 ④ ⑤ GATE

**TSSOP8**

## APPLICATION

Motor control, Lamp control, Solenoid control  
 DC-DC converter, etc.

## MAXIMUM RATINGS (T<sub>c</sub> = 25°C)

Symbol	Parameter	Conditions	Ratings	Unit
V <sub>DSS</sub>	Drain-source voltage	V <sub>GS</sub> = 0V	20	V
V <sub>GSS</sub>	Gate-source voltage	V <sub>DS</sub> = 0V	±10	V
I <sub>D</sub>	Drain current		7	A
I <sub>DM</sub>	Drain current (Pulsed)		49	A
I <sub>DA</sub>	Avalanche drain current (Pulsed)	L = 10μH	7	A
I <sub>S</sub>	Source current		1.5	A
I <sub>SM</sub>	Source current (Pulsed)		6.0	A
P <sub>D</sub>	Maximum power dissipation		1.6	W
T <sub>ch</sub>	Channel temperature		-55 ~ +150	°C
T <sub>stg</sub>	Storage temperature		-55 ~ +150	°C
—	Weight	Typical value	0.035	g

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**ELECTRICAL CHARACTERISTICS** (Tch = 25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
V (BR) DSS	Drain-source breakdown voltage	Id = 1mA, VGS = 0V	20	—	—	V
IGSS	Gate-source leakage current	VGS = ±10V, VDS = 0V	—	—	±0.1	μA
IDSS	Drain-source leakage current	VDS = 20V, VGS = 0V	—	—	0.1	mA
VGS (th)	Gate-source threshold voltage	Id = 1mA, VDS = 10V	0.4	0.7	1.3	V
rDS (ON)	Drain-source on-state resistance	Id = 7A, VGS = 4V	—	20	27	mΩ
rDS (ON)	Drain-source on-state resistance	Id = 3.5A, VGS = 2.5V	—	29	40	mΩ
VDS (ON)	Drain-source on-state voltage	Id = 7A, VGS = 4V	—	0.140	0.189	V
yfs	Forward transfer admittance	Id = 7A, VDS = 10V	—	15	—	S
Ciss	Input capacitance	VDS = 10V, VGS = 0V, f = 1MHz	—	950	—	pF
Coss	Output capacitance		—	350	—	pF
Crss	Reverse transfer capacitance		—	260	—	pF
td (on)	Turn-on delay time		—	20	—	ns
tr	Rise time	VDD = 10V, Id = 3.5A, VGS = 4V, RGEN = RGS = 50Ω	—	65	—	ns
td (off)	Turn-off delay time		—	135	—	ns
tf	Fall time		—	130	—	ns
VSD	Source-drain voltage	IS = 1.5A, VGS = 0V	—	0.75	1.1	V
Rth (ch-a)	Thermal resistance	Channel to ambient	—	—	78.1	°C/W
trr	Reverse recovery time	IS = 1.5A, dis/dt = -50A/μs	—	50	—	ns