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

MITSUBISHI Nch POWER MOSFET

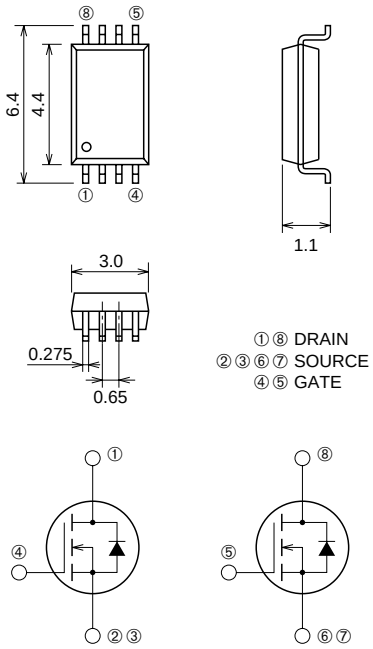
FY7BCH-02

HIGH-SPEED SWITCHING USE

FY7BCH-02

- 2.5V DRIVE
- V_{DSS} 20V
- $r_{DS\ (ON)\ (MAX)}$ 27mΩ
- I_D 7A

OUTLINE DRAWING Dimensions in mm



TSSOP8

APPLICATION

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

MAXIMUM RATINGS (T_c = 25°C)

Symbol	Parameter	Conditions	Ratings	Unit
V_{DSS}	Drain-source voltage	V_{GS} = 0V	20	V
V_{GSS}	Gate-source voltage	V_{DS} = 0V	±10	V
I_D	Drain current		7	A
I_{DM}	Drain current (Pulsed)		49	A
I_{DA}	Avalanche drain current (Pulsed)	L = 10μH	7	A
I_S	Source current		1.5	A
I_{SM}	Source current (Pulsed)		6.0	A
P_D	Maximum power dissipation		1.6	W
T_{ch}	Channel temperature		–55 ~ +150	°C
T_{stg}	Storage temperature		–55 ~ +150	°C
—	Weight	Typical value	0.035	g

MITSUBISHI ELECTRIC

ELECTRICAL CHARACTERISTICS (Tch = 25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
$V_{(BR)\ DSS}$	Drain-source breakdown voltage	I_D = 1mA, V_{GS} = 0V	20	—	—	V
I_{GSS}	Gate-source leakage current	V_{GS} = ±10V, V_{DS} = 0V	—	—	±0.1	µA
I_{DSS}	Drain-source leakage current	V_{DS} = 20V, V_{GS} = 0V	—	—	0.1	mA
$V_{GS\ (th)}$	Gate-source threshold voltage	I_D = 1mA, V_{DS} = 10V	0.4	0.7	1.3	V
$r_{DS\ (ON)}$	Drain-source on-state resistance	I_D = 7A, V_{GS} = 4V	—	20	27	mΩ
$r_{DS\ (ON)}$	Drain-source on-state resistance	I_D = 3.5A, V_{GS} = 2.5V	—	29	40	mΩ
$V_{DS\ (ON)}$	Drain-source on-state voltage	I_D = 7A, V_{GS} = 4V	—	0.140	0.189	V
$\lvert y_{fs} \rvert$	Forward transfer admittance	I_D = 7A, V_{DS} = 10V	—	15	—	S
C_{iss}	Input capacitance	V_{DS} = 10V, V_{GS} = 0V, f = 1MHz	—	950	—	pF
C_{oss}	Output capacitance		—	350	—	pF
C_{rss}	Reverse transfer capacitance		—	260	—	pF
$t_{d\ (on)}$	Turn-on delay time	V_{DD} = 10V, I_D = 3.5A, V_{GS} = 4V, R_{GEN} = R_{GS} = 50Ω	—	20	—	ns
t_r	Rise time		—	65	—	ns
$t_{d\ (off)}$	Turn-off delay time		—	135	—	ns
t_f	Fall time		—	130	—	ns
V_{SD}	Source-drain voltage	I_S = 1.5A, V_{GS} = 0V	—	0.75	1.1	V
$R_{th\ (ch-a)}$	Thermal resistance	Channel to ambient	—	—	78.1	°C/W
t_{rr}	Reverse recovery time	I_S = 1.5A, dis/dt = –50A/µs	—	50	—	ns