

MITSUBISHI Nch POWER MOSFET

# FS5ASJ-06

HIGH-SPEED SWITCHING USE

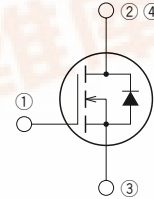
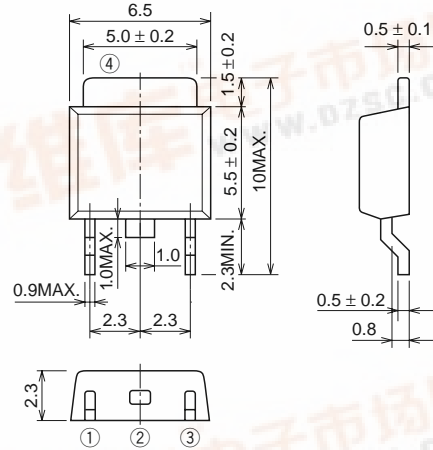
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- 4V DRIVE
- V<sub>DSS</sub> ..... 60V
- r<sub>DS (ON)</sub> (MAX) ..... 0.14Ω
- I<sub>D</sub> ..... 5A
- Integrated Fast Recovery Diode (TYP.) ..... 45ns

## OUTLINE DRAWING

Dimensions in mm



- ① GATE
- ② DRAIN
- ③ SOURCE
- ④ DRAIN

MP-3

## 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	60	V
V <sub>GSS</sub>	Gate-source voltage	V <sub>DS</sub> = 0V	±20	V
I <sub>D</sub>	Drain current		5	A
I <sub>DM</sub>	Drain current (Pulsed)		20	A
I <sub>DA</sub>	Avalanche drain current (Pulsed)	L = 100μH	5	A
I <sub>S</sub>	Source current		5	A
I <sub>SM</sub>	Source current (Pulsed)		20	A
P <sub>D</sub>	Maximum power dissipation		20	W
T <sub>ch</sub>	Channel temperature		-55 ~ +150	°C
T <sub>stg</sub>	Storage temperature		-55 ~ +150	°C
—	Weight	Typical value	0.26	g

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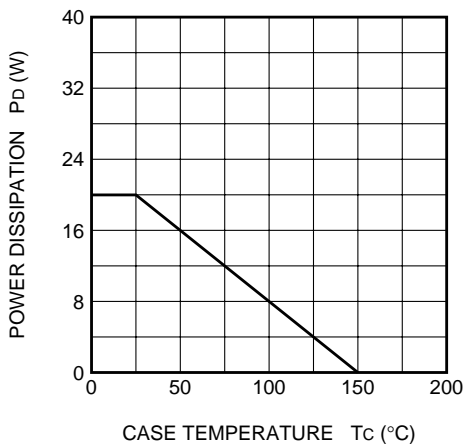
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## ELECTRICAL CHARACTERISTICS (Tch = 25°C)

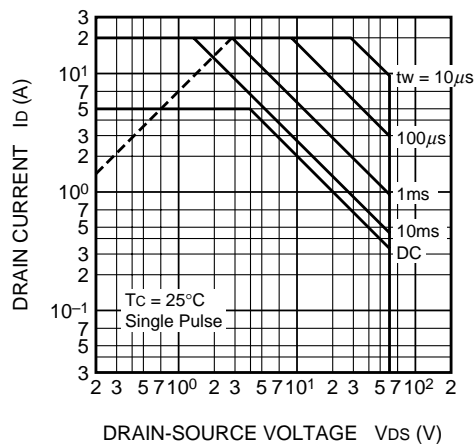
Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
V(BR)DSS	Drain-source breakdown voltage	Id = 1mA, VGS = 0V	60	—	—	V
IGSS	Gate-source leakage current	VGS = ±20V, VDS = 0V	—	—	±0.1	μA
IDSS	Drain-source leakage current	VDS = 60V, VGS = 0V	—	—	0.1	mA
VGS(th)	Gate-source threshold voltage	Id = 1mA, VDS = 10V	1.0	1.5	2.0	V
rDS(ON)	Drain-source on-state resistance	Id = 2A, VGS = 10V	—	0.11	0.14	Ω
rDS(ON)	Drain-source on-state resistance	Id = 2A, VGS = 4V	—	0.14	0.19	Ω
VDS(ON)	Drain-source on-state voltage	Id = 2A, VGS = 10V	—	0.22	0.28	V
yfs	Forward transfer admittance	Id = 2A, VDS = 5V	—	6.0	—	S
Ciss	Input capacitance	VDS = 10V, VGS = 0V, f = 1MHz	—	360	—	pF
Coss	Output capacitance		—	120	—	pF
Crss	Reverse transfer capacitance		—	40	—	pF
td(on)	Turn-on delay time	VDD = 30V, Id = 2A, VGS = 10V, RGEN = RGS = 50Ω	—	11	—	ns
tr	Rise time		—	9	—	ns
td(off)	Turn-off delay time		—	35	—	ns
tf	Fall time		—	20	—	ns
VSD	Source-drain voltage	Is = 2A, VGS = 0V	—	1.0	1.5	V
Rth(ch-c)	Thermal resistance	Channel to case	—	—	6.25	°C/W
trr	Reverse recovery time	Is = 5A, dis/dt = -100A/μs	—	45	—	ns

## PERFORMANCE CURVES

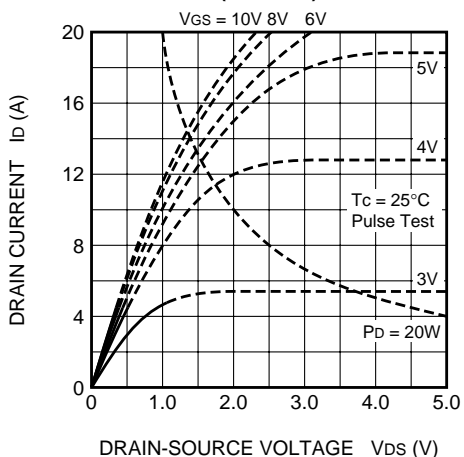
POWER DISSIPATION DERATING CURVE



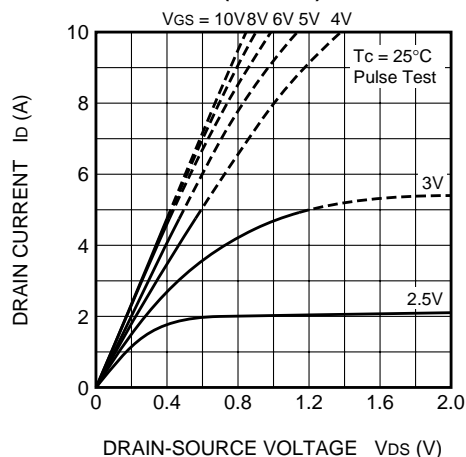
MAXIMUM SAFE OPERATING AREA



OUTPUT CHARACTERISTICS (TYPICAL)

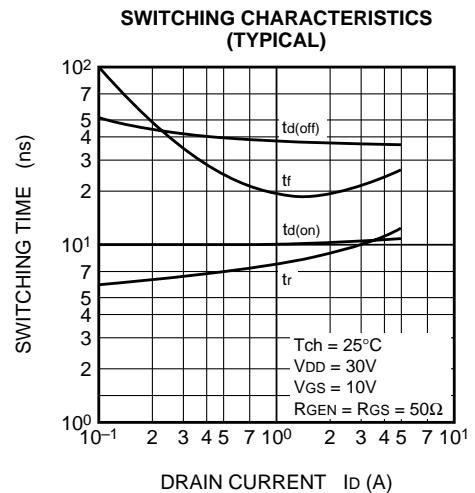
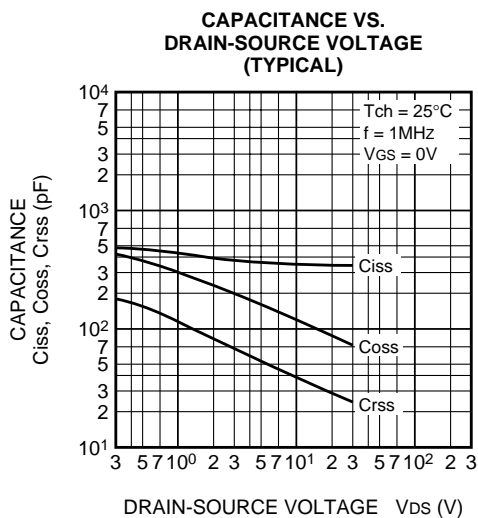
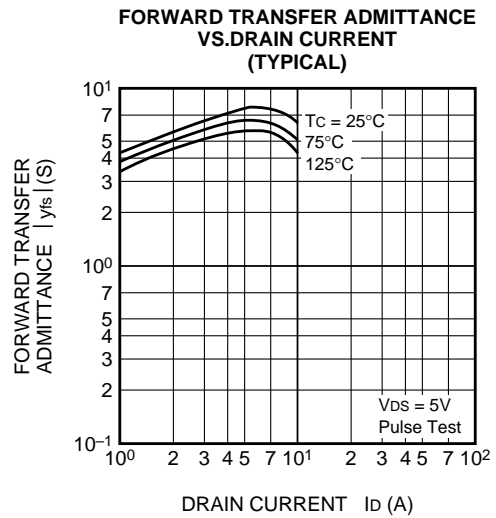
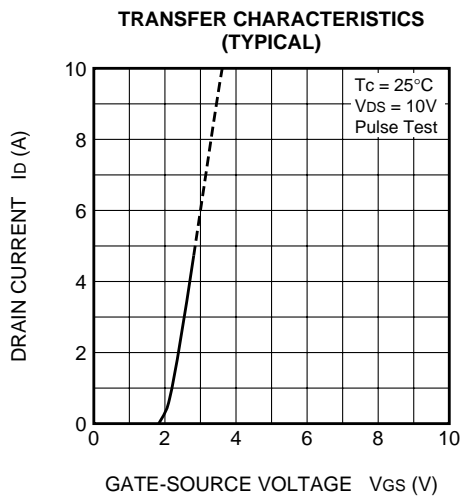
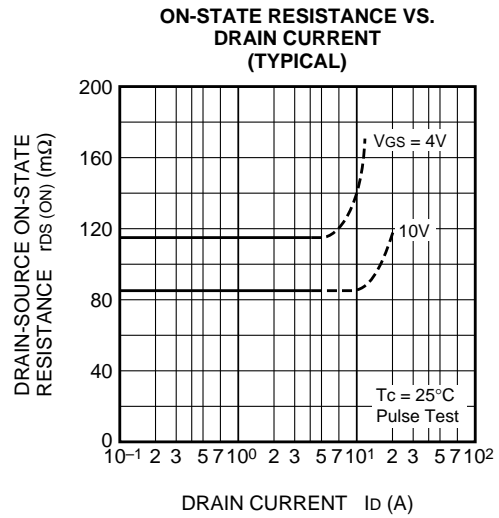
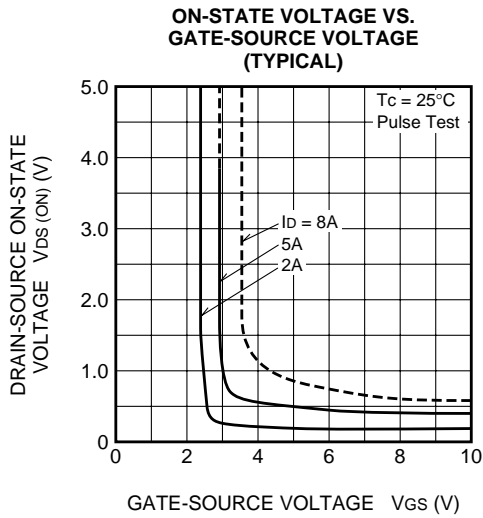


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