

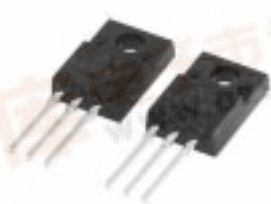
PRELIMINARY
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 Some parametric limits are subject to change.

MITSUBISHI Nch POWER MOSFET

FS3KMA-5A

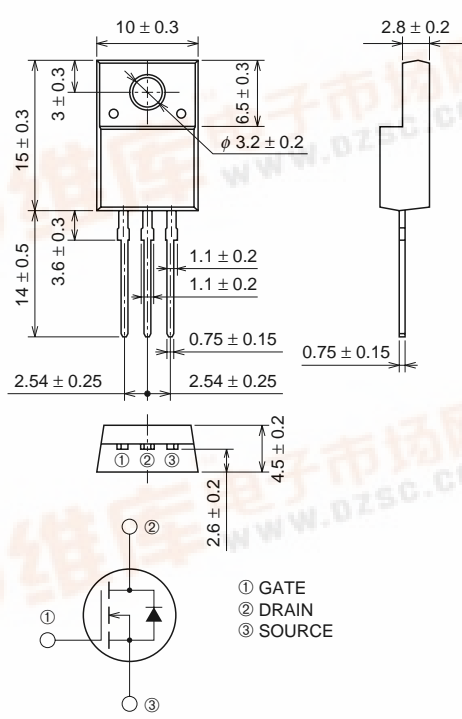
HIGH-SPEED SWITCHING USE

FS3KMA-5A



- 10V DRIVE
- V_{DSS} 250V
- r_{DS} (ON) (MAX) 2.0Ω
- I_D 3A

OUTLINE DRAWING Dimensions in mm



① GATE
 ② DRAIN
 ③ SOURCE

TO-220FN

APPLICATION

SMPS, High speed switching use

MAXIMUM RATINGS (T_c = 25°C)

Symbol	Parameter	Conditions	Ratings	Unit
V _{DSS}	Drain-source voltage	V _{GS} = 0V	250	V
V _{GSS}	Gate-source voltage	V _{DS} = 0V	±20	V
I _D	Drain current		3	A
I _{DM}	Drain current (Pulsed)		9	A
I _{DA}	Avalanche current (Pulsed)	L = 200μH	3	A
PD	Maximum power dissipation		25	W
T _{ch}	Channel temperature		-55 ~ +150	°C
T _{stg}	Storage temperature		-55 ~ +150	°C
V _{iso}	Isolation voltage	AC for 1minute, Terminal to case	2000	V
—	Weight	Typical value	2.0	g

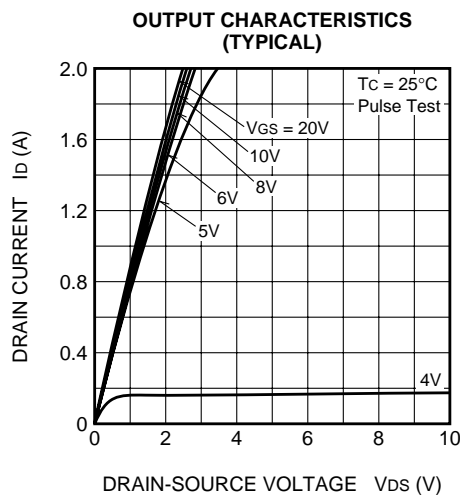
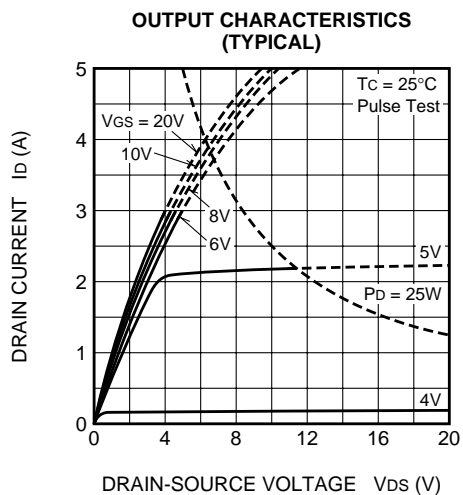
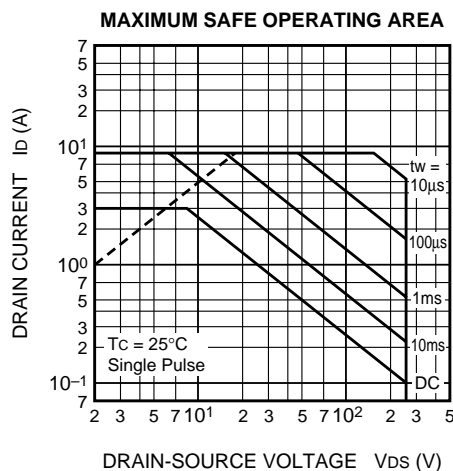
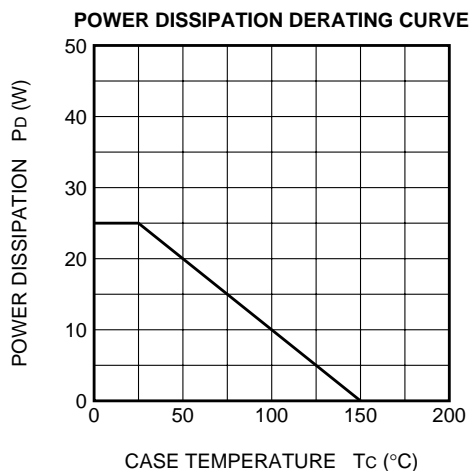


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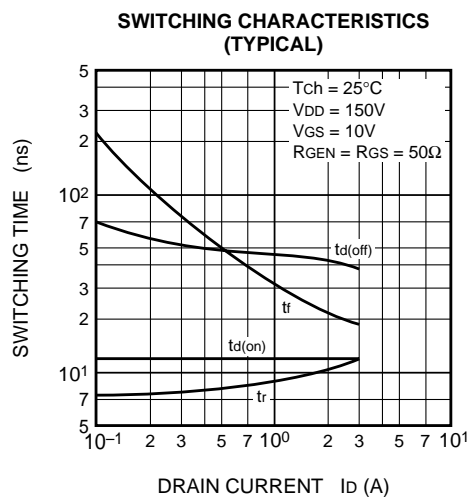
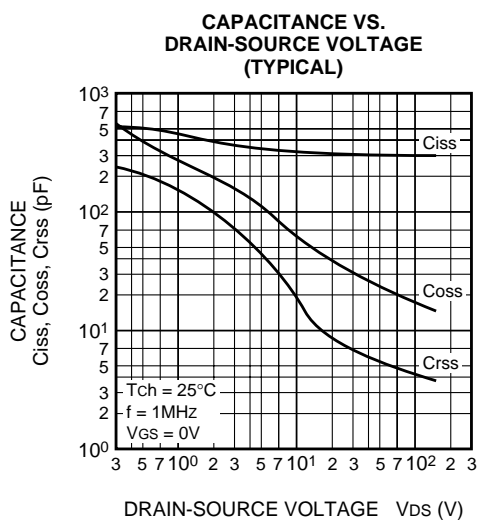
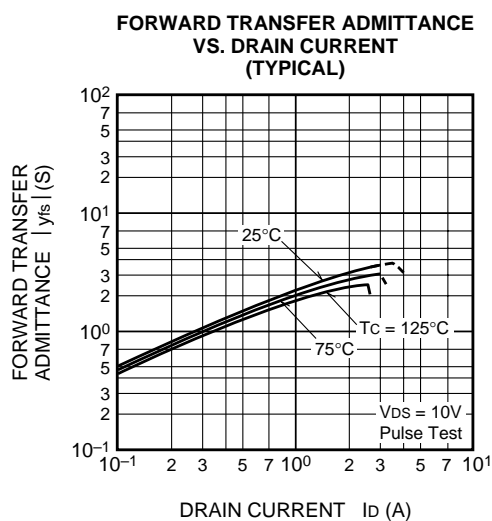
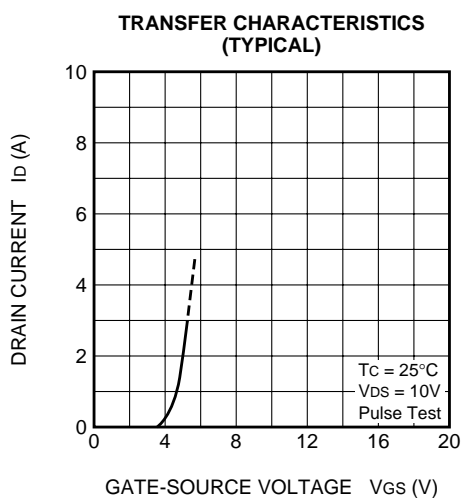
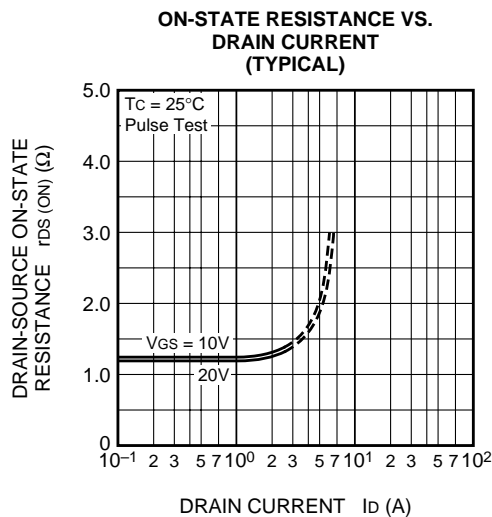
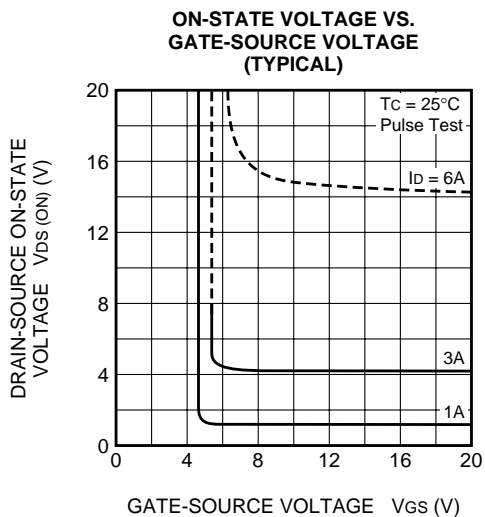
ELECTRICAL CHARACTERISTICS (Tch = 25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
V(BR)DSS	Drain-source breakdown voltage	ID = 1mA, VGS = 0V	250	—	—	V
IGSS	Gate-source leakage current	VGS = ±20V, VDS = 0V	—	—	±0.1	μA
IDSS	Drain-source leakage current	VDS = 250V, VGS = 0V	—	—	1	mA
VGS(th)	Gate-source threshold voltage	ID = 1mA, VDS = 10V	2.0	3.0	4.0	V
rDS(ON)	Drain-source on-state resistance	ID = 1.5A, VGS = 10V	—	1.5	2.0	Ω
VDS(ON)	Drain-source on-state voltage	ID = 1.5A, VGS = 10V	—	2.25	3.0	V
yfs	Forward transfer admittance	ID = 1.5A, VDS = 10V	—	2.5	—	S
Ciss	Input capacitance	Vbs = 25V, VGS = 0V, f = 1MHz	—	300	—	pF
Coss	Output capacitance		—	35	—	pF
Crss	Reverse transfer capacitance		—	8	—	pF
td(on)	Turn-on delay time	VDD = 150V, ID = 1.5A, VGS = 10V, RGEN = RGS = 50Ω	—	15	—	ns
tr	Rise time		—	10	—	ns
td(off)	Turn-off delay time		—	45	—	ns
tf	Fall time		—	20	—	ns
VSD	Source-drain voltage		IS = 1.5A, VGS = 0V	—	1.5	2.0
Rth(ch-c)	Thermal resistance	Channel to case	—	—	5.0	°C/W

PERFORMANCE CURVES

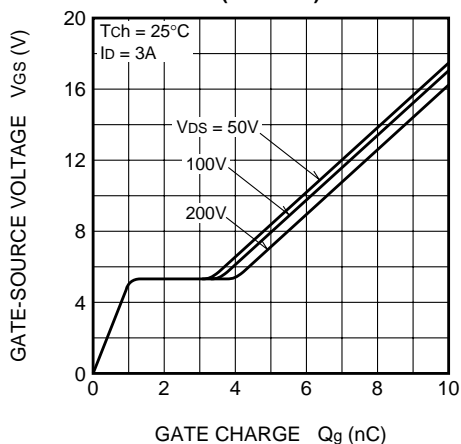


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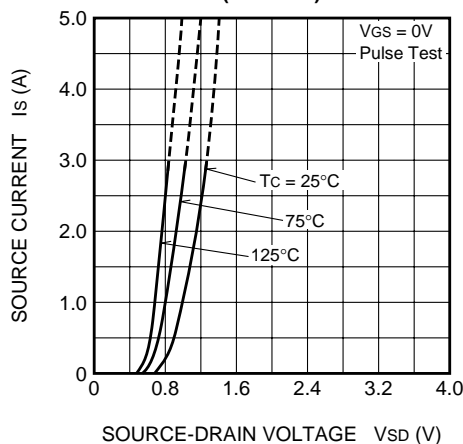


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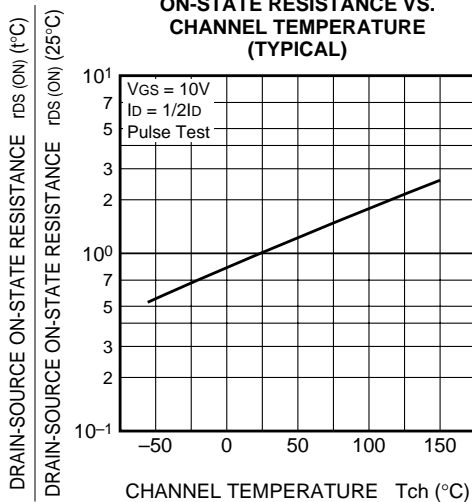
GATE-SOURCE VOLTAGE VS. GATE CHARGE (TYPICAL)



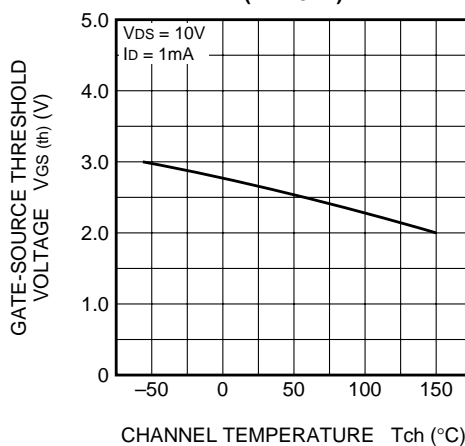
SOURCE-DRAIN DIODE FORWARD CHARACTERISTICS (TYPICAL)



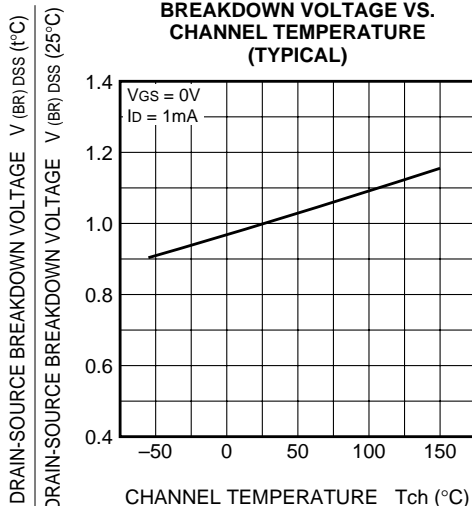
ON-STATE RESISTANCE VS. CHANNEL TEMPERATURE (TYPICAL)



THRESHOLD VOLTAGE VS. CHANNEL TEMPERATURE (TYPICAL)



BREAKDOWN VOLTAGE VS. CHANNEL TEMPERATURE (TYPICAL)



TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS

