

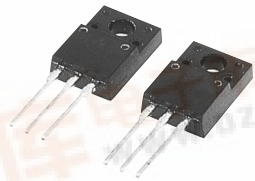
PRELIMINARY
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 Some parametric limits are subject to change.

MITSUBISHI Pch POWER MOSFET

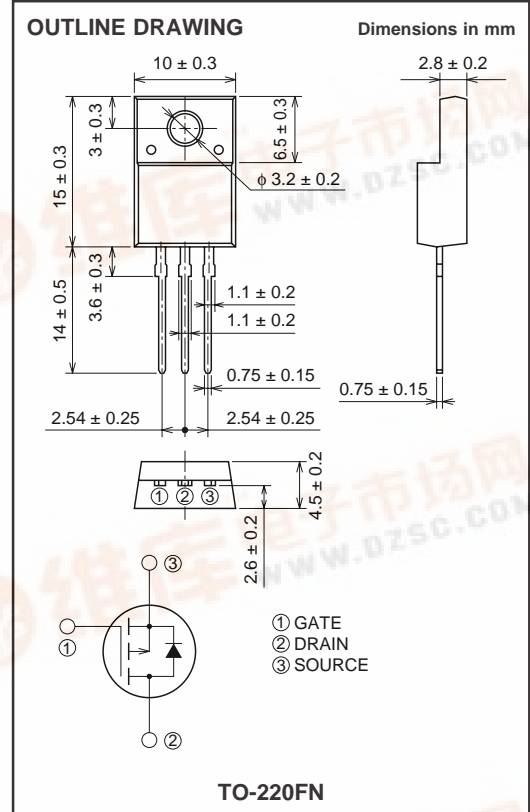
FX6KMJ-06

HIGH-SPEED SWITCHING USE

FX6KMJ-06



- 4V DRIVE
- V_{DSS} -60V
- $r_{DS(ON)}(MAX)$ 0.21 Ω
- I_D -6A
- Integrated Fast Recovery Diode (TYP.) 50ns
- V_{iso} 2000V



APPLICATION

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

MAXIMUM RATINGS (Tc = 25°C)

Symbol	Parameter	Conditions	Ratings	Unit
V_{DSS}	Drain-source voltage	$V_{GS} = 0V$	-60	V
V_{GSS}	Gate-source voltage	$V_{DS} = 0V$	± 20	V
I_D	Drain current		-6	A
I_{DM}	Drain current (Pulsed)		-24	A
I_{DA}	Avalanche drain current (Pulsed)	$L = 100\mu H$	-6	A
I_S	Source current		-6	A
I_{SM}	Source current (Pulsed)		-24	A
P_D	Maximum power dissipation		20	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



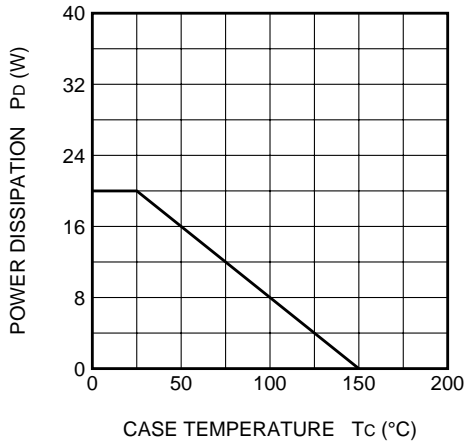
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ELECTRICAL CHARACTERISTICS (Tch = 25°C)

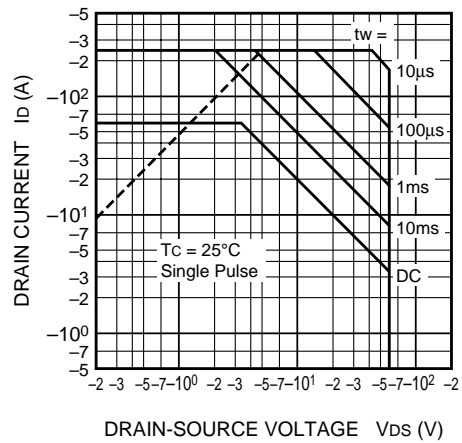
Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
V(BR)DSS	Drain-source breakdown voltage	Id = -1mA, Vgs = 0V	-60	—	—	V
IGSS	Gate-source leakage current	VGS = ±20V, VDS = 0V	—	—	±0.1	μA
IDSS	Drain-source leakage current	VDS = -60V, VGS = 0V	—	—	-0.1	mA
VGS(th)	Gate-source threshold voltage	Id = -1mA, VDS = -10V	-1.3	-1.8	-2.3	V
rDS(ON)	Drain-source on-state resistance	Id = -3A, VGS = -10V	—	0.16	0.21	Ω
rDS(ON)	Drain-source on-state resistance	Id = -3A, VGS = -4V	—	0.27	0.37	Ω
VDS(ON)	Drain-source on-state voltage	Id = -3A, VGS = -10V	—	-0.48	-0.63	V
yfs	Forward transfer admittance	Id = -3A, VDS = -5V	—	4.9	—	S
Ciss	Input capacitance	VDS = -10V, VGS = 0V, f = 1MHz	—	1040	—	pF
Coss	Output capacitance		—	171	—	pF
Crss	Reverse transfer capacitance		—	68	—	pF
td(on)	Turn-on delay time	VDD = -30V, Id = -3A, VGS = -10V, RGEN = RGS = 50Ω	—	13	—	ns
tr	Rise time		—	10	—	ns
td(off)	Turn-off delay time		—	63	—	ns
tf	Fall time		—	31	—	ns
VSD	Source-drain voltage	Is = -3A, VGS = 0V	—	-1.0	-1.5	V
Rth(ch-c)	Thermal resistance	Channel to case	—	—	6.25	°C/W
trr	Reverse recovery time	Is = -6A, dis/dt = 100A/μs	—	50	—	ns

PERFORMANCE CURVES

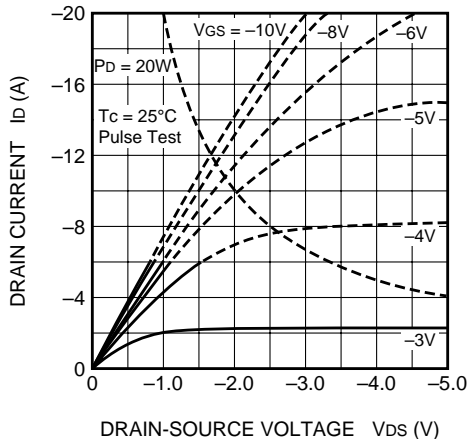
POWER DISSIPATION DERATING CURVE



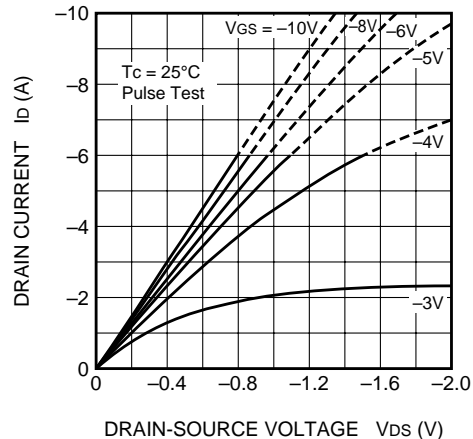
MAXIMUM SAFE OPERATING AREA



OUTPUT CHARACTERISTICS (TYPICAL)



OUTPUT CHARACTERISTICS (TYPICAL)

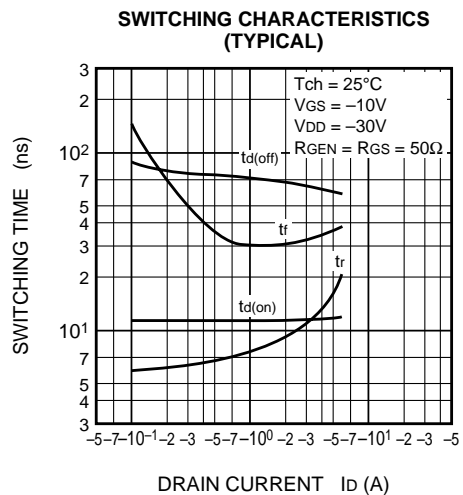
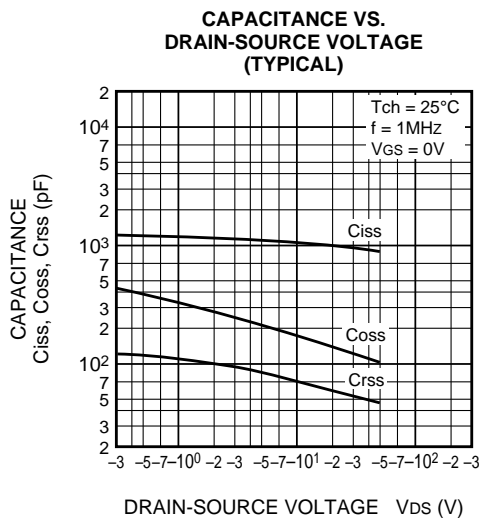
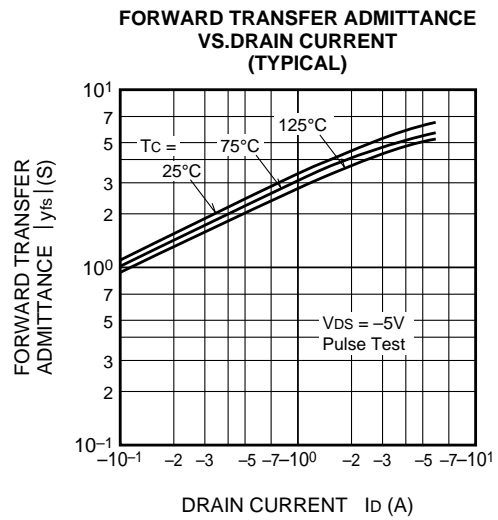
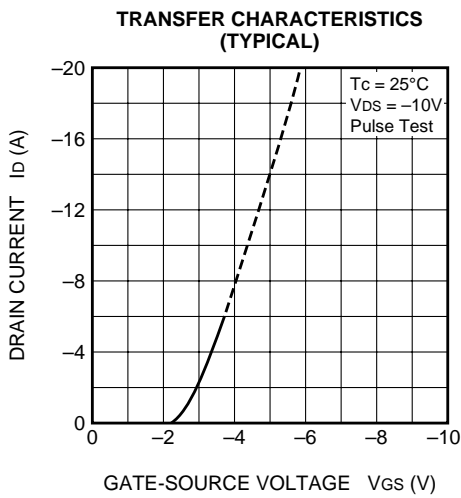
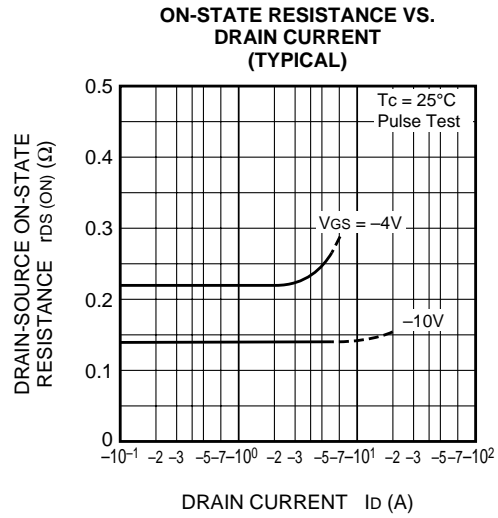
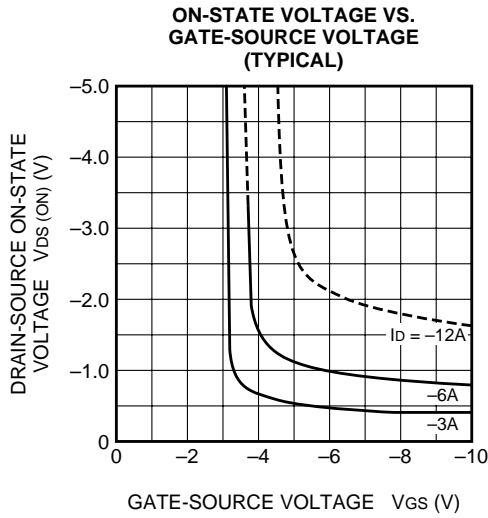


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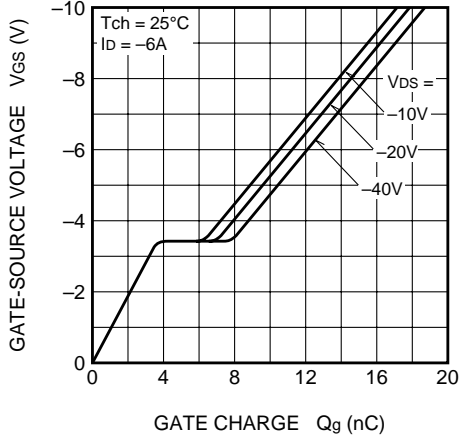
FX6KMJ-06

HIGH-SPEED SWITCHING USE

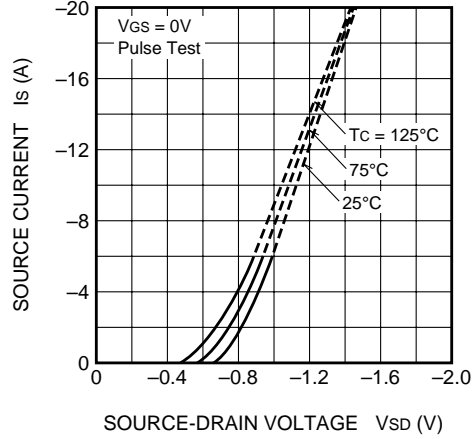


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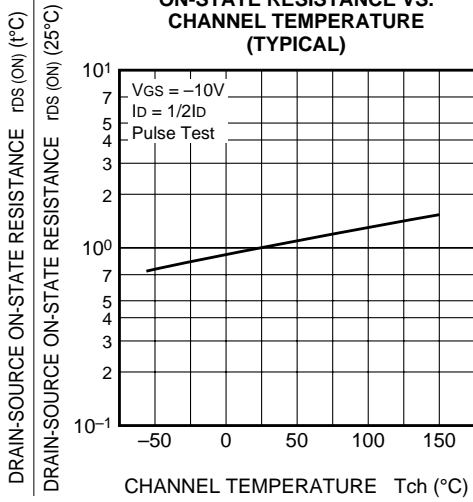
GATE-SOURCE VOLTAGE VS. GATE CHARGE (TYPICAL)



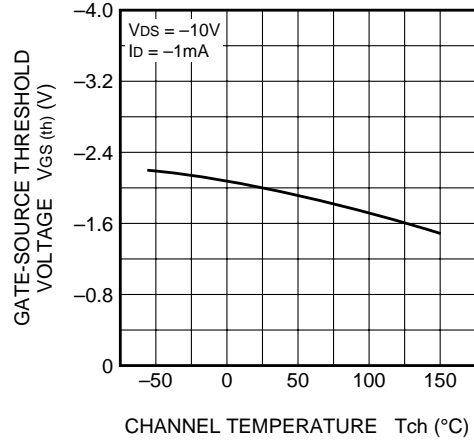
SOURCE-DRAIN DIODE FORWARD CHARACTERISTICS (TYPICAL)



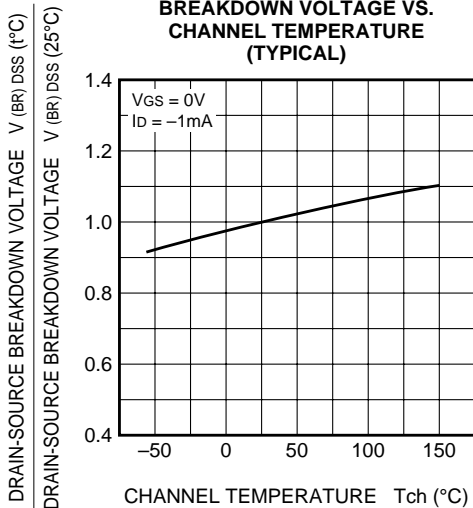
ON-STATE RESISTANCE VS. CHANNEL TEMPERATURE (TYPICAL)



THRESHOLD VOLTAGE VS. CHANNEL TEMPERATURE (TYPICAL)



BREAKDOWN VOLTAGE VS. CHANNEL TEMPERATURE (TYPICAL)



TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS

