

MITSUBISHI Nch POWER MOSFET

FS10ASJ-06

HIGH-SPEED SWITCHING USE

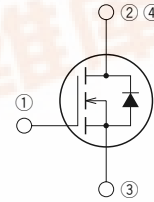
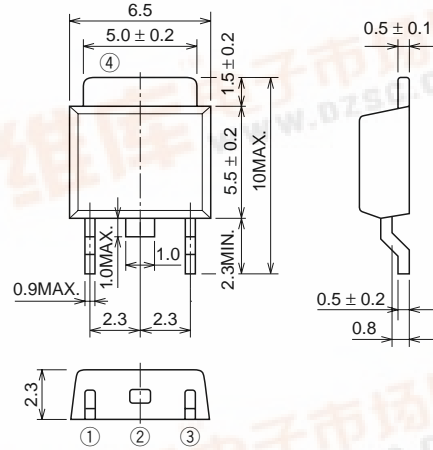
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- 4V DRIVE
- V_{DSS} 60V
- r_{D(S)} (ON) (MAX) 70mΩ
- I_D 10A
- Integrated Fast Recovery Diode (TYP.) 55ns

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_c = 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		10	A
I _{DM}	Drain current (Pulsed)		40	A
I _{DA}	Avalanche drain current (Pulsed)	L = 100μH	10	A
I _S	Source current		10	A
I _{SM}	Source current (Pulsed)		40	A
P _D	Maximum power dissipation		30	W
T _{ch}	Channel temperature		-55 ~ +150	°C
T _{stg}	Storage temperature		-55 ~ +150	°C
—	Weight	Typical value	0.26	g



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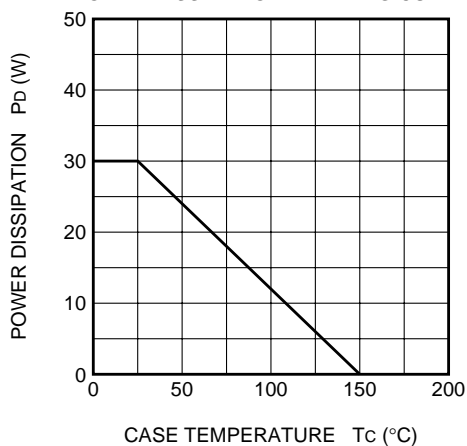
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ELECTRICAL CHARACTERISTICS (Tch = 25°C)

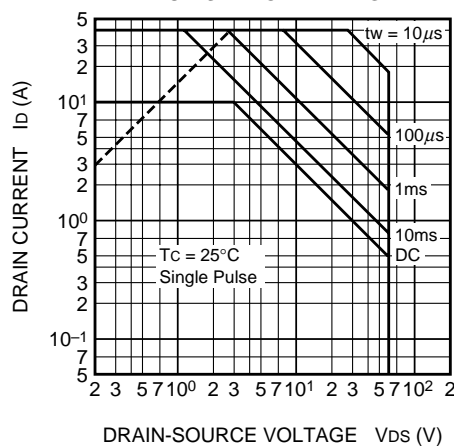
Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
V(BR)DSS	Drain-source breakdown voltage	Id = 1mA, VGS = 0V	60	—	—	V
IGSS	Gate-source leakage current	VGS = ±20V, VDS = 0V	—	—	±0.1	μA
IDSS	Drain-source leakage current	VDS = 60V, VGS = 0V	—	—	0.1	mA
VGS(th)	Gate-source threshold voltage	Id = 1mA, VDS = 10V	1.0	1.5	2.0	V
rDS(ON)	Drain-source on-state resistance	Id = 5A, VGS = 10V	—	53	70	mΩ
rDS(ON)	Drain-source on-state resistance	Id = 5A, VGS = 4V	—	66	91	mΩ
VDS(ON)	Drain-source on-state voltage	Id = 5A, VGS = 10V	—	0.265	0.35	V
yfs	Forward transfer admittance	Id = 5A, VDS = 5V	—	13	—	S
Ciss	Input capacitance	VDS = 10V, VGS = 0V, f = 1MHz	—	800	—	pF
Coss	Output capacitance		—	190	—	pF
Crss	Reverse transfer capacitance		—	80	—	pF
td(on)	Turn-on delay time	VDD = 30V, Id = 5A, VGS = 10V, RGEN = RGS = 50Ω	—	14	—	ns
tr	Rise time		—	17	—	ns
td(off)	Turn-off delay time		—	65	—	ns
tf	Fall time		—	40	—	ns
VSD	Source-drain voltage	Is = 5A, VGS = 0V	—	1.0	1.5	V
Rth(ch-c)	Thermal resistance	Channel to case	—	—	4.17	°C/W
trr	Reverse recovery time	Is = 10A, dis/dt = -100A/μs	—	55	—	ns

PERFORMANCE CURVES

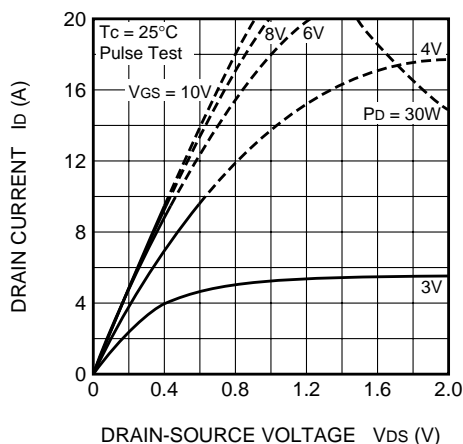
POWER DISSIPATION DERATING CURVE



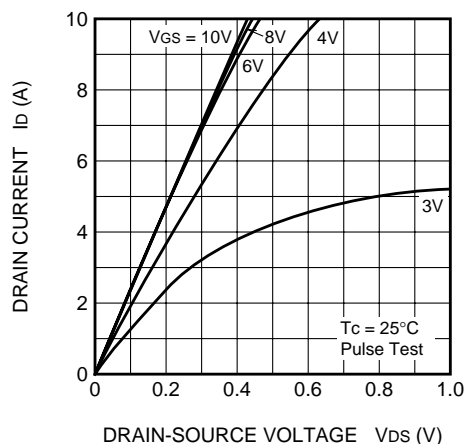
MAXIMUM SAFE OPERATING AREA



OUTPUT CHARACTERISTICS (TYPICAL)



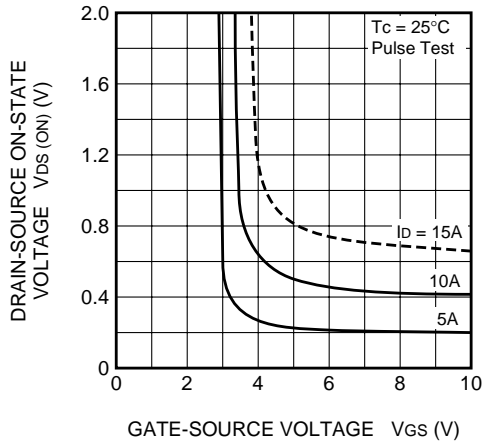
OUTPUT CHARACTERISTICS (TYPICAL)



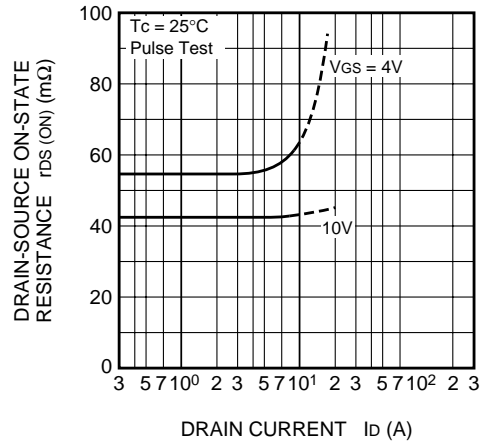
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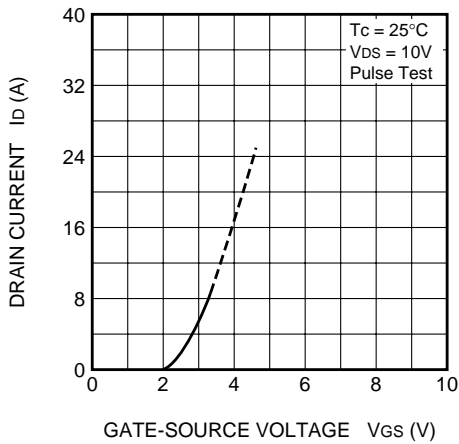
ON-STATE VOLTAGE VS. GATE-SOURCE VOLTAGE (TYPICAL)



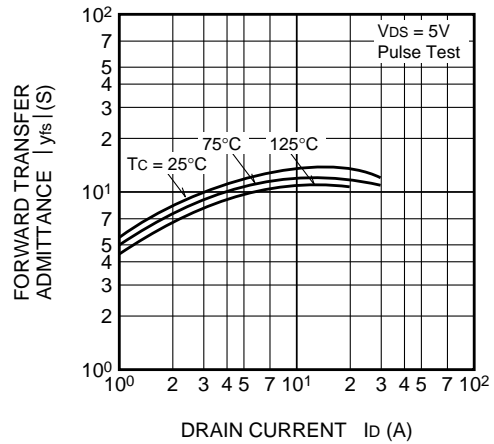
ON-STATE RESISTANCE VS. DRAIN CURRENT (TYPICAL)



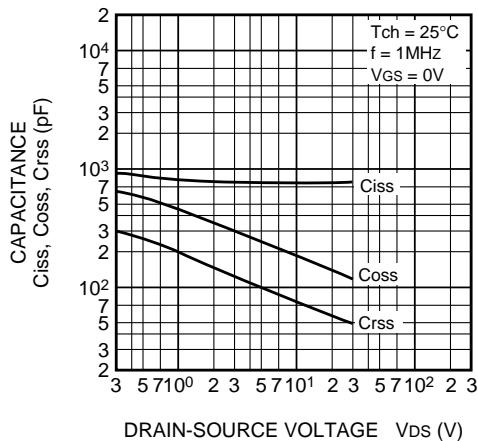
TRANSFER CHARACTERISTICS (TYPICAL)



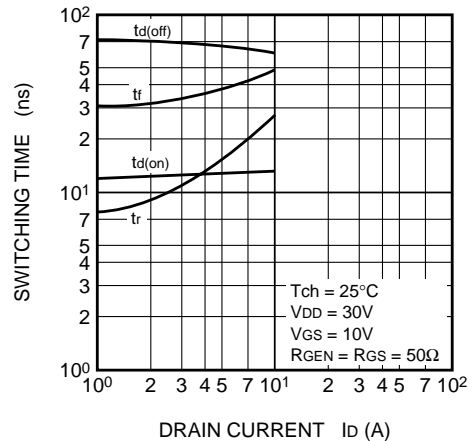
FORWARD TRANSFER ADMITTANCE VS. DRAIN CURRENT (TYPICAL)



CAPACITANCE VS. DRAIN-SOURCE VOLTAGE (TYPICAL)



SWITCHING CHARACTERISTICS (TYPICAL)



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