

MITSUBISHI Nch POWER MOSFET

FS10SM-10

HIGH-SPEED SWITCHING USE

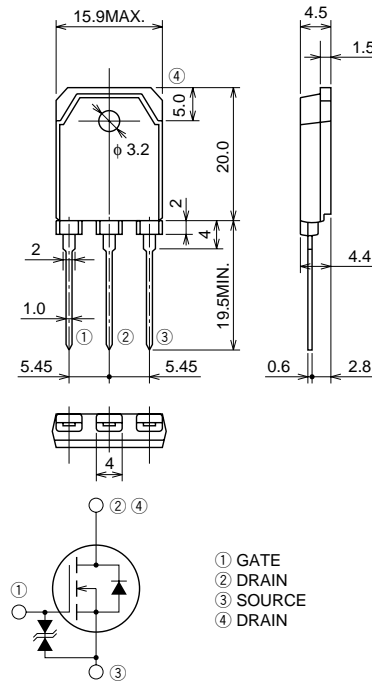
FS10SM-10



- V_{DSS} 500V
- r_{DS (ON)} (MAX) 0.90Ω
- I_D 10A

OUTLINE DRAWING

Dimensions in mm



TO-3P

APPLICATION

SMPS, DC-DC Converter, battery charger, power supply of printer, copier, HDD, FDD, TV, VCR, personal computer etc.

MAXIMUM RATINGS (T_c = 25°C)

Symbol	Parameter	Conditions	Ratings	Unit
V _{DSS}	Drain-source voltage	V _{GS} = 0V	500	V
V _{GSS}	Gate-source voltage	V _{DS} = 0V	±30	V
I _D	Drain current		10	A
I _{DM}	Drain current (Pulsed)		30	A
P _D	Maximum power dissipation		125	W
T _{ch}	Channel temperature		-55 ~ +150	°C
T _{stg}	Storage temperature		-55 ~ +150	°C
—	Weight	Typical value	4.8	g

Feb.1999



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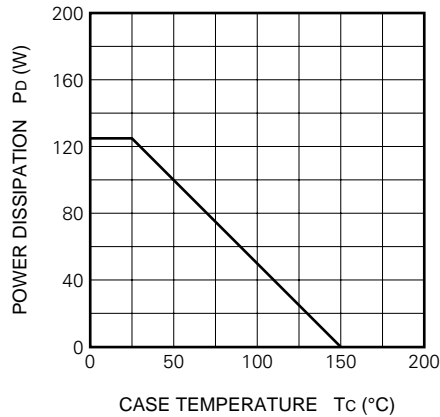
HIGH-SPEED SWITCHING USE

ELECTRICAL CHARACTERISTICS (Tch = 25°C)

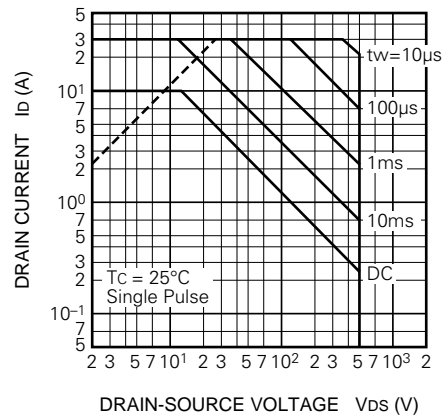
Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
V (BR) DSS	Drain-source breakdown voltage	Id = 1mA, VGS = 0V	500	—	—	V
V (BR) GSS	Gate-source breakdown voltage	IG = ±100μA, VDS = 0V	±30	—	—	V
IGSS	Gate-source leakage current	VGS = ±25V, VDS = 0V	—	—	±10	μA
IDSS	Drain-source leakage current	VDS = 500V, VGS = 0V	—	—	1	mA
VGS (th)	Gate-source threshold voltage	Id = 1mA, VDS = 10V	2	3	4	V
rDS (ON)	Drain-source on-state resistance	Id = 5A, VGS = 10V	—	0.70	0.90	Ω
VDS (ON)	Drain-source on-state voltage	Id = 5A, VGS = 10V	—	3.5	4.5	V
yfs	Forward transfer admittance	Id = 5A, VDS = 10V	3.3	5.5	—	S
Ciss	Input capacitance	VDS = 25V, VGS = 0V, f = 1MHz	—	1100	—	pF
Coss	Output capacitance		—	135	—	pF
Crss	Reverse transfer capacitance		—	20	—	pF
td (on)	Turn-on delay time		—	20	—	ns
tr	Rise time	VDD = 200V, Id = 5A, VGS = 10V, RGEN = RGS = 50Ω	—	30	—	ns
td (off)	Turn-off delay time		—	95	—	ns
tf	Fall time		—	35	—	ns
VSD	Source-drain voltage	Is = 5A, VGS = 0V	—	1.5	2.0	V
Rth (ch-c)	Thermal resistance	Channel to case	—	—	1.0	°C/W

PERFORMANCE CURVES

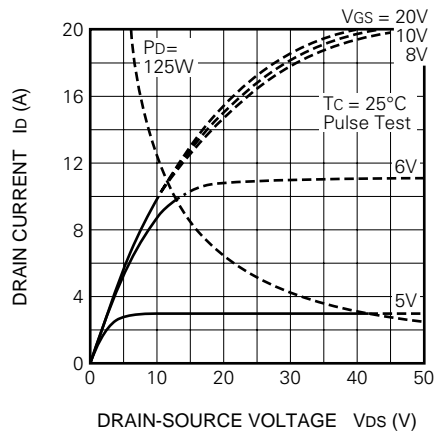
POWER DISSIPATION DERATING CURVE



MAXIMUM SAFE OPERATING AREA



OUTPUT CHARACTERISTICS (TYPICAL)



OUTPUT CHARACTERISTICS (TYPICAL)

