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MITSUBISHI Nch POWER MOSFET

FS10SM-16A

HIGH-SPEED SWITCHING USE

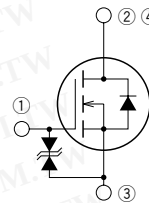
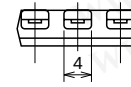
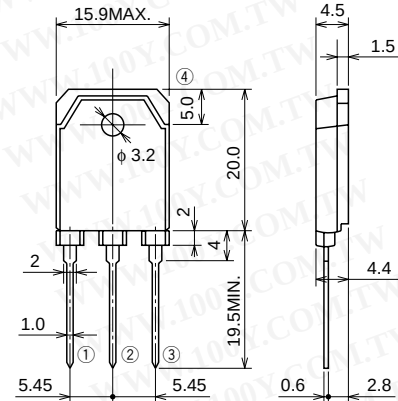
FS10SM-16A



- V_{DSS} 800V
- r_{DS} (ON) (MAX) 0.98Ω
- I_D 10A

OUTLINE DRAWING

Dimensions in mm



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

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)

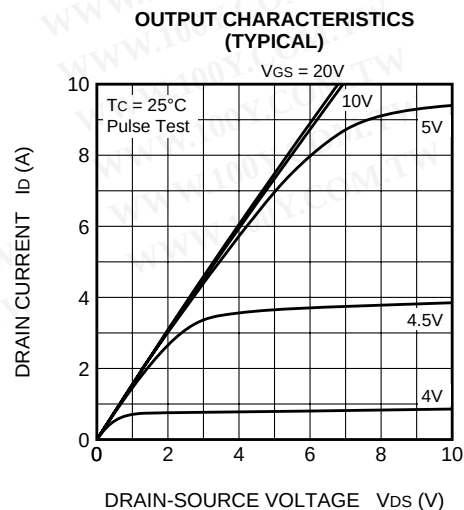
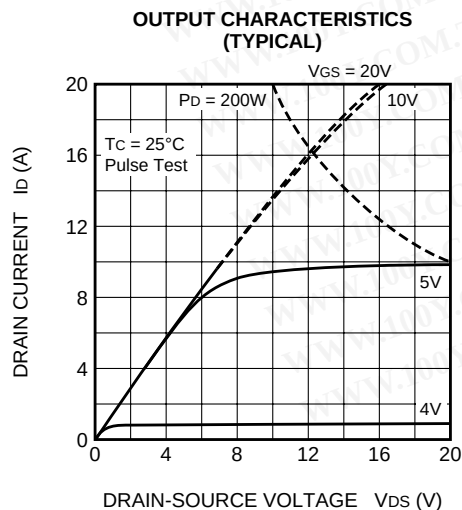
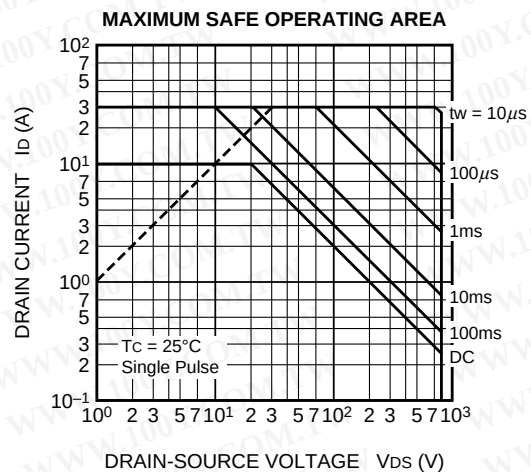
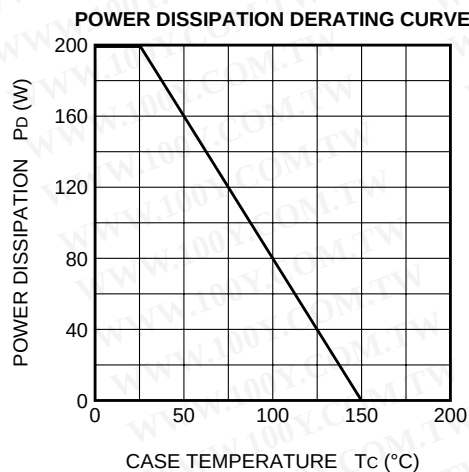
Symbol	Parameter	Conditions	Ratings	Unit
V _{DSS}	Drain-source voltage	V _{GS} = 0V	800	V
V _{GSS}	Gate-source voltage	V _{DS} = 0V	±30	V
I _D	Drain current		10	A
I _{DM}	Drain current (Pulsed)		30	A
P _D	Maximum power dissipation		200	W
T _{ch}	Channel temperature		-55 ~ +150	°C
T _{stg}	Storage temperature		-55 ~ +150	°C
—	Weight	Typical value	4.8	g

Feb.1999

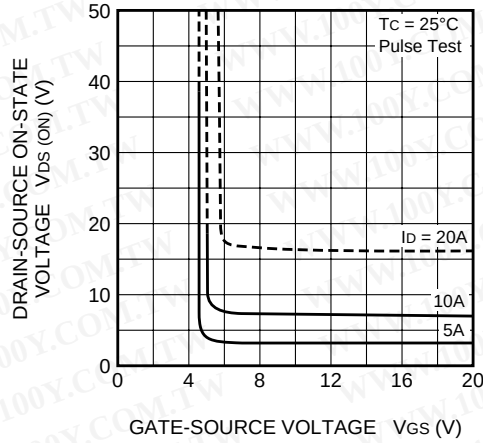
ELECTRICAL CHARACTERISTICS (Tch = 25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
V(BR)DSS	Drain-source breakdown voltage	Id = 1mA, VGS = 0V	800	—	—	V
V(BR)GSS	Gate-source breakdown voltage	IGS = ±100μA, VDS = 0V	±30	—	—	V
IGSS	Gate-source leakage current	VGS = ±25V, VDS = 0V	—	—	±10	μA
IDSS	Drain-source leakage current	VDS = 800V, 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	—	0.76	0.98	Ω
VDS(ON)	Drain-source on-state voltage	Id = 5A, VGS = 10V	—	3.80	4.90	V
yfs	Forward transfer admittance	Id = 5A, VDS = 10V	6.0	10.0	—	S
Ciss	Input capacitance	VDS = 25V, VGS = 0V, f = 1MHz	—	2250	—	pF
Coss	Output capacitance		—	230	—	pF
Crss	Reverse transfer capacitance		—	42	—	pF
td(on)	Turn-on delay time	VDD = 200V, Id = 5A, VGS = 10V, RGEN = RGS = 50Ω	—	38	—	ns
tr	Rise time		—	46	—	ns
td(off)	Turn-off delay time		—	260	—	ns
tf	Fall time		—	75	—	ns
VSD	Source-drain voltage	IS = 5A, VGS = 0V	—	1.0	1.5	V
Rth(ch-c)	Thermal resistance	Channel to case	—	—	0.625	°C/W

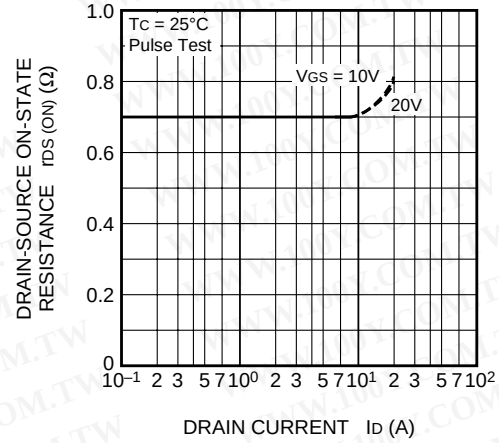
PERFORMANCE CURVES



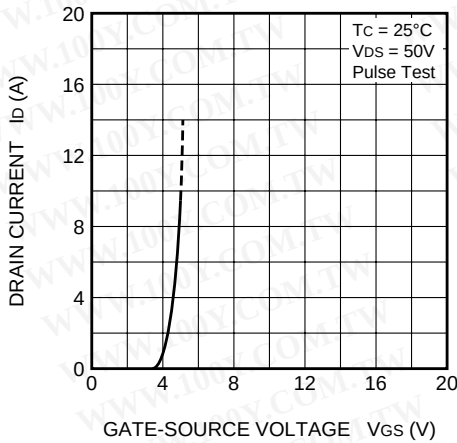
ON-STATE VOLTAGE VS.
GATE-SOURCE VOLTAGE
(TYPICAL)



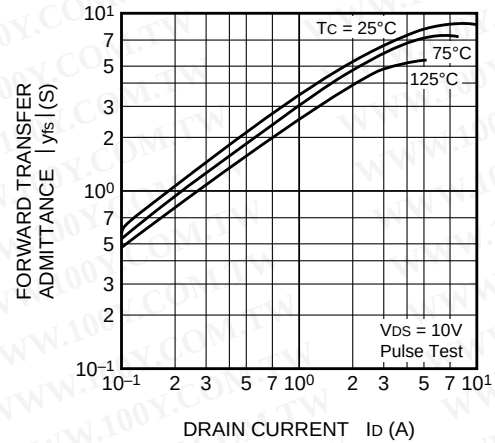
ON-STATE RESISTANCE VS.
DRAIN CURRENT
(TYPICAL)



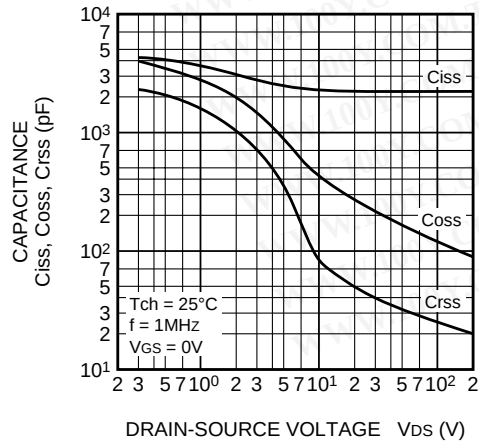
TRANSFER CHARACTERISTICS
(TYPICAL)



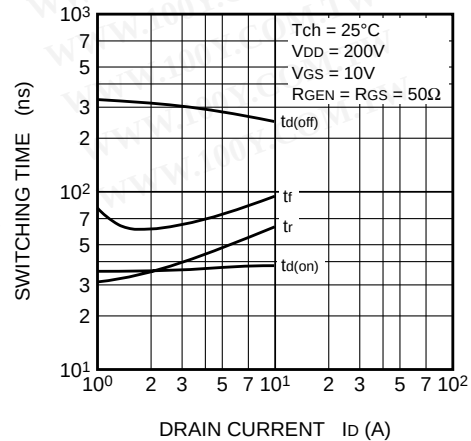
FORWARD TRANSFER ADMITTANCE
VS.DRAIN CURRENT
(TYPICAL)



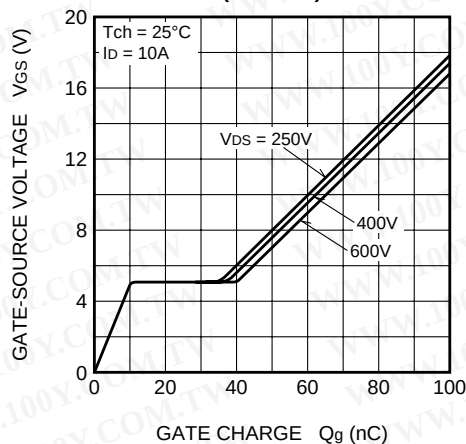
CAPACITANCE VS.
DRAIN-SOURCE VOLTAGE
(TYPICAL)



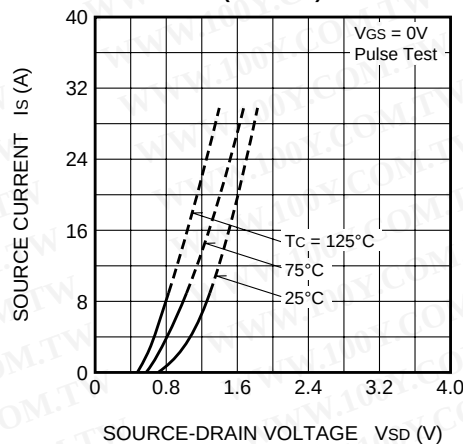
SWITCHING CHARACTERISTICS
(TYPICAL)



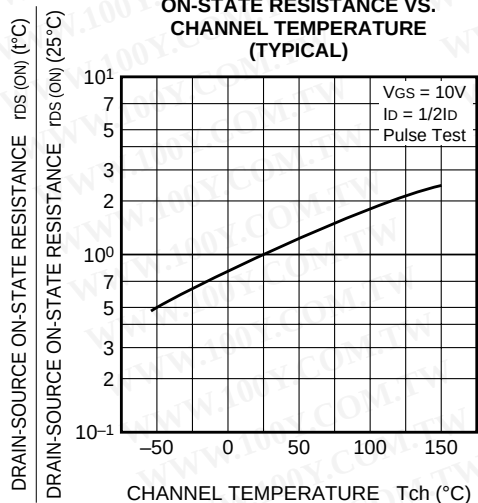
GATE-SOURCE VOLTAGE
 VS.GATE CHARGE
 (TYPICAL)



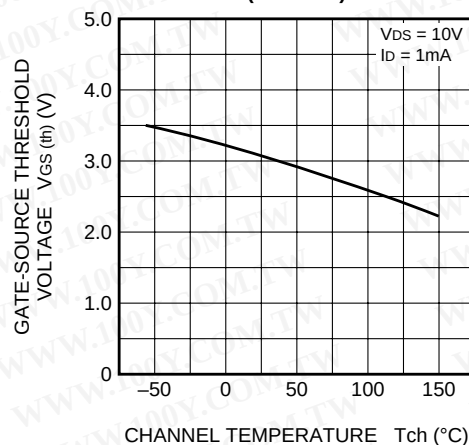
SOURCE-DRAIN DIODE
 FORWARD CHARACTERISTICS
 (TYPICAL)



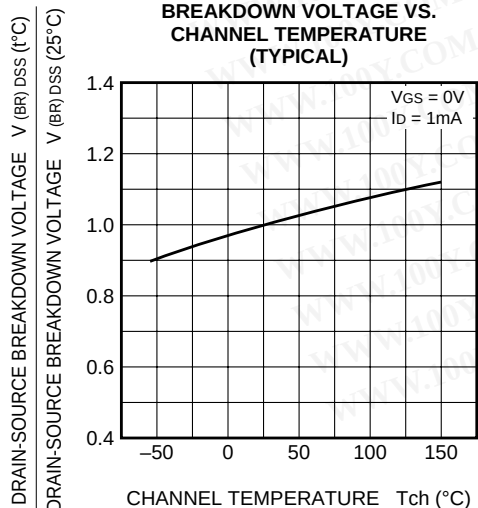
ON-STATE RESISTANCE VS.
 CHANNEL TEMPERATURE
 (TYPICAL)



THRESHOLD VOLTAGE VS.
 CHANNEL TEMPERATURE
 (TYPICAL)



BREAKDOWN VOLTAGE VS.
 CHANNEL TEMPERATURE
 (TYPICAL)



TRANSIENT THERMAL IMPEDANCE
 CHARACTERISTICS

