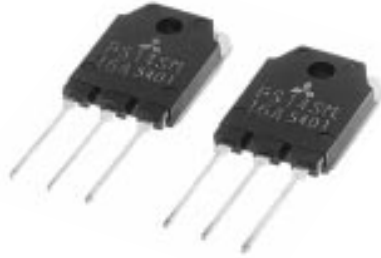


MITSUBISHI Nch POWER MOSFET

FS14SM-16A

HIGH-SPEED SWITCHING USE

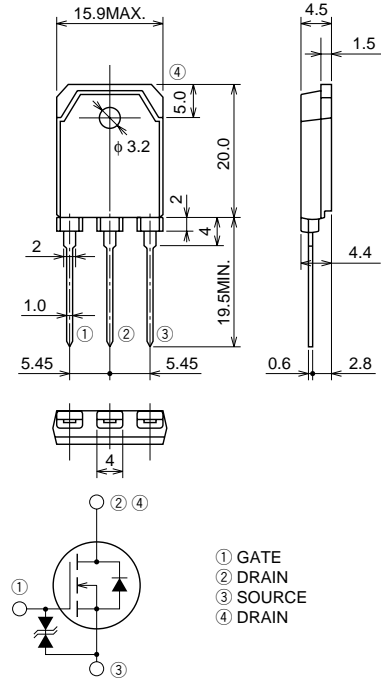
FS14SM-16A



- V_{DSS} 800V
- r_{DS (ON)} (MAX) 0.70Ω
- I_D 14A

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	800	V
V _{GSS}	Gate-source voltage	V _{DS} = 0V	±30	V
I _D	Drain current		14	A
I _{DM}	Drain current (Pulsed)		42	A
P _D	Maximum power dissipation		275	W
T _{ch}	Channel temperature		-55 ~ +150	°C
T _{stg}	Storage temperature		-55 ~ +150	°C
—	Weight	Typical value	4.8	g

Feb.1999



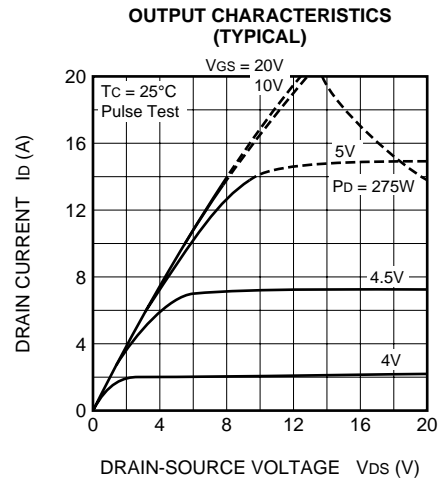
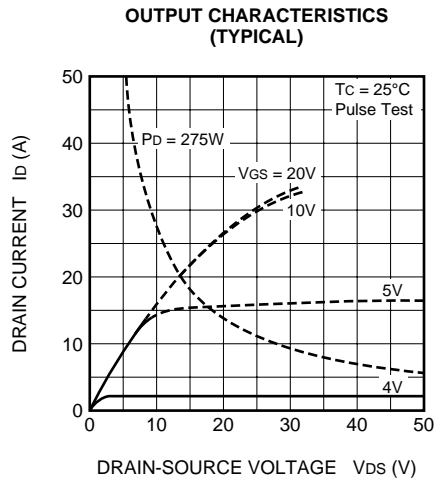
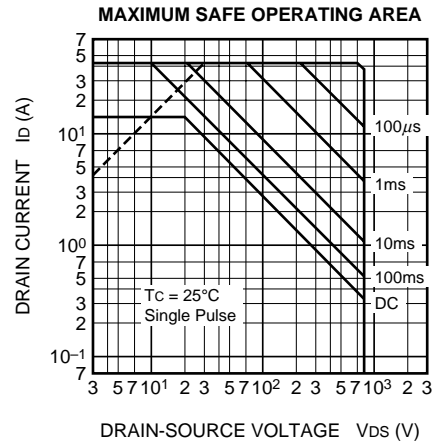
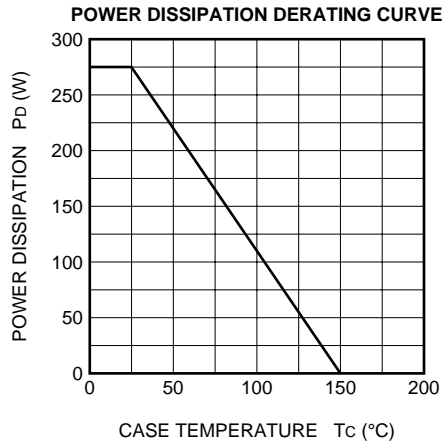
FS14SM-16A

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	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 = 7A, VGS = 10V	—	0.52	0.70	Ω
VDS(ON)	Drain-source on-state voltage	Id = 7A, VGS = 10V	—	3.64	4.90	V
yfs	Forward transfer admittance	Id = 7A, VDS = 10V	9	15	—	S
Ciss	Input capacitance	VDS = 25V, VGS = 0V, f = 1MHz	—	2900	—	pF
Coss	Output capacitance		—	290	—	pF
Crss	Reverse transfer capacitance		—	50	—	pF
td(on)	Turn-on delay time		—	45	—	ns
tr	Rise time	VDD = 200V, Id = 7A, VGS = 10V, RGEN = RGS = 50Ω	—	65	—	ns
td(off)	Turn-off delay time		—	325	—	ns
tf	Fall time		—	100	—	ns
VSD	Source-drain voltage	IS = 7A, VGS = 0V	—	1.0	1.5	V
Rth(ch-c)	Thermal resistance	Channel to case	—	—	0.45	°C/W

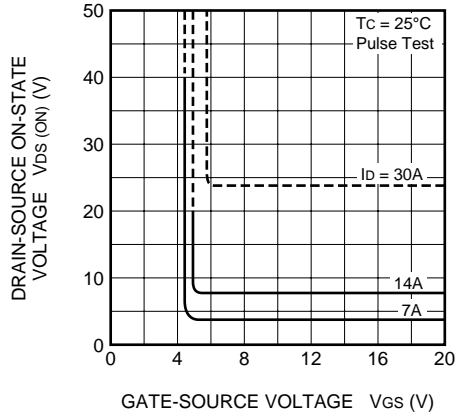
PERFORMANCE CURVES



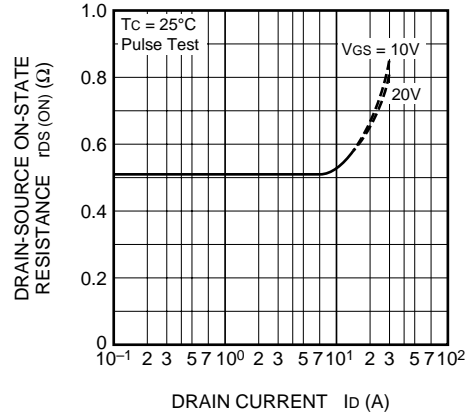
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HIGH-SPEED SWITCHING USE

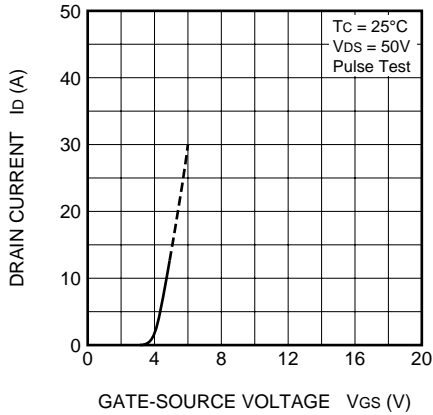
ON-STATE VOLTAGE VS. GATE-SOURCE VOLTAGE (TYPICAL)



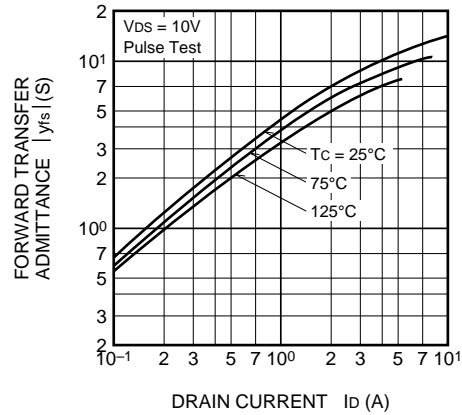
ON-STATE RESISTANCE VS. DRAIN CURRENT (TYPICAL)



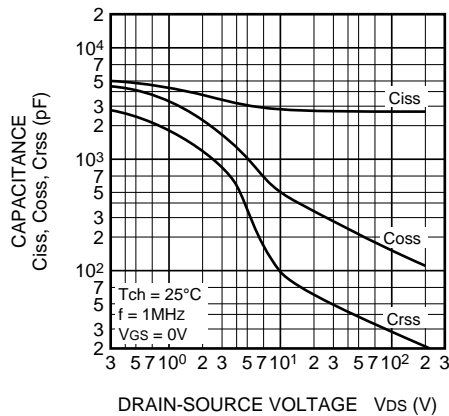
TRANSFER CHARACTERISTICS (TYPICAL)



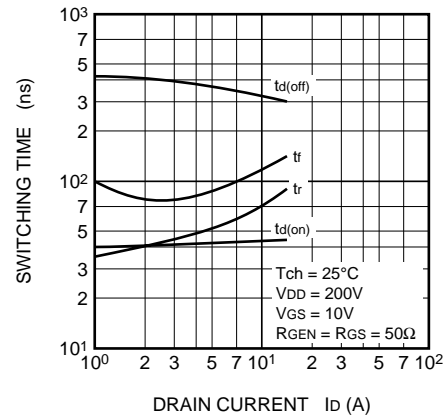
FORWARD TRANSFER ADMITTANCE VS. DRAIN CURRENT (TYPICAL)



CAPACITANCE VS. DRAIN-SOURCE VOLTAGE (TYPICAL)



SWITCHING CHARACTERISTICS (TYPICAL)



FS14SM-16A

HIGH-SPEED SWITCHING USE

