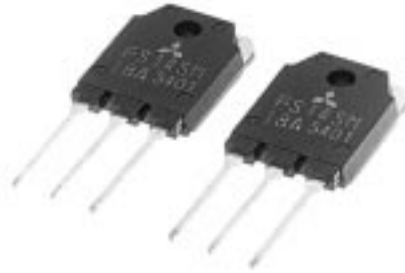


MITSUBISHI Nch POWER MOSFET

FS14SM-18A

HIGH-SPEED SWITCHING USE

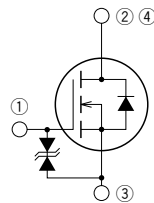
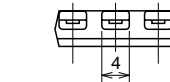
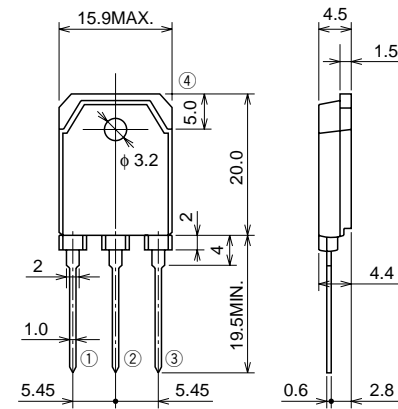
FS14SM-18A



- V_{DS} 900V
- $r_{DS(ON)}(MAX)$ 0.85Ω
- I_D 14A

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_{DS}	Drain-source voltage	$V_{GS} = 0V$	900	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

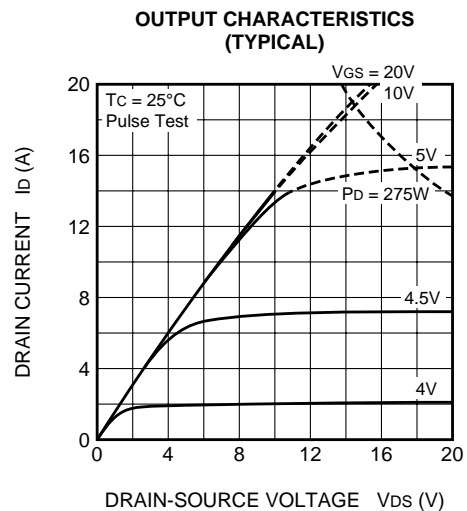
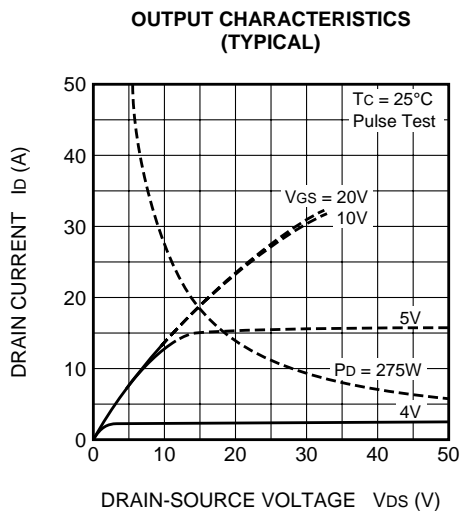
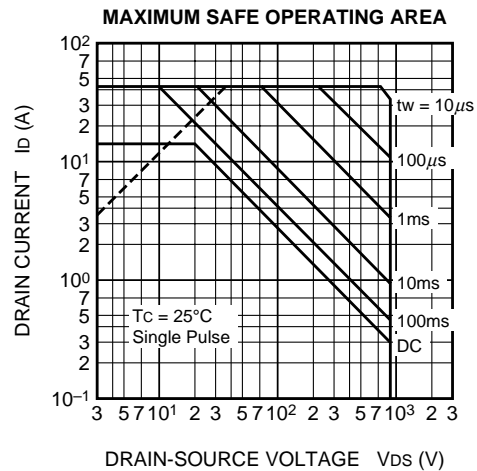
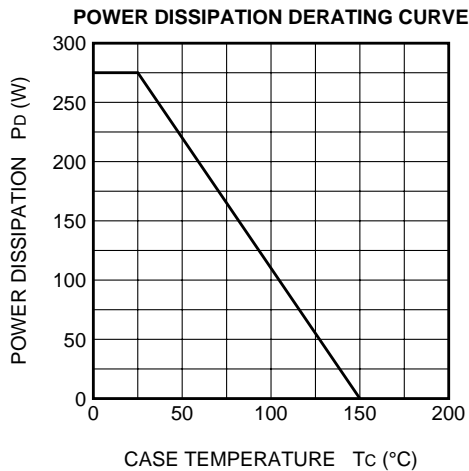
FS14SM-18A

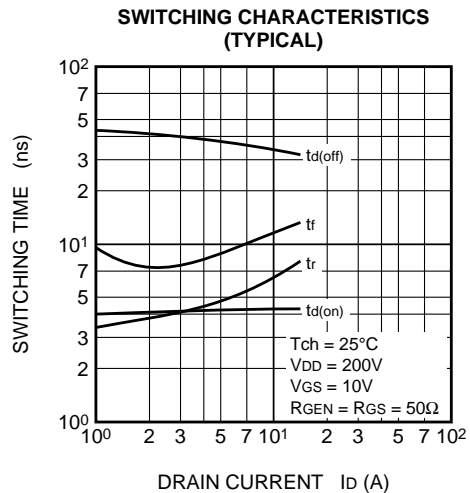
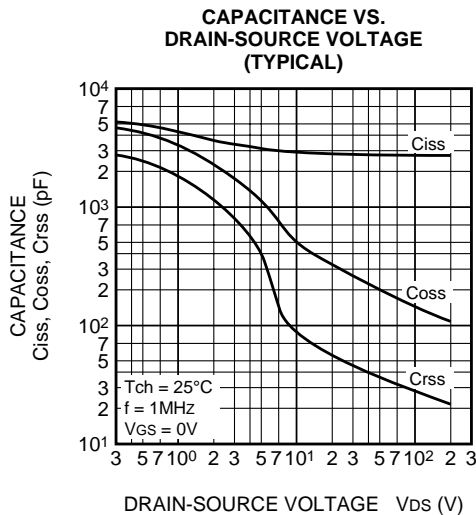
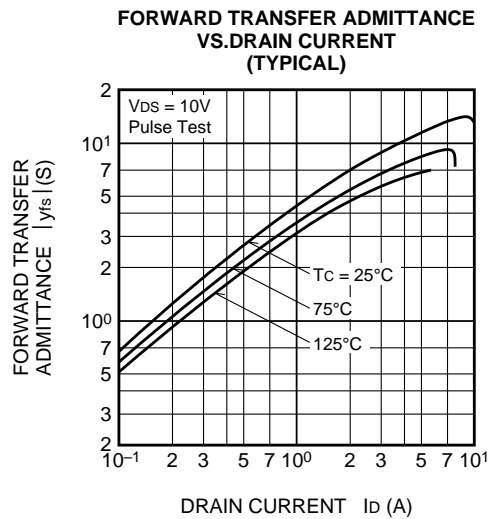
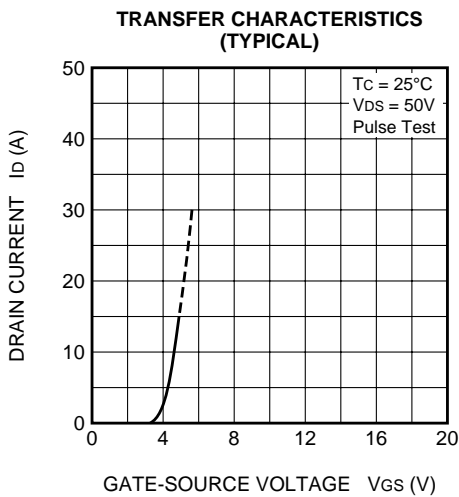
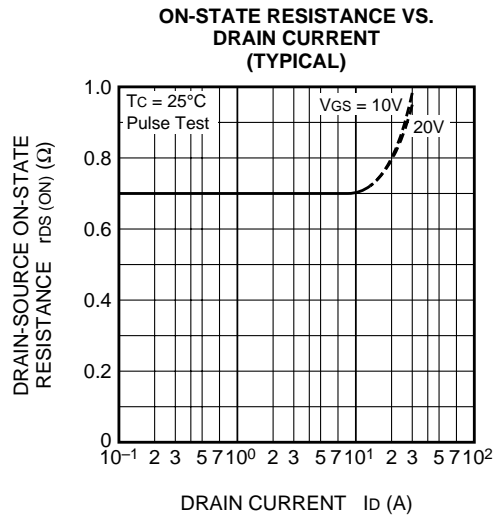
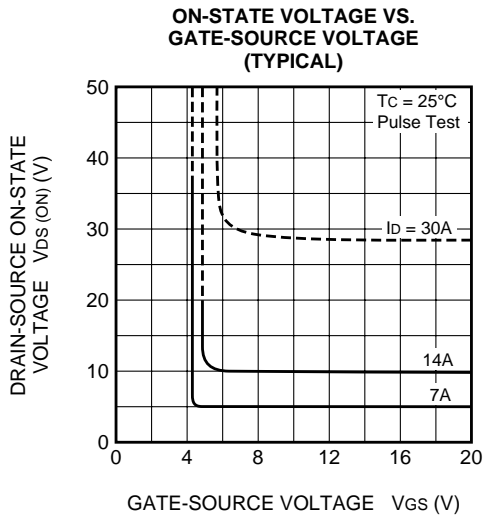
HIGH-SPEED SWITCHING USE

ELECTRICAL CHARACTERISTICS (T_{ch} = 25°C)

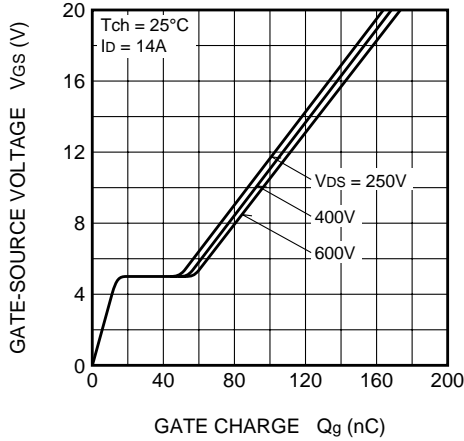
Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
V (BR) DSS	Drain-source breakdown voltage	I _D = 1mA, V _{GS} = 0V	900	—	—	V
V (BR) GSS	Gate-source breakdown voltage	I _{GS} = ±100μA, V _{DS} = 0V	±30	—	—	V
I _{GSS}	Gate-source leakage current	V _{GS} = ±25V, V _{DS} = 0V	—	—	±10	μA
I _{DSS}	Drain-source leakage current	V _{DS} = 900V, V _{GS} = 0V	—	—	1	mA
V _{GS} (th)	Gate-source threshold voltage	I _D = 1mA, V _{DS} = 10V	2	3	4	V
r _{DS} (ON)	Drain-source on-state resistance	I _D = 7A, V _{GS} = 10V	—	0.63	0.85	Ω
V _{DS} (ON)	Drain-source on-state voltage	I _D = 7A, V _{GS} = 10V	—	4.41	5.95	V
y _{fs}	Forward transfer admittance	I _D = 7A, V _{DS} = 10V	9.0	15.0	—	S
C _{iss}	Input capacitance	V _{DS} = 25V, V _{GS} = 0V, f = 1MHz	—	2900	—	pF
C _{oss}	Output capacitance		—	290	—	pF
C _{rss}	Reverse transfer capacitance		—	50	—	pF
t _d (on)	Turn-on delay time	V _{DD} = 200V, I _D = 7A, V _{GS} = 10V, R _{GEN} = R _{GS} = 50Ω	—	45	—	ns
t _r	Rise time		—	65	—	ns
t _d (off)	Turn-off delay time		—	325	—	ns
t _f	Fall time		—	100	—	ns
V _{SD}	Source-drain voltage		I _S = 7A, V _{GS} = 0V	—	1.0	1.5
R _{th} (ch-c)	Thermal resistance	Channel to case	—	—	0.45	°C/W

PERFORMANCE CURVES

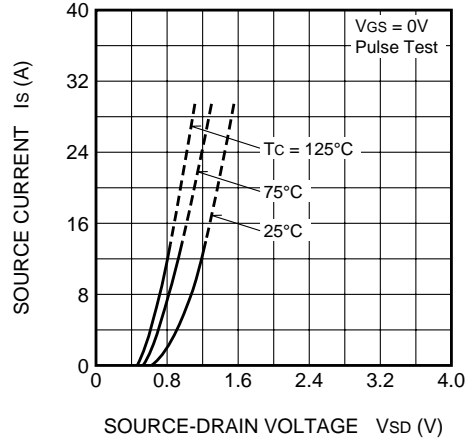




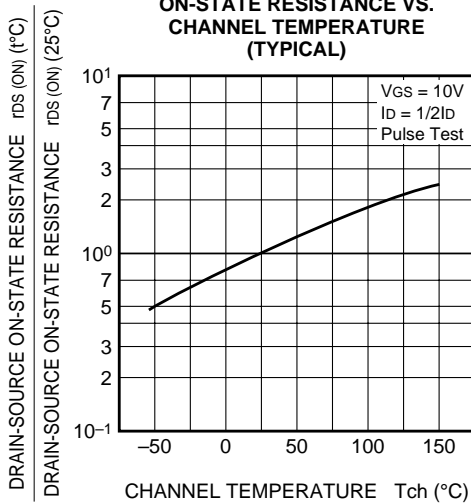
GATE-SOURCE VOLTAGE VS. GATE CHARGE (TYPICAL)



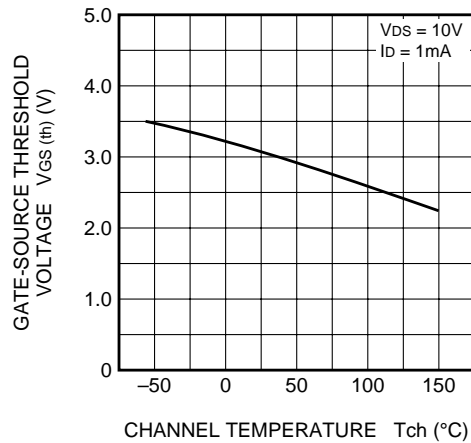
SOURCE-DRAIN DIODE FORWARD CHARACTERISTICS (TYPICAL)



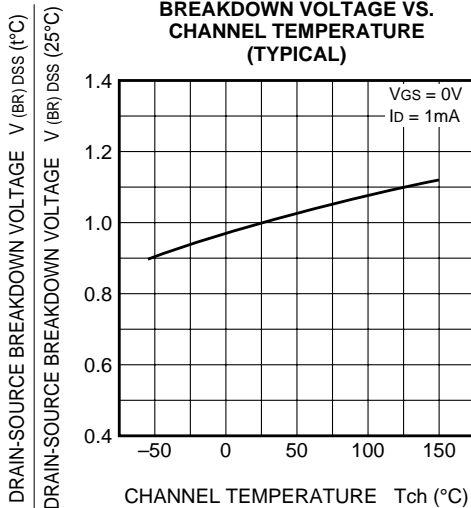
ON-STATE RESISTANCE VS. CHANNEL TEMPERATURE (TYPICAL)



THRESHOLD VOLTAGE VS. CHANNEL TEMPERATURE (TYPICAL)



BREAKDOWN VOLTAGE VS. CHANNEL TEMPERATURE (TYPICAL)



TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS

