


MITSUBISHI Nch POWER MOSFET

FS5KM-16A

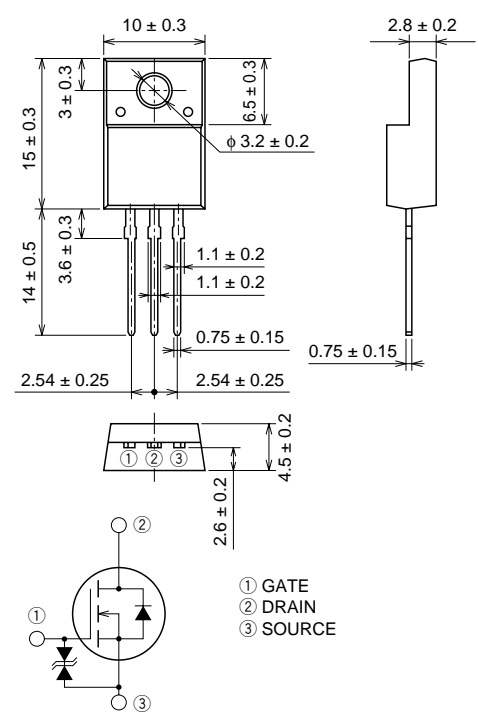
HIGH-SPEED SWITCHING USE

FS5KM-16A



- V_{DSS} 800V
- $r_{DS(ON)}$ (MAX) 2.3Ω
- I_D 5A
- V_{iso} 2000V

OUTLINE DRAWING Dimensions in mm



TO-220FN

APPLICATION

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

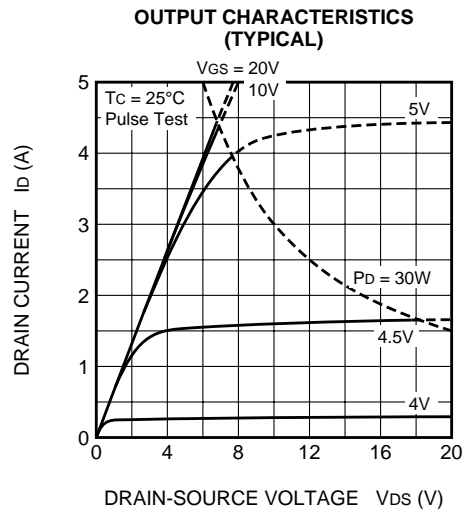
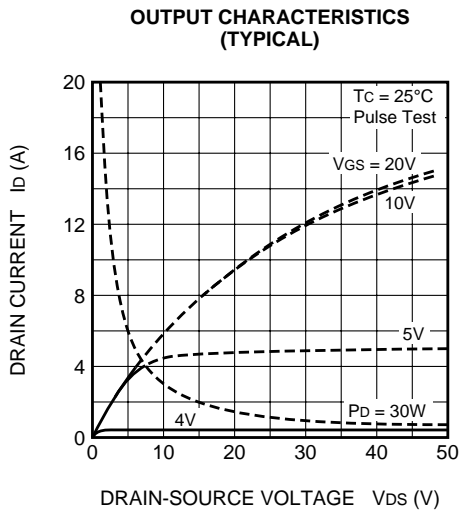
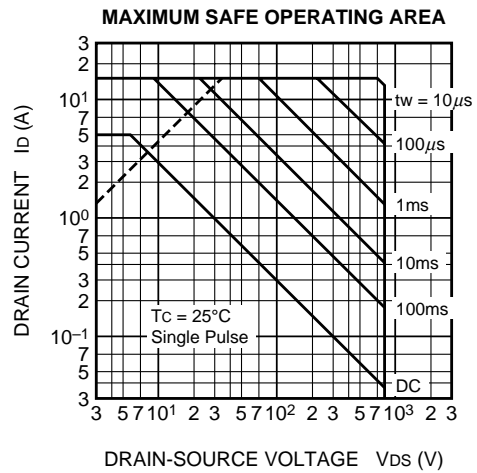
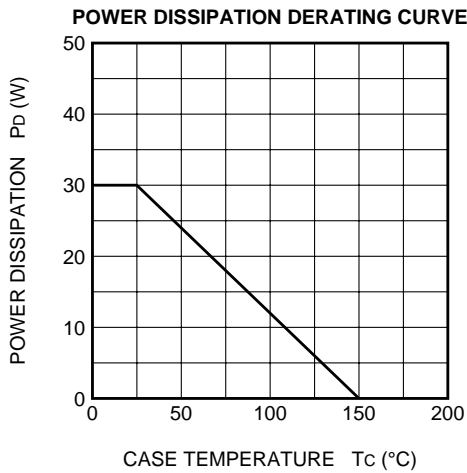
MAXIMUM RATINGS ($T_c = 25^\circ\text{C}$)

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		5	A
I_{DM}	Drain current (Pulsed)		15	A
P_D	Maximum power dissipation		35	W
T_{ch}	Channel temperature		$-55 \sim +150$	$^\circ\text{C}$
T_{stg}	Storage temperature		$-55 \sim +150$	$^\circ\text{C}$
V_{iso}	Isolation voltage	AC for 1 minute, Terminal to case	2000	V_{rms}
—	Weight	Typical value	2	g

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 = 2A, VGS = 10V	—	1.76	2.30	Ω
VDS (ON)	Drain-source on-state voltage	Id = 2A, VGS = 10V	—	3.52	4.60	V
yfs	Forward transfer admittance	Id = 2A, VDS = 10V	3.0	5.0	—	S
Ciss	Input capacitance	VDS = 25V, VGS = 0V, f = 1MHz	—	1050	—	pF
Coss	Output capacitance		—	100	—	pF
Crss	Reverse transfer capacitance		—	20	—	pF
td (on)	Turn-on delay time	VDD = 200V, Id = 2A, VGS = 10V, RGEN = RGS = 50Ω	—	20	—	ns
tr	Rise time		—	18	—	ns
td (off)	Turn-off delay time		—	110	—	ns
tf	Fall time		—	35	—	ns
VSD	Source-drain voltage	IS = 2A, VGS = 0V	—	1.0	1.5	V
Rth (ch-c)	Thermal resistance	Channel to case	—	—	3.57	°C/W

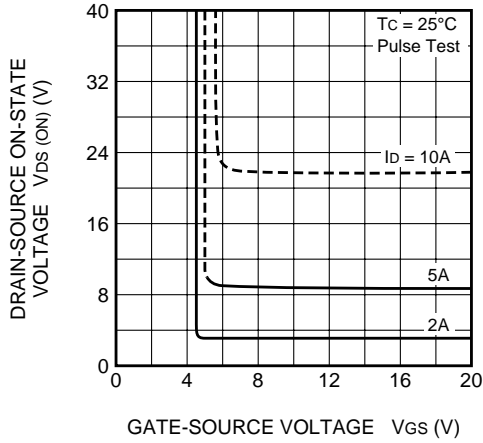
PERFORMANCE CURVES



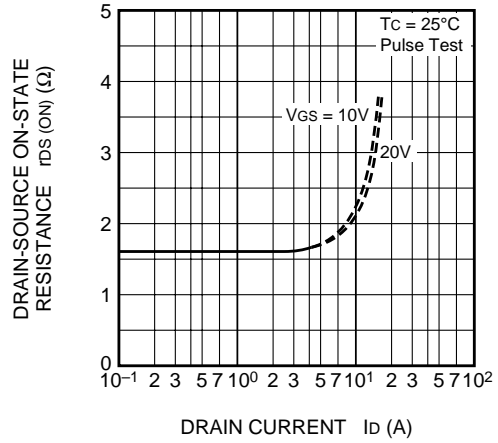
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HIGH-SPEED SWITCHING USE

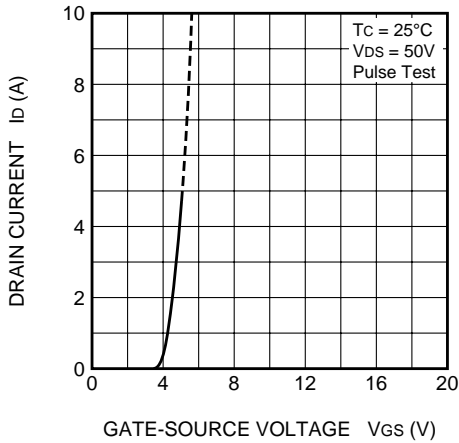
ON-STATE VOLTAGE VS. GATE-SOURCE VOLTAGE (TYPICAL)



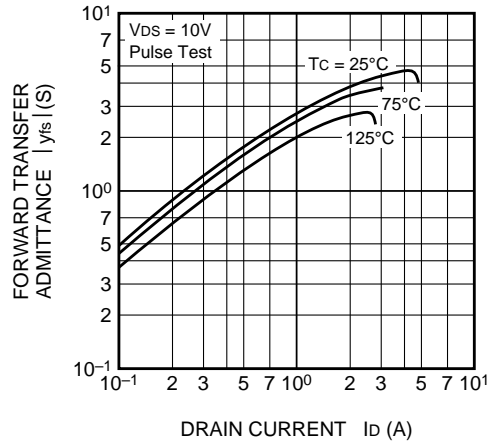
ON-STATE RESISTANCE VS. DRAIN CURRENT (TYPICAL)



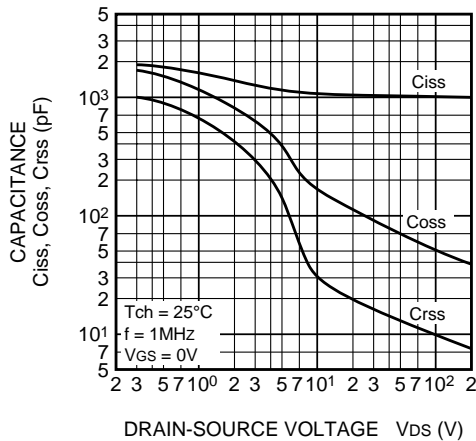
TRANSFER CHARACTERISTICS (TYPICAL)



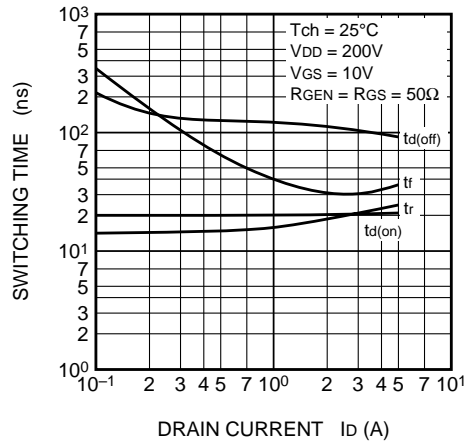
FORWARD TRANSFER ADMITTANCE VS. DRAIN CURRENT (TYPICAL)



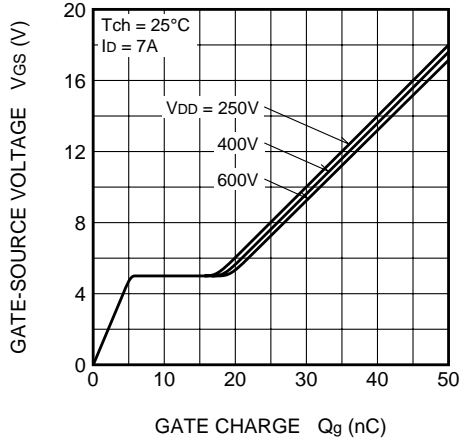
CAPACITANCE VS. DRAIN-SOURCE VOLTAGE (TYPICAL)



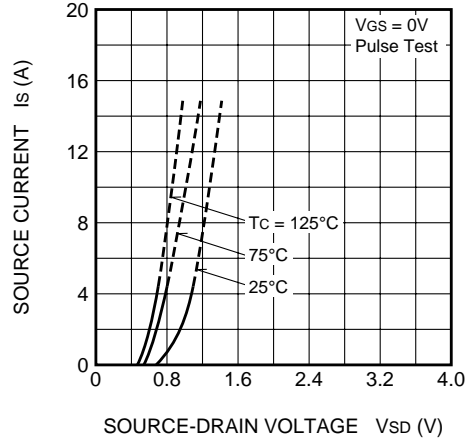
SWITCHING CHARACTERISTICS (TYPICAL)



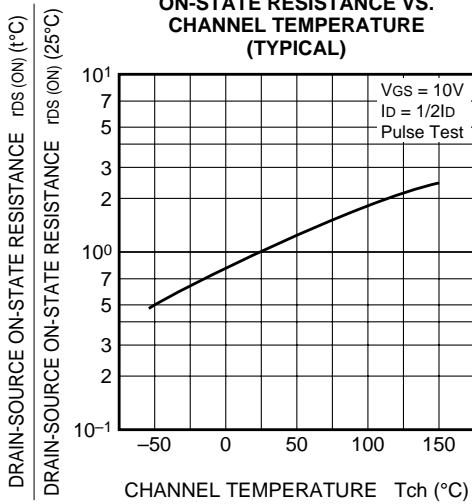
GATE-SOURCE VOLTAGE VS. GATE CHARGE (TYPICAL)



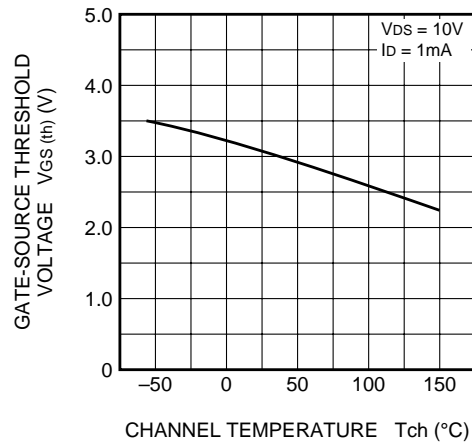
SOURCE-DRAIN DIODE FORWARD CHARACTERISTICS (TYPICAL)



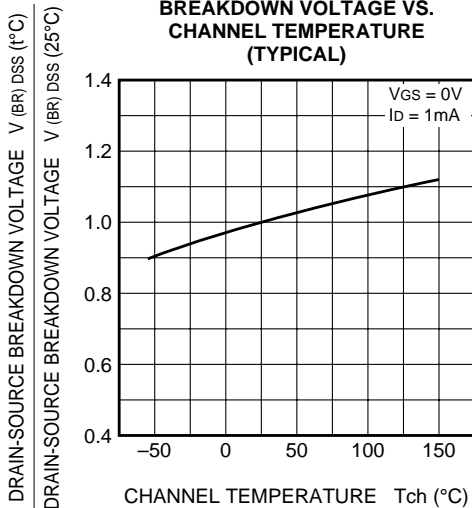
ON-STATE RESISTANCE VS. CHANNEL TEMPERATURE (TYPICAL)



THRESHOLD VOLTAGE VS. CHANNEL TEMPERATURE (TYPICAL)



BREAKDOWN VOLTAGE VS. CHANNEL TEMPERATURE (TYPICAL)



TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS

