

FS3UM-10

HIGH-SPEED SWITCHING USE

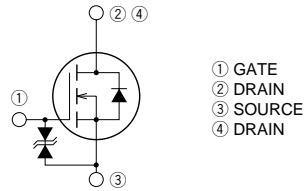
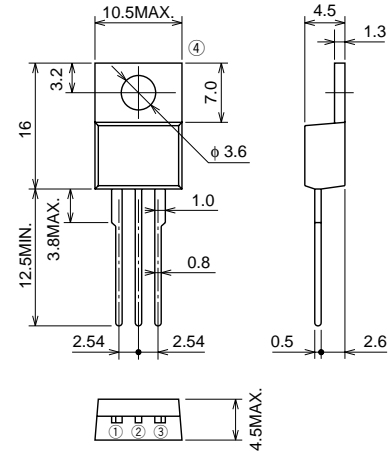
FS3UM-10



- V_{DSS} 500V
- r_{DS (ON)} (MAX) 4.4Ω
- I_D 3A

OUTLINE DRAWING

Dimensions in mm



TO-220

APPLICATION

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

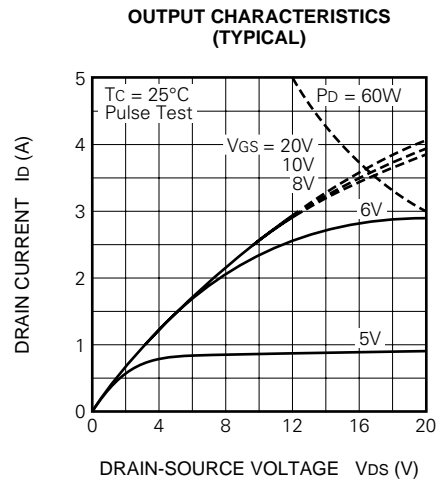
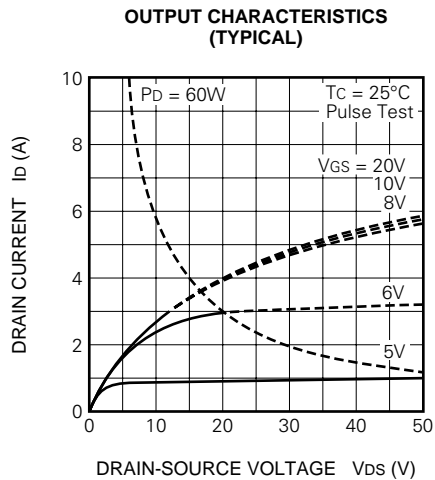
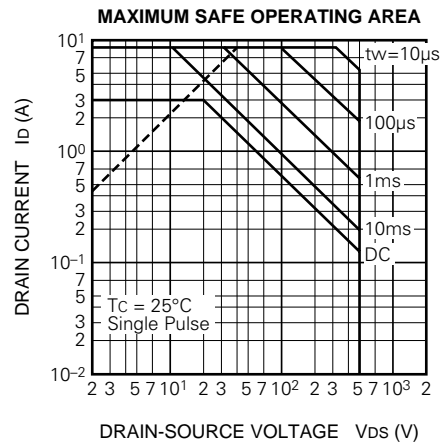
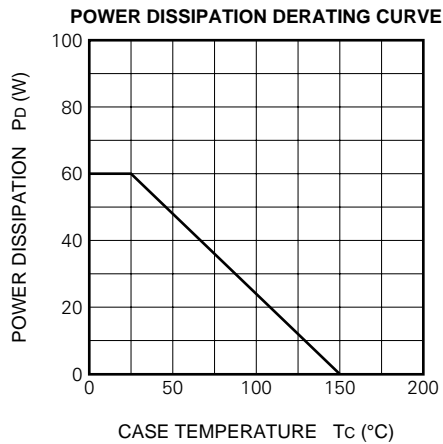
MAXIMUM RATINGS (T_c = 25°C)

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		3	A
I _{DM}	Drain current (Pulsed)		9	A
P _D	Maximum power dissipation		60	W
T _{ch}	Channel temperature		-55 ~ +150	°C
T _{stg}	Storage temperature		-55 ~ +150	°C
—	Weight	Typical value	2.0	g

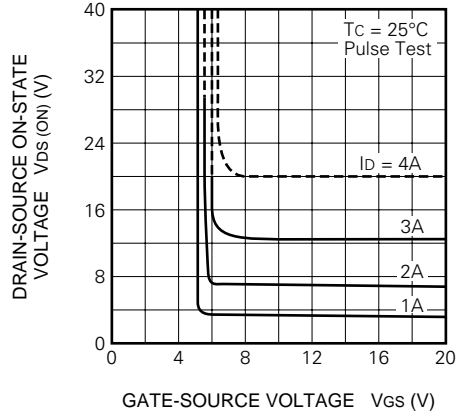
ELECTRICAL CHARACTERISTICS (Tch = 25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
V (BR) DSS	Drain-source breakdown voltage	Id = 1mA, VGS = 0V	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 = 1A, VGS = 10V	—	3.4	4.4	Ω
VDS (ON)	Drain-source on-state voltage	Id = 1A, VGS = 10V	—	3.4	4.4	V
yfs	Forward transfer admittance	Id = 1A, VDS = 10V	1.0	1.5	—	S
Ciss	Input capacitance	VDS = 25V, VGS = 0V, f = 1MHz	—	300	—	pF
Coss	Output capacitance		—	35	—	pF
Crss	Reverse transfer capacitance		—	6	—	pF
td (on)	Turn-on delay time	VDD = 200V, Id = 1A, VGS = 10V, RGEN = RGS = 50Ω	—	13	—	ns
tr	Rise time		—	10	—	ns
td (off)	Turn-off delay time		—	30	—	ns
tf	Fall time		—	30	—	ns
VSD	Source-drain voltage	Is = 1A, VGS = 0V	—	1.5	2.0	V
Rth (ch-c)	Thermal resistance	Channel to case	—	—	2.08	°C/W

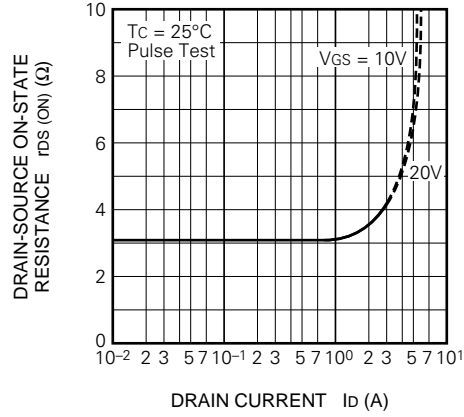
PERFORMANCE CURVES



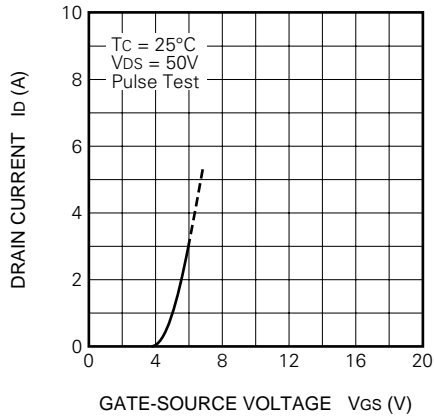
ON-STATE VOLTAGE VS. GATE-SOURCE VOLTAGE (TYPICAL)



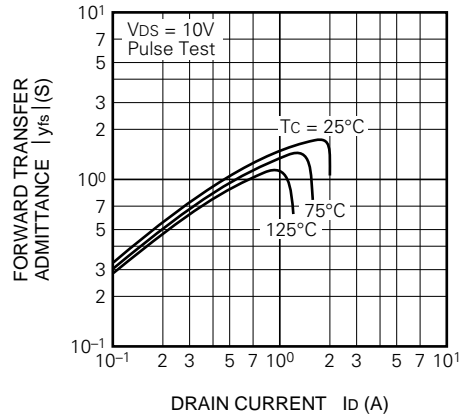
ON-STATE RESISTANCE VS. DRAIN CURRENT (TYPICAL)



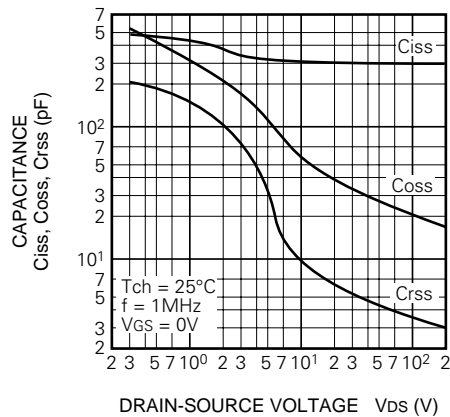
TRANSFER CHARACTERISTICS (TYPICAL)



FORWARD TRANSFER ADMITTANCE VS. DRAIN CURRENT (TYPICAL)



CAPACITANCE VS. DRAIN-SOURCE VOLTAGE (TYPICAL)



SWITCHING CHARACTERISTICS (TYPICAL)

