

FS100KMJ-03F

HIGH-SPEED SWITCHING USE

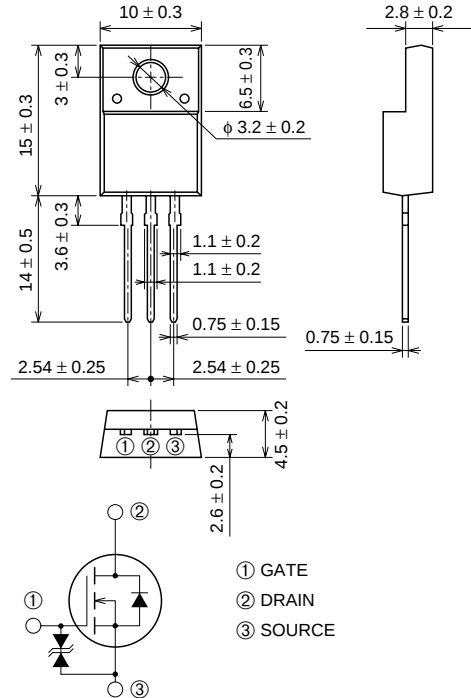
FS100KMJ-03F



- 4V DRIVE
- V_{DS} 30V
- $r_{DS(ON)}$ (MAX) 4.0m Ω
- I_D 100A
- Integrated Fast Recovery Diode (TYP.) 80ns

OUTLINE DRAWING

Dimensions in mm



TO-220FN

APPLICATION

Motor control, Lamp control, Solenoid control
DC-DC converter, etc.

MAXIMUM RATINGS (T_c = 25°C)

Symbol	Parameter	Conditions	Ratings	Unit
V_{DS}	Drain-source voltage	$V_{GS} = 0V$	30	V
V_{GSS}	Gate-source voltage	$V_{DS} = 0V$	±20	V
I_D	Drain current		100	A
I_{DM}	Drain current (Pulsed)		400	A
I_{bA}	Avalanche current (Pulsed)	$L = 10\mu H$	100	A
I_S	Source current		100	A
I_{SM}	Source current (Pulsed)		400	A
P_D	Maximum power dissipation		30	W
T_{ch}	Channel temperature		-55 ~ +150	°C
T_{stg}	Storage temperature		-55 ~ +150	°C
V_{iso}	Isolation voltage	AC for 1 minute, Terminal to case	2000	V
—	Weight	Typical value	2.0	g

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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	30	—	—	V
V (BR) GSS	Gate-source breakdown voltage	IG = ±100μA, VDS = 0V	±20	—	—	V
IDSS	Drain-source leakage current	VDS = 30V, VGS = 0V	—	—	100	μA
IGSS	Gate-source leakage current	VGS = ±20V, VDS = 0V	—	—	±10	μA
VGS (th)	Gate-source threshold voltage	Id = 1mA, VDS = 10V	1.0	1.5	2.0	V
rDS (ON)	Drain-source on-state resistance	Id = 50A, VGS = 10V	—	3.1	4.0	mΩ
rDS (ON)	Drain-source on-state resistance	Id = 50A, VGS = 4V	—	4.2	5.7	mΩ
VDS (ON)	Drain-source on-state voltage	Id = 50A, VGS = 10V	—	0.16	0.20	V
yfs	Forward transfer admittance	Id = 50A, VDS = 10V	—	120	—	S
Ciss	Input capacitance	VDS = 10V, VGS = 0V, f = 1MHz	—	7600	—	pF
Coss	Output capacitance		—	2300	—	pF
Crss	Reverse transfer capacitance		—	1000	—	pF
td (on)	Turn-on delay time	VDD = 15V, Id = 50A, VGS = 10V, RGEN = RGS = 50Ω	—	30	—	ns
tr	Rise time		—	170	—	ns
td (off)	Turn-off delay time		—	520	—	ns
tf	Fall time		—	290	—	ns
VSD	Source-drain voltage	IS = 50A, VGS = 0V	—	1.0	1.5	V
Rth (ch-c)	Thermal resistance	Channel to case	—	—	4.17	°C/W
trr	Reverse recovery time	IS = 50A, dis/dt = -50A/μs	—	80	—	ns