

FS30KMJ-06F

HIGH-SPEED SWITCHING USE

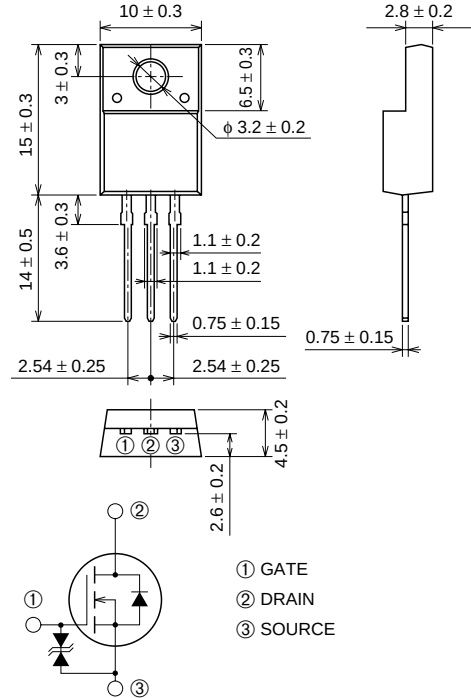
FS30KMJ-06F



- 4V DRIVE
- V_{DS} 60V
- $r_{DS(ON)}$ (MAX) 22m Ω
- I_D 30A
- Integrated Fast Recovery Diode (TYP.) 50ns

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	$V_{GS} = 0V$	60	V
V_{GSS}	Gate-source voltage	$V_{DS} = 0V$	±20	V
I_D	Drain current		30	A
I_{DM}	Drain current (Pulsed)		120	A
I_{bA}	Avalanche current (Pulsed)	$L = 10\mu H$	30	A
I_S	Source current		30	A
I_{SM}	Source current (Pulsed)		120	A
P_D	Maximum power dissipation		25	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

FS30KMJ-06F

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	60	—	—	V
V (BR) GSS	Gate-source breakdown voltage	IG = ±100μA, VDS = 0V	±20	—	—	V
IDSS	Drain-source leakage current	VDS = 60V, 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 = 15A, VGS = 10V	—	18	22	mΩ
rDS (ON)	Drain-source on-state resistance	Id = 15A, VGS = 4V	—	22	28	mΩ
VDS (ON)	Drain-source on-state voltage	Id = 15A, VGS = 10V	—	0.27	0.33	V
yfs	Forward transfer admittance	Id = 15A, VDS = 10V	—	38	—	S
Ciss	Input capacitance	VDS = 10V, VGS = 0V, f = 1MHz	—	2600	—	pF
Coss	Output capacitance		—	385	—	pF
Crss	Reverse transfer capacitance		—	200	—	pF
td (on)	Turn-on delay time	VDD = 30V, Id = 15A, VGS = 10V, RGEN = RGS = 50Ω	—	13	—	ns
tr	Rise time		—	70	—	ns
td (off)	Turn-off delay time		—	240	—	ns
tf	Fall time		—	100	—	ns
VSD	Source-drain voltage	Is = 15A, VGS = 0V	—	1.0	1.5	V
Rth (ch-c)	Thermal resistance	Channel to case	—	—	5.00	°C/W
trr	Reverse recovery time	Is = 30A, dis/dt = -100A/μs	—	50	—	ns