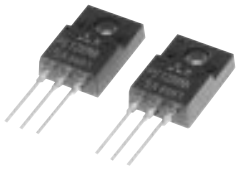
MITSUBISHI Nch POWER MOSFET

FS12KMA-5A

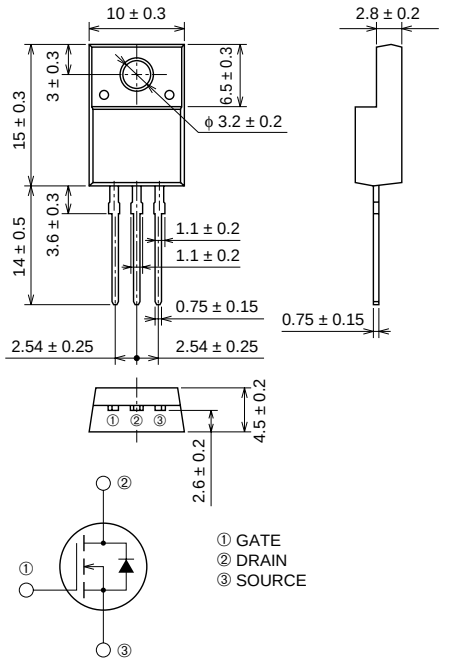
HIGH-SPEED SWITCHING USE

FS12KMA-5A



- 10V DRIVE
- V_{DSS} 250V
- $r_{DS\ (ON)\ (MAX)}$ 0.40Ω
- I_D 12A

OUTLINE DRAWING Dimensions in mm



TO-220FN

APPLICATION

Cs Switch for CRT Display monitor

MAXIMUM RATINGS (T_c = 25°C)

Symbol	Parameter	Conditions	Ratings	Unit
V_{DSS}	Drain-source voltage	V_{GS} = 0V	250	V
V_{GSS}	Gate-source voltage	V_{DS} = 0V	±20	V
I_D	Drain current		12	A
I_{DM}	Drain current (Pulsed)		36	A
I_{DA}	Avalanche drain current (Pulsed)	L = 200µH	12	A
P_D	Maximum power dissipation		35	W
T_{ch}	Channel temperature		–55 ~ +150	°C
T_{stg}	Storage temperature		–55 ~ +150	°C
V_{iso}	Isolation voltage	AC for 1minute, Terminal to case	2000	V
—	Weight	Typical value	2.0	g

MITSUBISHI ELECTRIC

ELECTRICAL CHARACTERISTICS (Tch = 25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
$V_{(BR)DSS}$	Drain-source breakdown voltage	I_D = 1mA, V_{GS} = 0V	250	—	—	V
I_{GSS}	Gate-source leakage current	V_{GS} = ±20V, V_{DS} = 0V	—	—	±10	µA
I_{DSS}	Drain-source leakage current	V_{DS} = 250V, V_{GS} = 0V	—	—	1	mA
$V_{GS(th)}$	Gate-source threshold voltage	I_D = 1mA, V_{DS} = 10V	2.0	3.0	4.0	V
$r_{DS(ON)}$	Drain-source on-state resistance	I_D = 6A, V_{GS} = 10V	—	0.27	0.40	Ω
$V_{DS(ON)}$	Drain-source on-state voltage	I_D = 6A, V_{GS} = 10V	—	1.62	2.40	V
$\|y_{fs}\|$	Forward transfer admittance	I_D = 6A, V_{DS} = 10V	—	11.0	—	S
C_{iss}	Input capacitance	V_{DS} = 25V, V_{GS} = 0V, f = 1MHz	—	1200	—	pF
C_{oss}	Output capacitance		—	120	—	pF
C_{rss}	Reverse transfer capacitance		—	30	—	pF
$t_{d(on)}$	Turn-on delay time	V_{DD} = 150V, I_D = 6A, V_{GS} = 10V, R_{GEN} = R_{GS} = 50Ω	—	20	—	ns
t_r	Rise time		—	30	—	ns
$t_{d(off)}$	Turn-off delay time		—	190	—	ns
t_f	Fall time		—	45	—	ns
V_{SD}	Source-drain voltage	I_S = 6A, V_{GS} = 0V	—	0.95	—	V
$R_{th(ch-c)}$	Thermal resistance	Channel to case	—	—	3.57	°C/W