

FS3KM-10A

HIGH-SPEED SWITCHING USE

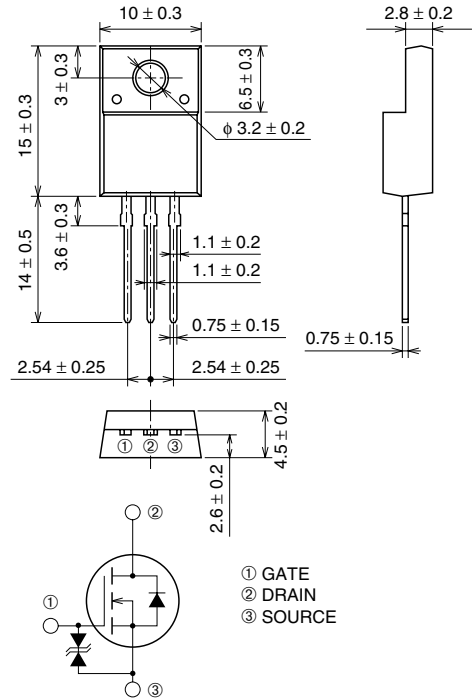
FS3KM-10A



- 10V DRIVE
- V_{DS} 500V
- $r_{DS(ON)}$ (MAX) 4.4Ω
- I_D 3A

OUTLINE DRAWING

Dimensions in mm



TO-220FN

APPLICATION

SMPS, AC-adaptor, Power supply of Printer, Copier, TV, VCR. etc.

MAXIMUM RATINGS (T_c = 25°C)

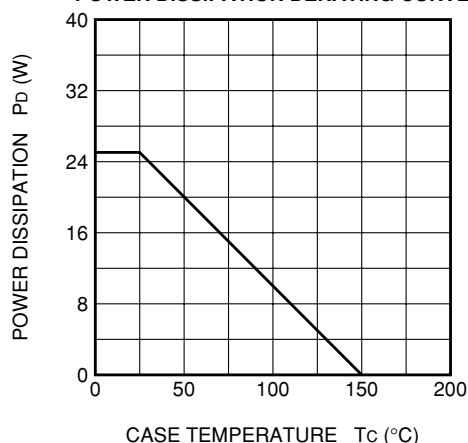
Symbol	Parameter	Conditions	Ratings	Unit
V_{DS}	Drain-source voltage	$V_{GS} = 0V$	500	V
V_{GSS}	Gate-source voltage	$V_{DS} = 0V$	±30	V
I_D	Drain current		3	A
I_{DM}	Drain current (Pulsed)		9	A
I_{DA}	Avalanche current (Pulsed)	$L = 200\mu H$	3	A
P_D	Maximum power dissipation		25	W
T_{ch}	Channel temperature		-55 ~ +150	°C
T_{stg}	Storage temperature		-55 ~ +150	°C
V_{iso}	Isolation voltage	AC for 1minute, Terminal to case	2000	V
—	Weight	Typical value	2.0	g

ELECTRICAL CHARACTERISTICS (T_{ch} = 25°C)

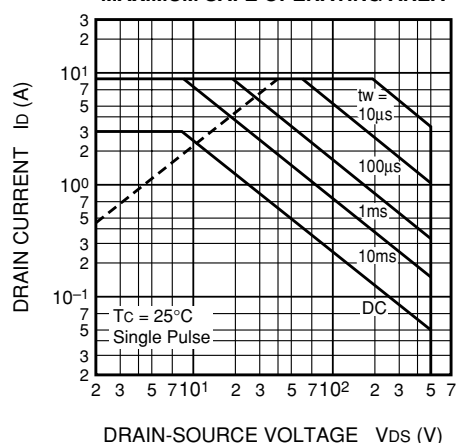
Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
V (BR) DSS	Drain-source breakdown voltage	I _D = 1mA, V _{GS} = 0V	500	—	—	V
V (BR) GSS	Gate-source breakdown voltage	I _{GS} = ±100μA, V _{DS} = 0V	±30	—	—	V
I _{GSS}	Gate-source leakage current	V _{GS} = ±25V, V _{DS} = 0V	—	—	±10	μA
I _{DSS}	Drain-source leakage current	V _{DS} = 500V, V _{GS} = 0V	—	—	1	mA
V _{GS} (th)	Gate-source threshold voltage	I _D = 1mA, V _{DS} = 10V	2.5	3.0	3.5	V
r _{DS} (ON)	Drain-source on-state resistance	I _D = 1A, V _{GS} = 10V	—	3.5	4.4	Ω
V _{DS} (ON)	Drain-source on-state voltage	I _D = 1A, V _{GS} = 10V	—	3.5	4.4	V
y _{fs}	Forward transfer admittance	I _D = 1A, V _{DS} = 10V	1.2	2.0	—	S
C _{iss}	Input capacitance	V _{DS} = 25V, V _{GS} = 0V, f = 1MHz	—	280	—	pF
C _{oss}	Output capacitance		—	35	—	pF
C _{rss}	Reverse transfer capacitance		—	7	—	pF
t _d (on)	Turn-on delay time	V _{DD} = 200V, I _D = 1A, V _{GS} = 10V, R _{GEN} = R _{GS} = 50Ω	—	10	—	ns
t _r	Rise time		—	15	—	ns
t _d (off)	Turn-off delay time		—	45	—	ns
t _f	Fall time		—	20	—	ns
V _{SD}	Source-drain voltage	I _S = 1A, V _{GS} = 0V	—	1.5	2.0	V
R _{th} (ch-c)	Thermal resistance	Channel to case	—	—	5.00	°C/W

PERFORMANCE CURVES

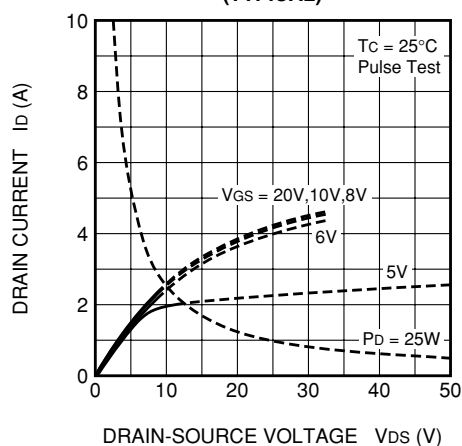
POWER DISSIPATION DERATING CURVE



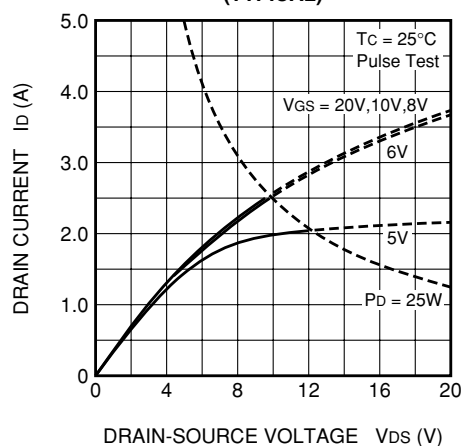
MAXIMUM SAFE OPERATING AREA



OUTPUT CHARACTERISTICS (TYPICAL)



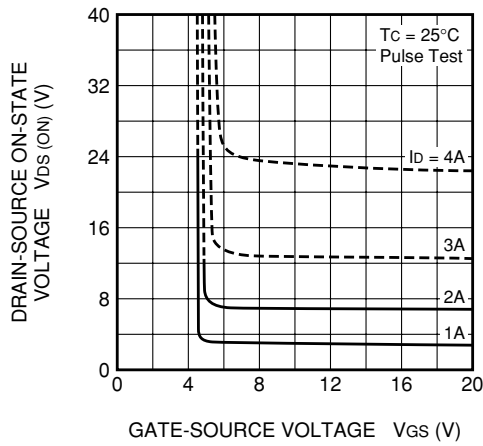
OUTPUT CHARACTERISTICS (TYPICAL)



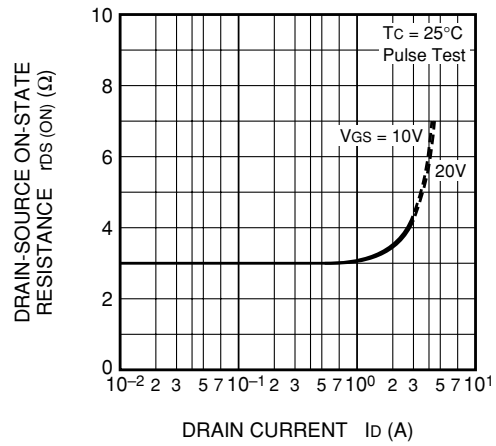
FS3KM-10A

HIGH-SPEED SWITCHING USE

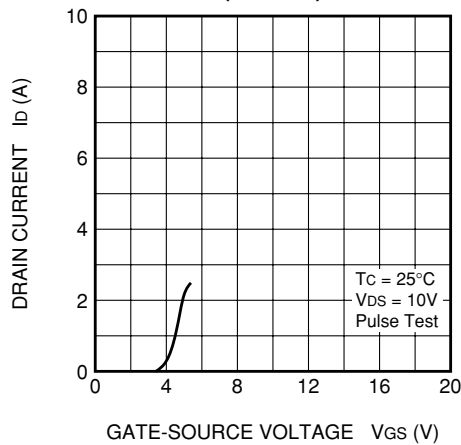
ON-STATE VOLTAGE VS.
GATE-SOURCE VOLTAGE
(TYPICAL)



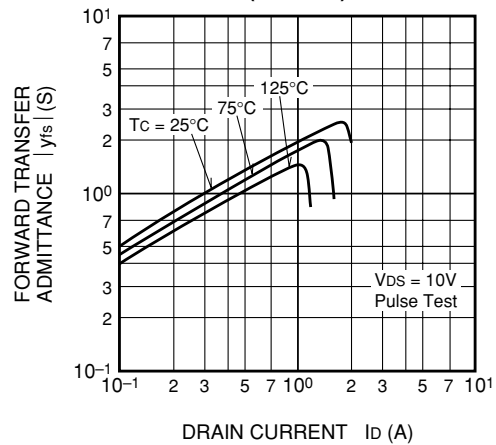
ON-STATE RESISTANCE VS.
DRAIN CURRENT
(TYPICAL)



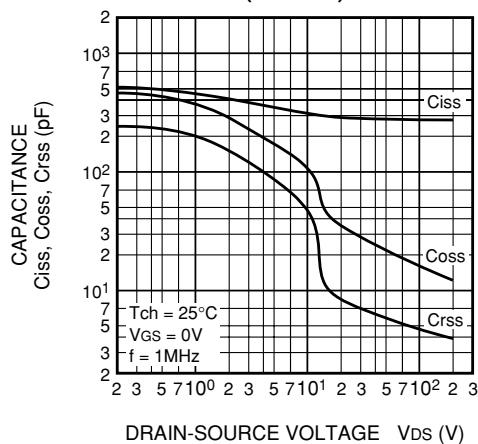
TRANSFER CHARACTERISTICS
(TYPICAL)



FORWARD TRANSFER ADMITTANCE
VS. DRAIN CURRENT
(TYPICAL)



CAPACITANCE VS.
DRAIN-SOURCE VOLTAGE
(TYPICAL)



SWITCHING CHARACTERISTICS
(TYPICAL)

