

MITSUBISHI Nch POWER MOSFET

FK10KM-10

HIGH-SPEED SWITCHING USE

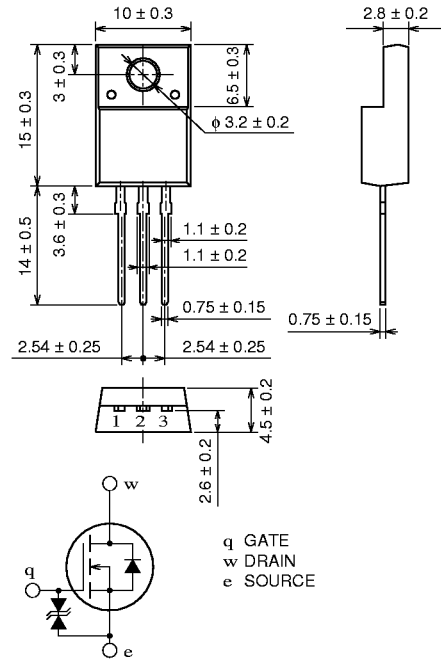
FK10KM-10



- ∧ V_{DSS} 500V
- ∧ r_{DS (ON)} (MAX) 1.13Ω
- ∧ I_D 10A
- ∧ V_{iso} 2000V
- ∧ Integrated Fast Recovery Diode (MAX.) 150ns

OUTLINE DRAWING

Dimensions in mm



TO-220FN

APPLICATION

Servo motor drive, Robot, UPS, Inverter Fluorecent lamp, 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		10	A
I _{DM}	Drain current (Pulsed)		30	A
I _S	Source current		10	A
I _{SM}	Source current (Pulsed)		30	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 _{rms}
—	Weight	Typical value	2.0	g

Feb.1999

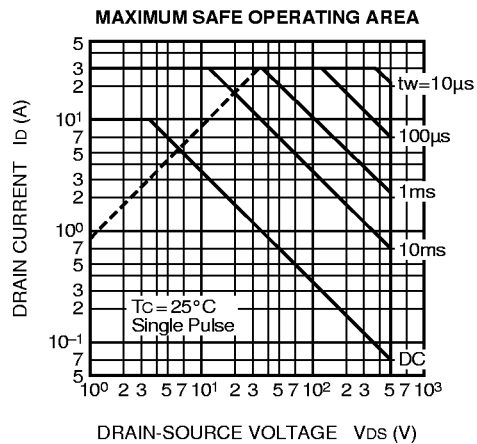
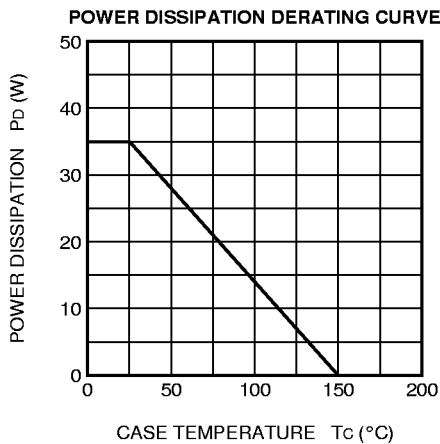
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ELECTRICAL CHARACTERISTICS (T_{ch} = 25°C)

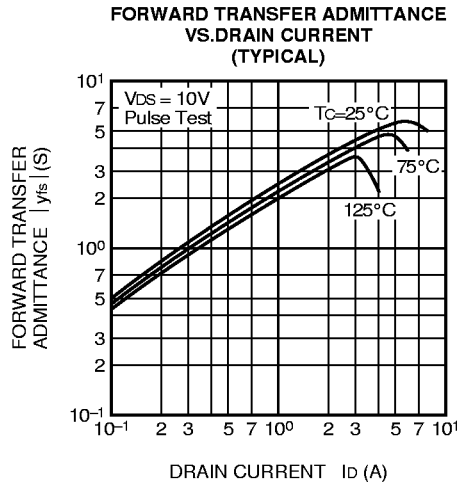
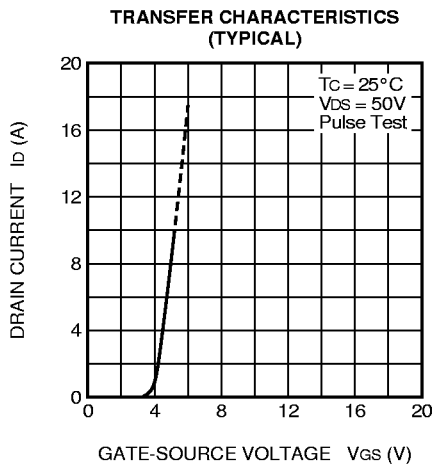
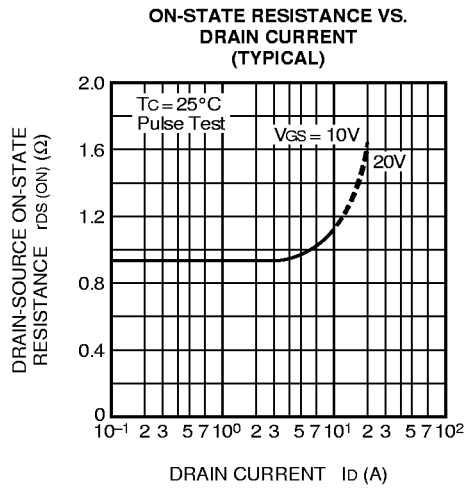
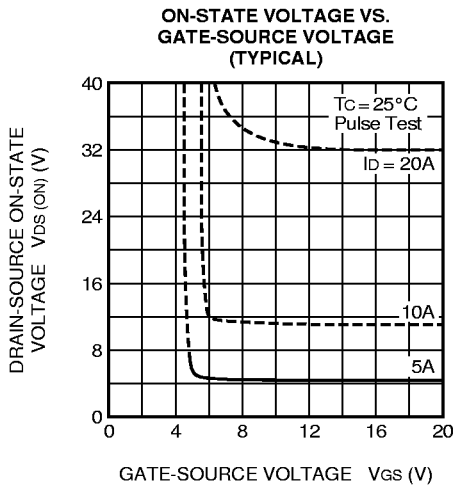
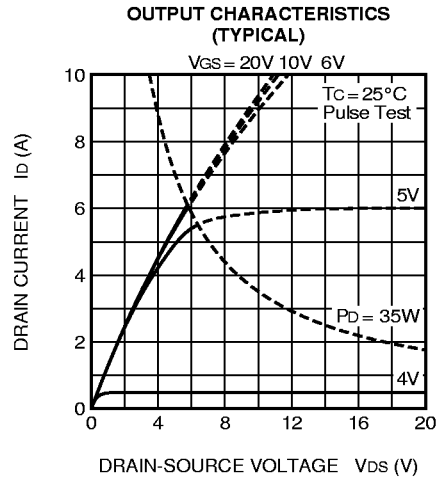
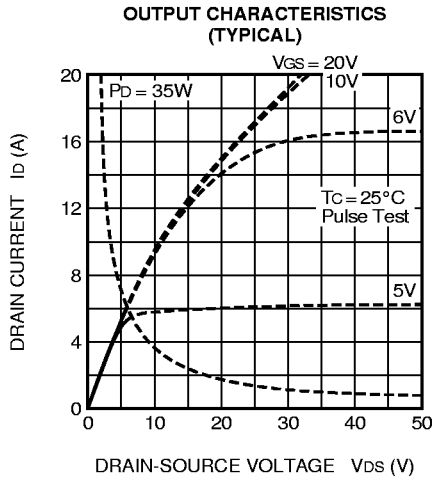
Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
V (BR) DSS	Drain-source breakdown voltage	I _D = 1 mA, V _{GS} = 0V	500	—	—	V
V (BR) GSS	Gate-source breakdown voltage	I _G = ±100μA, V _{DS} = 0V	±30	—	—	V
I _{GSS}	Gate-source leakage current	V _{GS} = ±25V, V _{DS} = 0V	—	—	±10	μA
I _{DSS}	Drain-source leakage current	V _{DS} = 500V, V _{GS} = 0V	—	—	1	mA
V _{GS} (th)	Gate-source threshold voltage	I _D = 1 mA, V _{DS} = 10V	2	3	4	V
r _{DS} (ON)	Drain-source on-state resistance	I _D = 5A, V _{GS} = 10V	—	0.88	1.13	Ω
V _{DS} (ON)	Drain-source on-state voltage	I _D = 5A, V _{GS} = 10V	—	4.40	5.65	V
y _{fs}	Forward transfer admittance	I _D = 5A, V _{DS} = 10V	3.3	5.5	—	S
C _{iss}	Input capacitance	V _{DS} = 25V, V _{GS} = 0V, f = 1MHz	—	1100	—	pF
C _{oss}	Output capacitance		—	130	—	pF
C _{rss}	Reverse transfer capacitance		—	20	—	pF
t _d (on)	Turn-on delay time	V _{DD} = 200V, I _D = 5A, V _{GS} = 10V, R _{GEN} = R _{GS} = 50Ω	—	20	—	ns
t _r	Rise time		—	30	—	ns
t _d (off)	Turn-off delay time		—	95	—	ns
t _f	Fall time		—	35	—	ns
V _{SD}	Source-drain voltage		I _S = 5A, V _{GS} = 0V	—	1.5	2.0
R _{th} (ch-c)	Thermal resistance	Channel to case	—	—	3.57	°C/W
t _{rr}	Reverse recovery time	I _S = 10A, di _s /dt = -100A/μs	—	—	150	ns

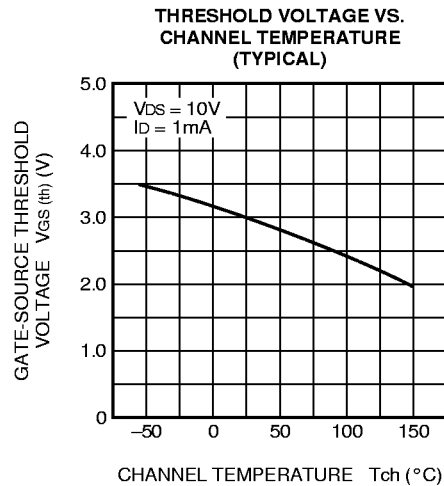
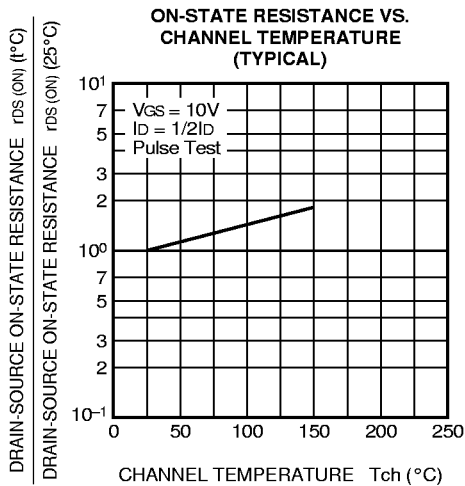
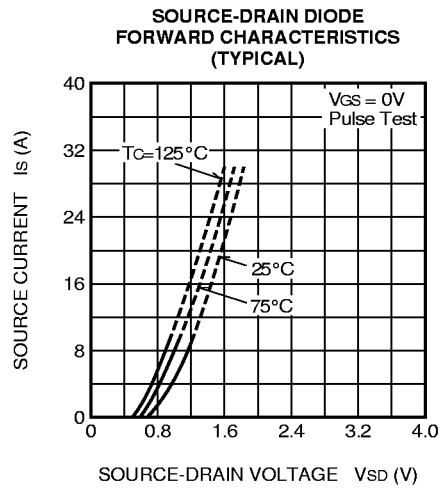
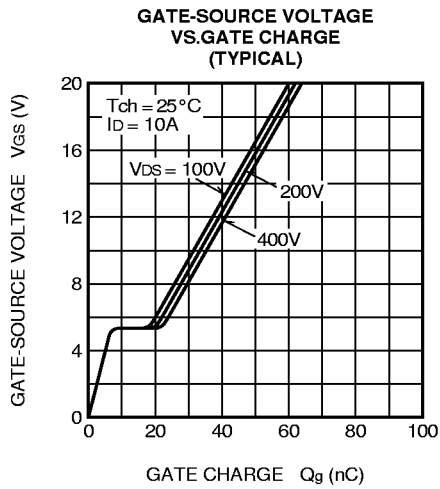
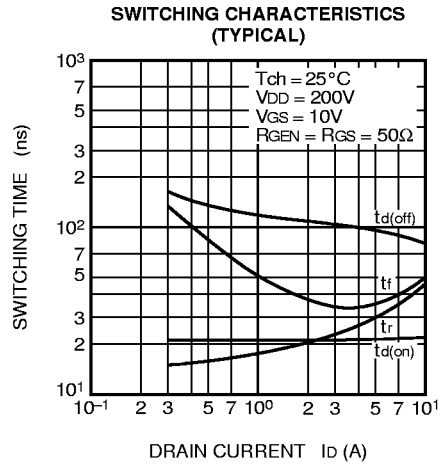
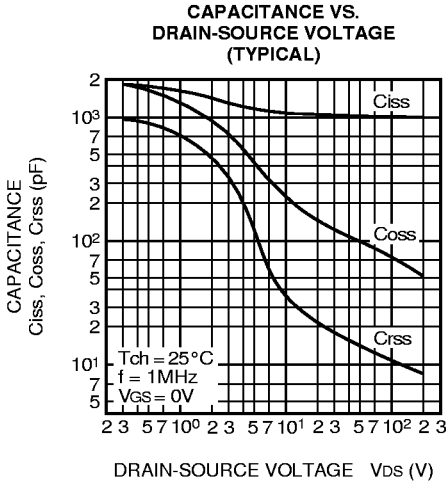
PERFORMANCE CURVES



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