

PRELIMINARY
 Notice: This is not a final specification.
 Some parametric limits are subject to change.

MITSUBISHI POWER MOSFET

FL14KM-10A

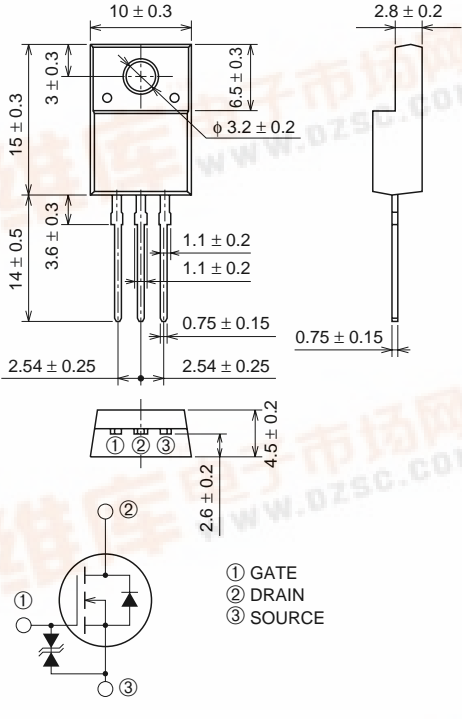
HIGH-SPEED SWITCHING USE
 Nch POWER MOSFET

FL14KM-10A



- 10V DRIVE
- V_{DSS} 500V
- r_{DS (ON)} (MAX) 0.64Ω
- I_D 14A
- V_{iso} 2000V

OUTLINE DRAWING Dimensions in mm



① GATE
 ② DRAIN
 ③ SOURCE

TO-220FN

APPLICATION

Inverter type fluorescent light sets, SMPS

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		14	A
I _{DM}	Drain current (Pulsed)		42	A
I _{DA}	Avalanche current (Pulsed)	L = 200μH	14	A
P _D	Maximum power dissipation		40	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



PRELIMINARY
 Notice: This is not a final specification.
 Some parametric limits are subject to change.

MITSUBISHI POWER MOSFET

FL14KM-10A

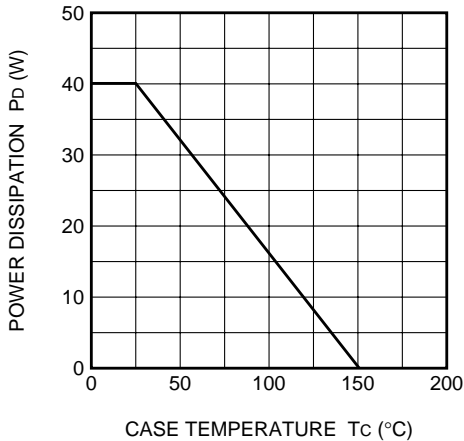
HIGH-SPEED SWITCHING USE
Nch POWER MOSFET

ELECTRICAL CHARACTERISTICS (Tch = 25°C)

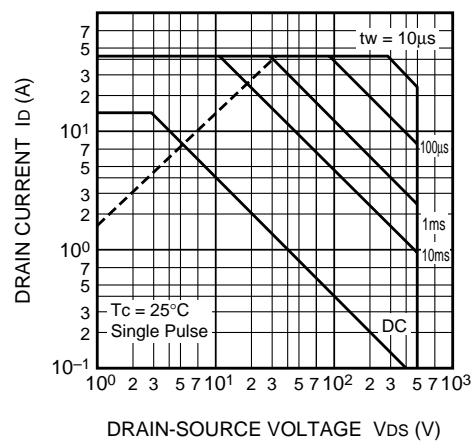
Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
V (BR) DSS	Drain-source breakdown voltage	Id = 1mA, VGS = 0V	500	—	—	V
V (BR) GSS	Gate-source breakdown voltage	IGS = ±100μA, VDS = 0V	±30	—	—	V
IGSS	Gate-source leakage current	VGS = ±25V, VDS = 0V	—	—	±10	μA
IDSS	Drain-source leakage current	VDS = 500V, VGS = 0V	—	—	1.0	mA
VGS (th)	Gate-source threshold voltage	Id = 1mA, VDS = 10V	2.0	3.0	4.0	V
rDS (ON)	Drain-source on-state resistance	Id = 7A, VGS = 10V	—	0.50	0.64	Ω
VDS (ON)	Drain-source on-state voltage	Id = 7A, VGS = 10V	—	3.5	4.5	V
yfs	Forward transfer admittance	Id = 7A, VDS = 10V	—	10.0	—	S
Ciss	Input capacitance	VDS = 25V, VGS = 0V, f = 1MHz	—	1500	—	pF
Coss	Output capacitance		—	180	—	pF
Crss	Reverse transfer capacitance		—	60	—	pF
td (on)	Turn-on delay time	VDD = 200V, Id = 7A, VGS = 10V, RGEN = RGS = 50Ω	—	30	—	ns
tr	Rise time		—	60	—	ns
td (off)	Turn-off delay time		—	250	—	ns
tf	Fall time		—	115	—	ns
VSD	Source-drain voltage	IS = 7A, VGS = 0V	—	1.5	2.0	V
Rth (ch-c)	Thermal resistance	Channel to case	—	—	3.13	°C/W

PERFORMANCE CURVES

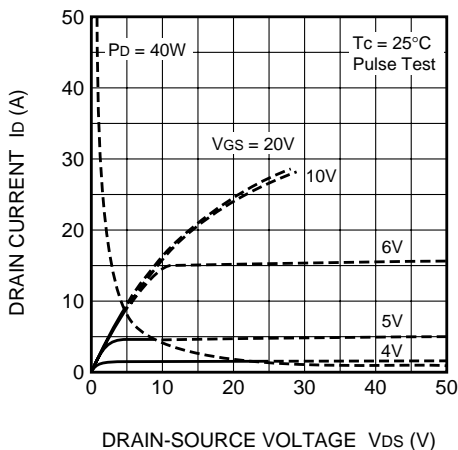
POWER DISSIPATION DERATING CURVE



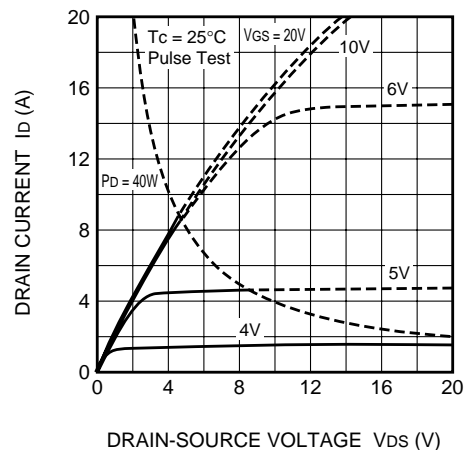
MAXIMUM SAFE OPERATING AREA



OUTPUT CHARACTERISTICS (TYPICAL)



OUTPUT CHARACTERISTICS (TYPICAL)

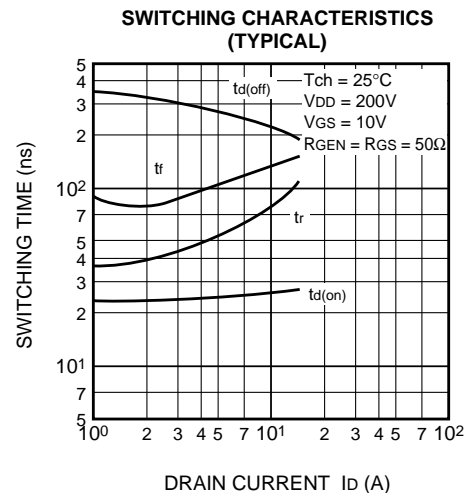
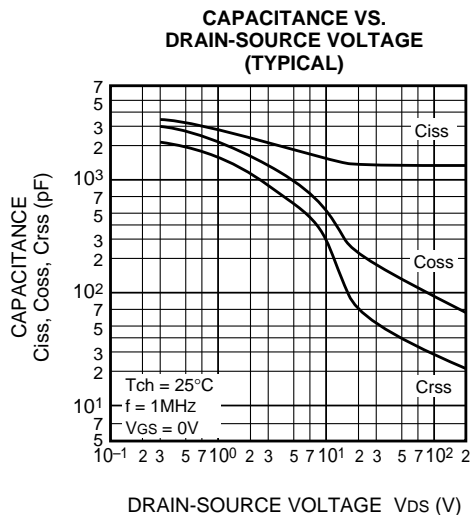
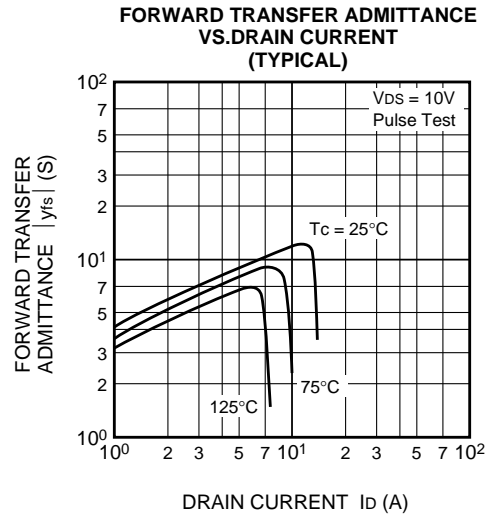
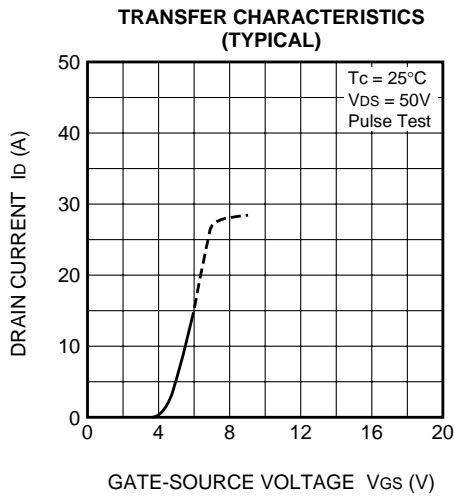
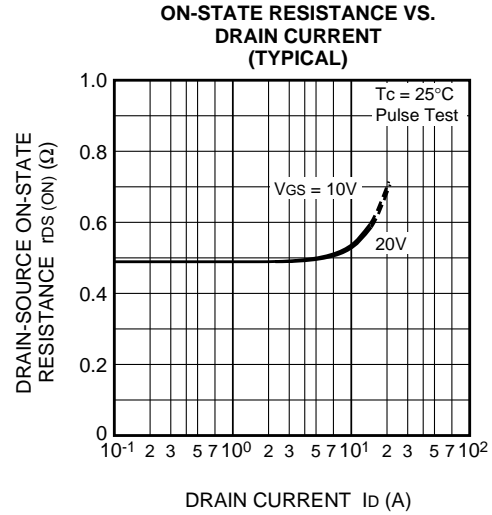
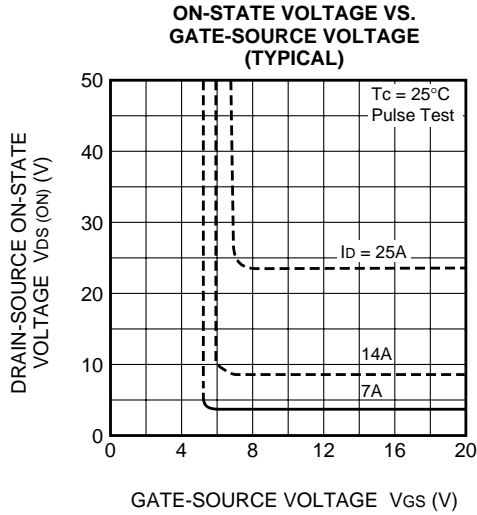


PRELIMINARY
 Notice: This is not a final specification.
 Some parametric limits are subject to change.

MITSUBISHI POWER MOSFET

FL14KM-10A

HIGH-SPEED SWITCHING USE
Nch POWER MOSFET

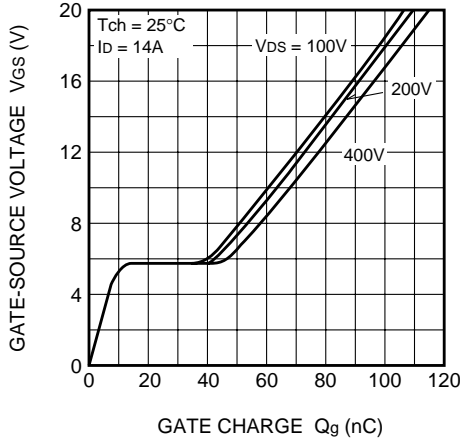


FL14KM-10A

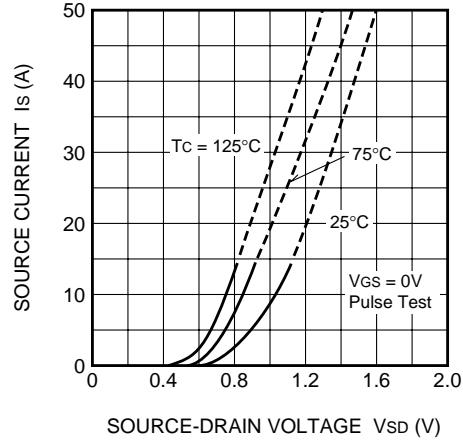
HIGH-SPEED SWITCHING USE
Nch POWER MOSFET

PRELIMINARY
Notice: This is not a final specification.
Some parametric limits are subject to change.

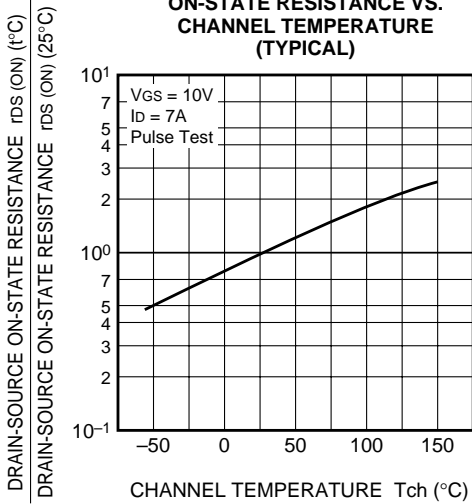
GATE-SOURCE VOLTAGE VS. GATE CHARGE (TYPICAL)



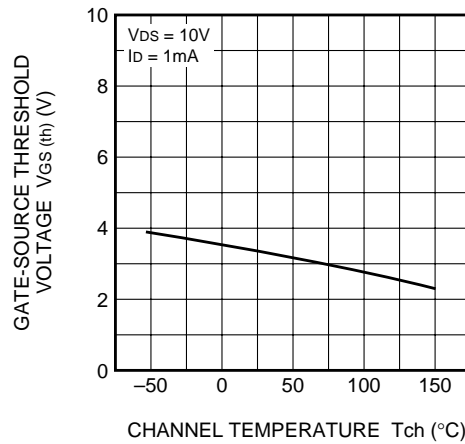
SOURCE-DRAIN DIODE FORWARD CHARACTERISTICS (TYPICAL)



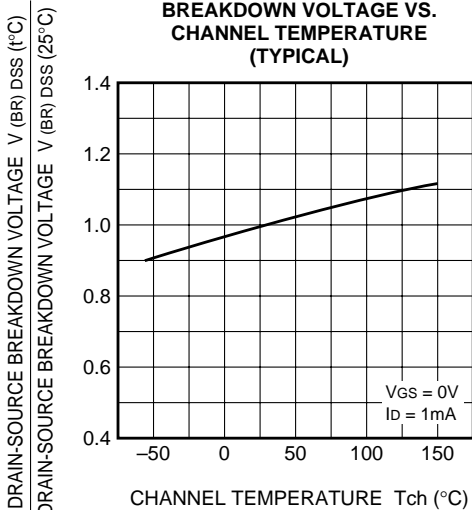
ON-STATE RESISTANCE VS. CHANNEL TEMPERATURE (TYPICAL)



THRESHOLD VOLTAGE VS. CHANNEL TEMPERATURE (TYPICAL)



BREAKDOWN VOLTAGE VS. CHANNEL TEMPERATURE (TYPICAL)



TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS

