

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

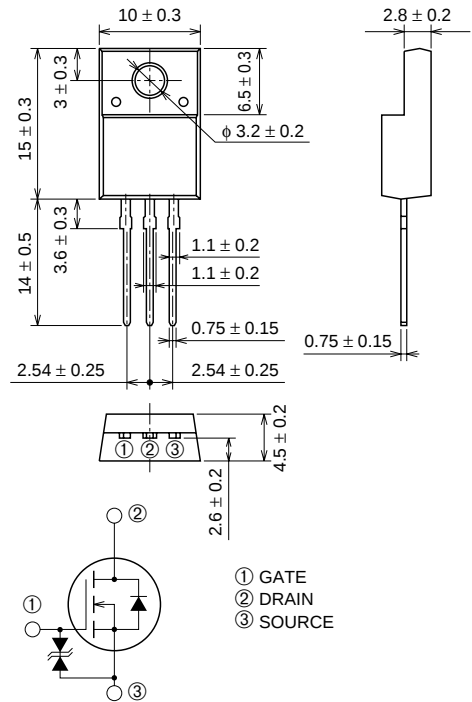
FL14KM-10A



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

OUTLINE DRAWING

Dimensions in mm



TO-220FN

APPLICATION

Inverter type fluorescent light sets, SMPS

MAXIMUM RATINGS ($T_c = 25^\circ\text{C}$)

Symbol	Parameter	Conditions	Ratings	Unit
V_{DS}	Drain-source voltage	$V_{GS} = 0V$	500	V
V_{GS}	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)	$L = 200\mu H$	14	A
P_D	Maximum power dissipation		40	W
T_{ch}	Channel temperature		$-55 \sim +150$	$^\circ\text{C}$
T_{stg}	Storage temperature		$-55 \sim +150$	$^\circ\text{C}$
V_{iso}	Isolation voltage	AC for 1minute, Terminal to case	2000	V
—	Weight	Typical value	2.0	g

Aug. 1999

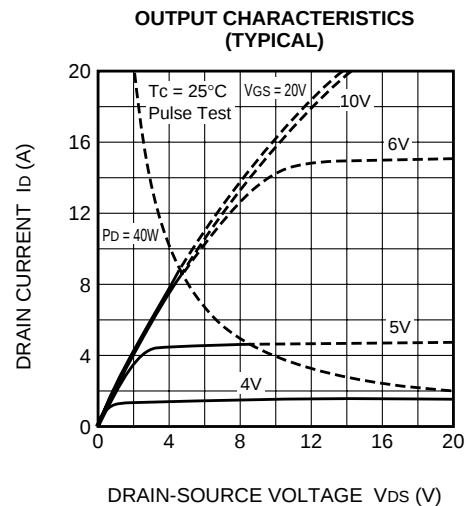
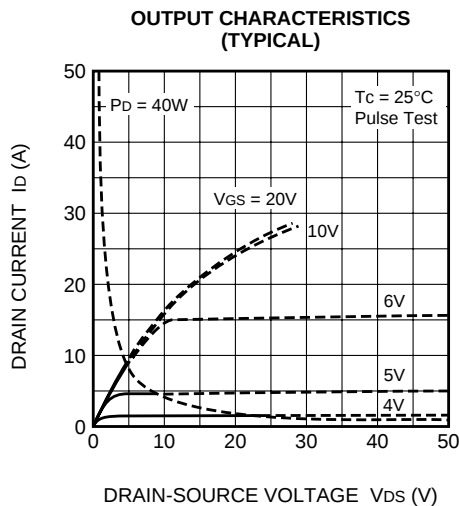
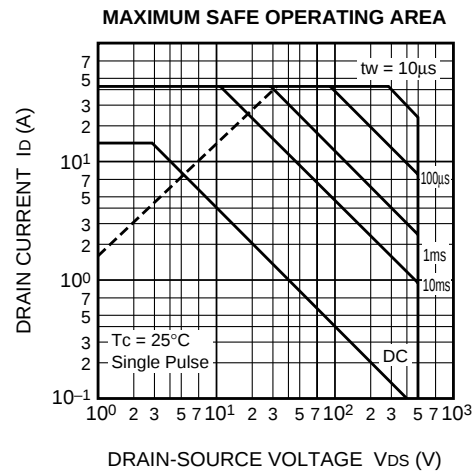
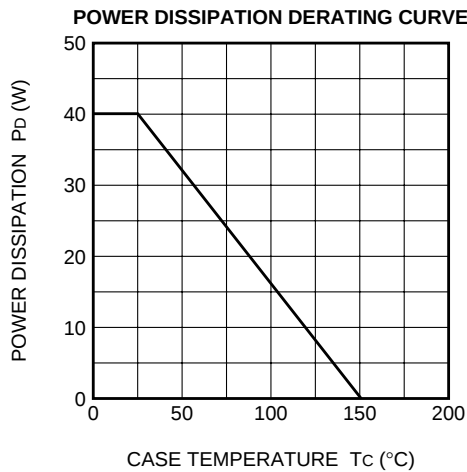
FL14KM-10A

HIGH-SPEED SWITCHING USE
 Nch POWER MOSFET

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

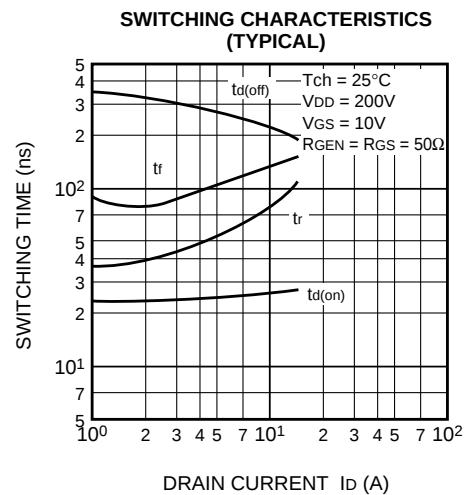
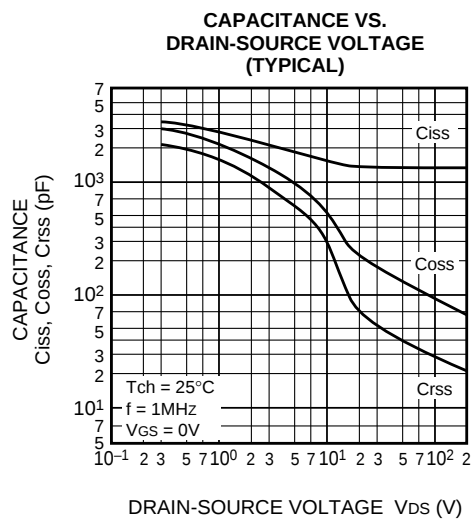
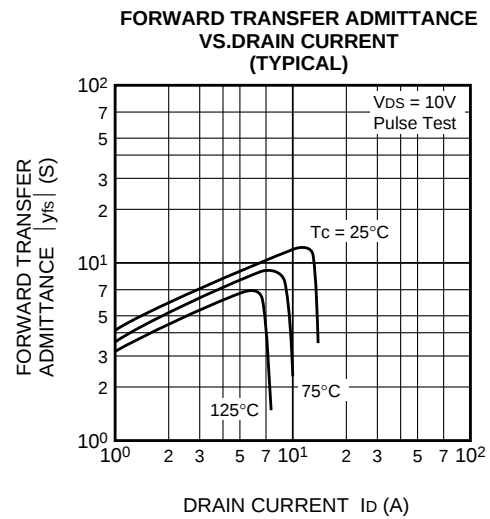
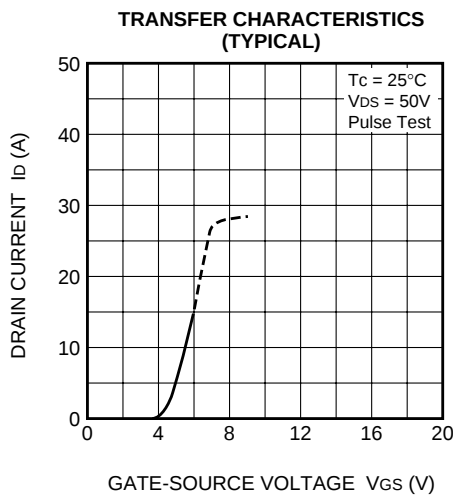
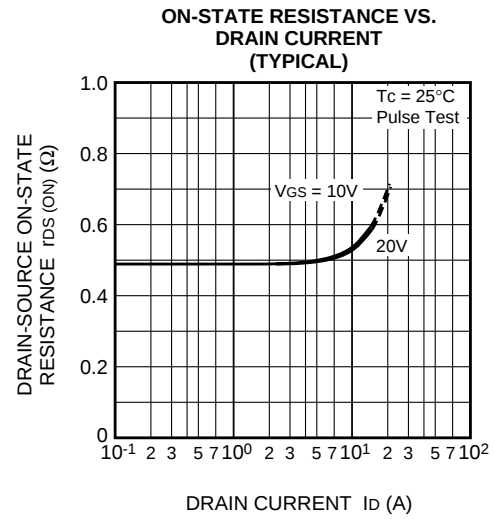
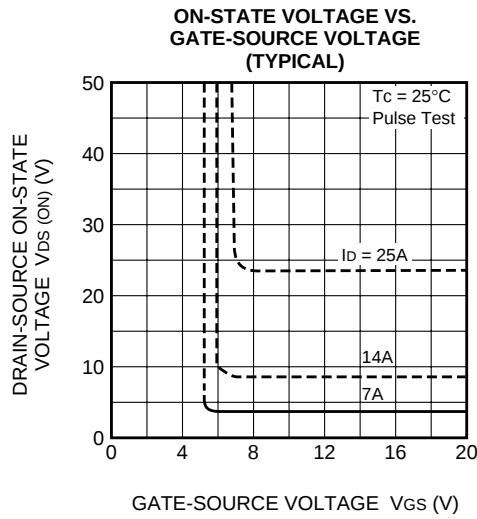
Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
V (BR) DSS	Drain-source breakdown voltage	I _D = 1mA, V _{GS} = 0V	500	—	—	V
V (BR) GSS	Gate-source breakdown voltage	I _{GS} = ±100μA, V _{DS} = 0V	±30	—	—	V
I _{GSS}	Gate-source leakage current	V _{GS} = ±25V, V _{DS} = 0V	—	—	±10	μA
I _{DSS}	Drain-source leakage current	V _{DS} = 500V, V _{GS} = 0V	—	—	1.0	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 = 7A, V _{GS} = 10V	—	0.50	0.64	Ω
V _{DS} (ON)	Drain-source on-state voltage	I _D = 7A, V _{GS} = 10V	—	3.5	4.5	V
y _{fs}	Forward transfer admittance	I _D = 7A, V _{DS} = 10V	—	10.0	—	S
C _{iss}	Input capacitance	V _{DS} = 25V, V _{GS} = 0V, f = 1MHz	—	1500	—	pF
C _{oss}	Output capacitance		—	180	—	pF
C _{rss}	Reverse transfer capacitance		—	60	—	pF
t _d (on)	Turn-on delay time	V _{DD} = 200V, I _D = 7A, V _{GS} = 10V, R _{GEN} = R _{GS} = 50Ω	—	30	—	ns
t _r	Rise time		—	60	—	ns
t _d (off)	Turn-off delay time		—	250	—	ns
t _f	Fall time		—	115	—	ns
V _{SD}	Source-drain voltage	I _S = 7A, V _{GS} = 0V	—	1.5	2.0	V
R _{th} (ch-c)	Thermal resistance	Channel to case	—	—	3.13	°C/W

PERFORMANCE CURVES



FL14KM-10A

HIGH-SPEED SWITCHING USE
 Nch POWER MOSFET

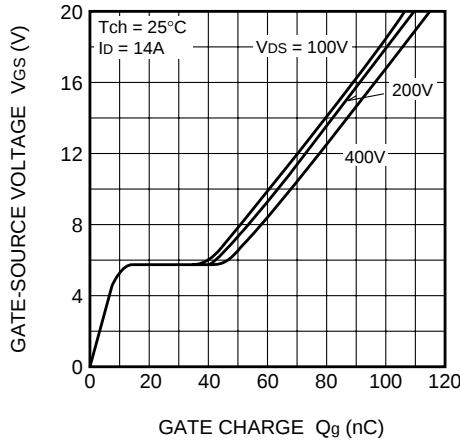


PRELIMINARY
 Notice: This is not a final specification.
 Some parametric limits are subject to change.

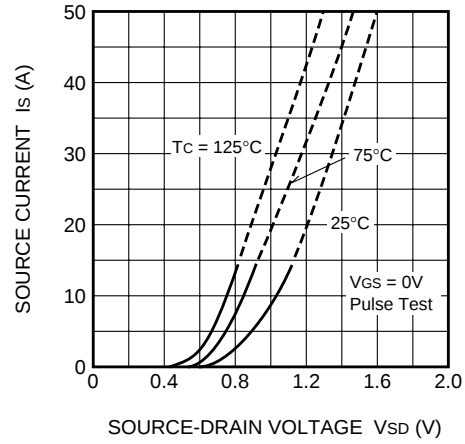
FL14KM-10A

HIGH-SPEED SWITCHING USE
 Nch POWER MOSFET

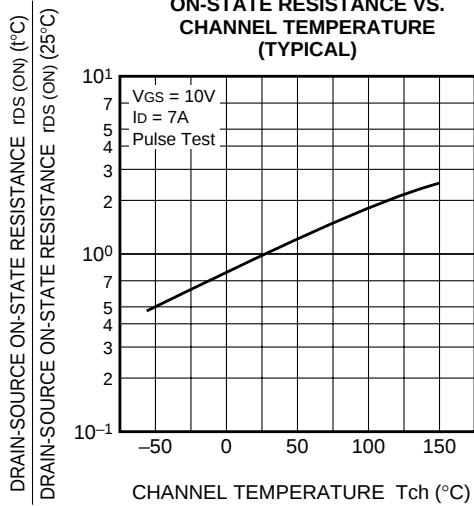
**GATE-SOURCE VOLTAGE
 VS. GATE CHARGE
 (TYPICAL)**



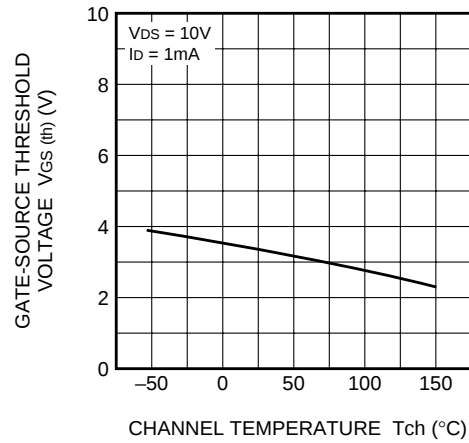
**SOURCE-DRAIN DIODE
 FORWARD CHARACTERISTICS
 (TYPICAL)**



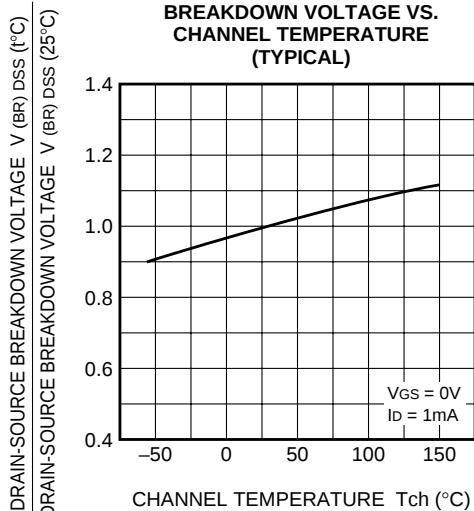
**ON-STATE RESISTANCE VS.
 CHANNEL TEMPERATURE
 (TYPICAL)**



**THRESHOLD VOLTAGE VS.
 CHANNEL TEMPERATURE
 (TYPICAL)**



**BREAKDOWN VOLTAGE VS.
 CHANNEL TEMPERATURE
 (TYPICAL)**



**TRANSIENT THERMAL IMPEDANCE
 CHARACTERISTICS**

