

FL14KM-8A

HIGH-SPEED SWITCHING USE

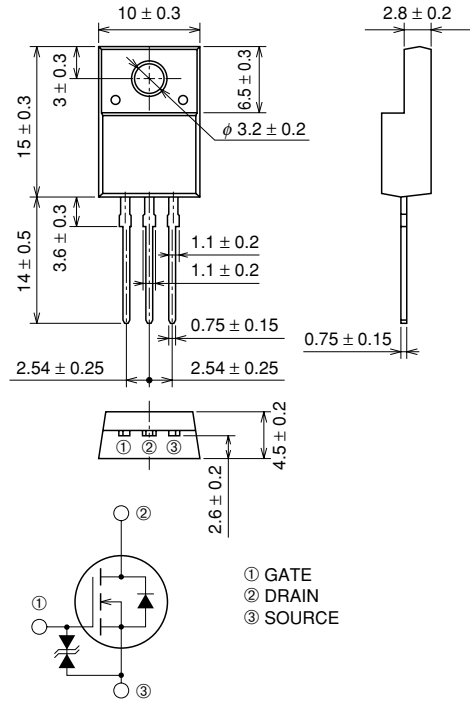
FL14KM-8A



- 10V DRIVE
- V_{DS} 400V
- $r_{DS(ON)}$ (MAX) 0.55Ω
- I_D 14A

OUTLINE DRAWING

Dimensions in mm



TO-220FN

APPLICATION

SMPS, Inverter fluorescent light sets, etc.

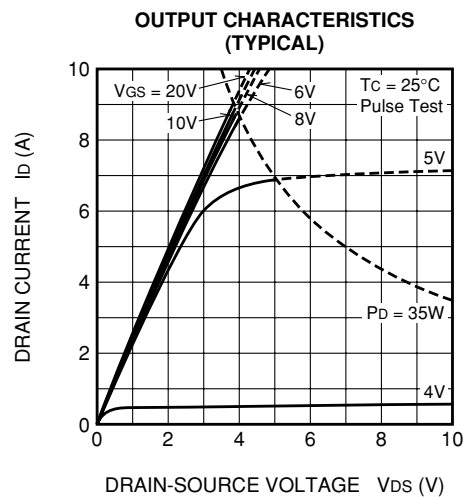
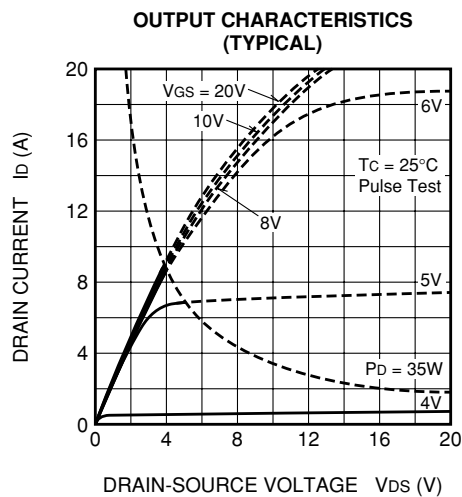
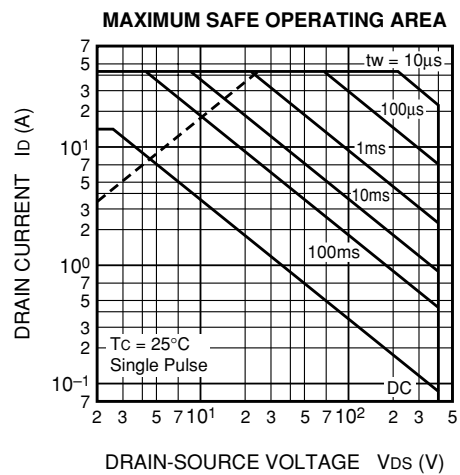
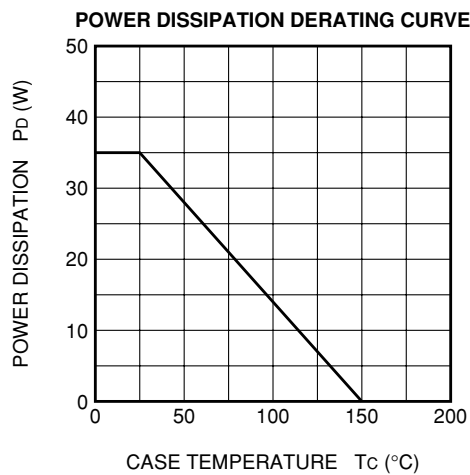
MAXIMUM RATINGS (Tc = 25°C)

Symbol	Parameter	Conditions	Ratings	Unit
V_{DS}	Drain-source voltage	$V_{GS} = 0V$	400	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)	$L = 200\mu H$	14	A
P_D	Maximum power dissipation		35	W
T_{ch}	Channel temperature		$-55 \sim +150$	°C
T_{stg}	Storage temperature		$-55 \sim +150$	°C
V_{iso}	Isolation voltage	AC for 1minute, Terminal to case	2000	V
—	Weight	Typical value	2.0	g

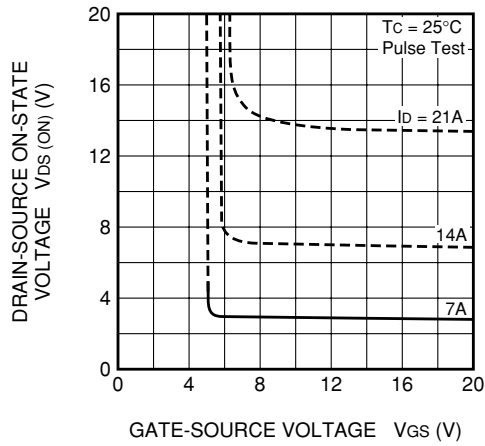
ELECTRICAL CHARACTERISTICS ($T_{ch} = 25^{\circ}\text{C}$)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
$V_{(BR)DSS}$	Drain-source breakdown voltage	$I_D = 1\text{mA}$, $V_{GS} = 0\text{V}$	400	—	—	V
$V_{(BR)GSS}$	Gate-source breakdown voltage	$I_G = \pm 100\mu\text{A}$, $V_{DS} = 0\text{V}$	± 30	—	—	V
I_{GSS}	Gate-source leakage current	$V_{GS} = \pm 25\text{V}$, $V_{DS} = 0\text{V}$	—	—	± 10	μA
I_{DSS}	Drain-source leakage current	$V_{DS} = 400\text{V}$, $V_{GS} = 0\text{V}$	—	—	1	mA
$V_{GS(th)}$	Gate-source threshold voltage	$I_D = 1\text{mA}$, $V_{DS} = 10\text{V}$	2.0	3.0	4.0	V
$r_{DS(ON)}$	Drain-source on-state resistance	$I_D = 7\text{A}$, $V_{GS} = 10\text{V}$	—	0.42	0.55	Ω
$V_{DS(ON)}$	Drain-source on-state voltage	$I_D = 7\text{A}$, $V_{GS} = 10\text{V}$	—	2.94	3.85	V
$ y_{fs} $	Forward transfer admittance	$I_D = 7\text{A}$, $V_{DS} = 10\text{V}$	—	8.5	—	S
C_{iss}	Input capacitance	$V_{DS} = 25\text{V}$, $V_{GS} = 0\text{V}$, $f = 1\text{MHz}$	—	1100	—	pF
C_{oss}	Output capacitance		—	150	—	pF
C_{rss}	Reverse transfer capacitance		—	25	—	pF
$t_d(on)$	Turn-on delay time	$V_{DD} = 200\text{V}$, $I_D = 7\text{A}$, $V_{GS} = 10\text{V}$, $R_{GEN} = R_{GS} = 50\Omega$	—	20	—	ns
t_r	Rise time		—	40	—	ns
$t_d(off)$	Turn-off delay time		—	130	—	ns
t_f	Fall time		—	70	—	ns
V_{SD}	Source-drain voltage	$I_S = 7\text{A}$, $V_{GS} = 0\text{V}$	—	1.5	2.0	V
$R_{th(ch-c)}$	Thermal resistance	Channel to case	—	—	3.57	$^{\circ}\text{C/W}$

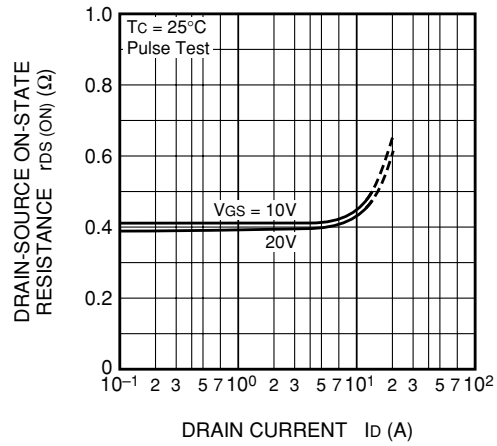
PERFORMANCE CURVES



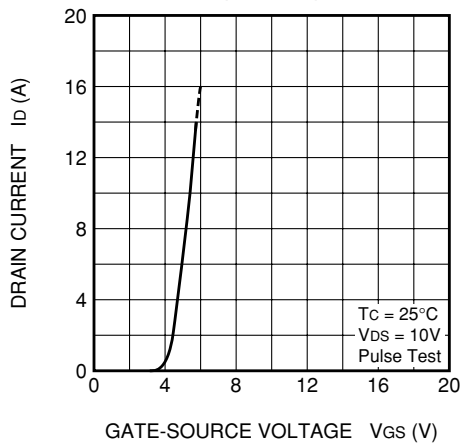
ON-STATE VOLTAGE VS.
GATE-SOURCE VOLTAGE
(TYPICAL)



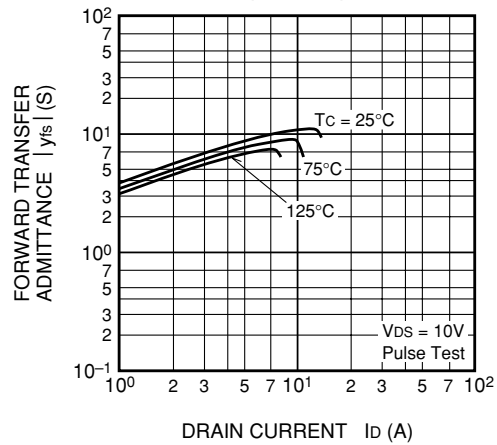
ON-STATE RESISTANCE VS.
DRAIN CURRENT
(TYPICAL)



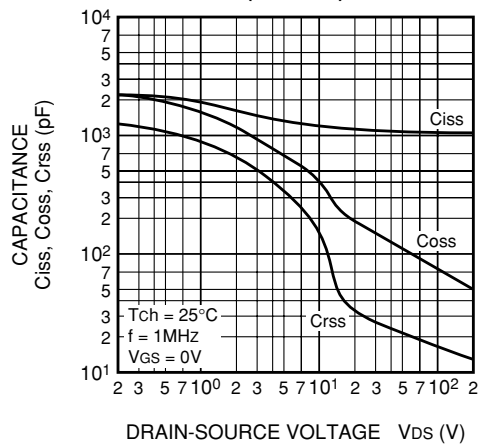
TRANSFER CHARACTERISTICS
(TYPICAL)



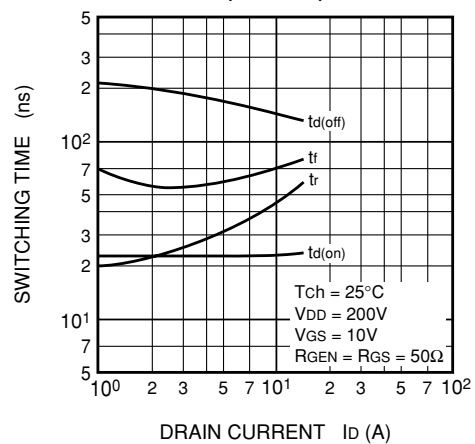
FORWARD TRANSFER ADMITTANCE
VS. DRAIN CURRENT
(TYPICAL)



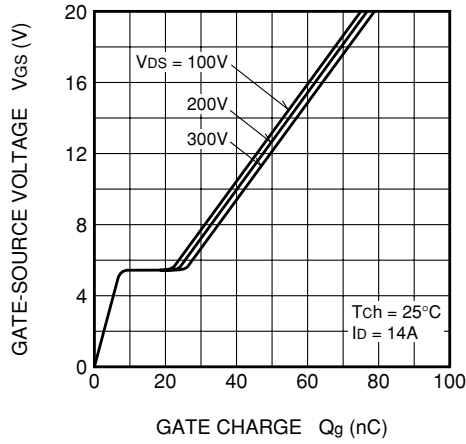
CAPACITANCE VS.
DRAIN-SOURCE VOLTAGE
(TYPICAL)



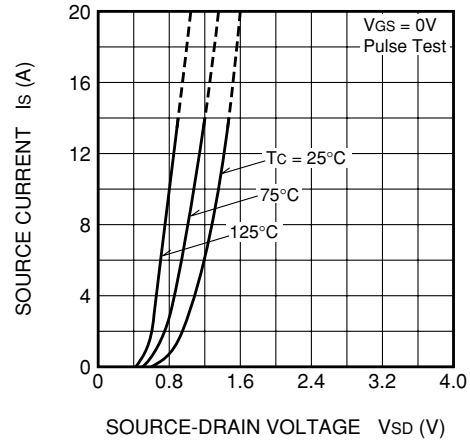
SWITCHING CHARACTERISTICS
(TYPICAL)



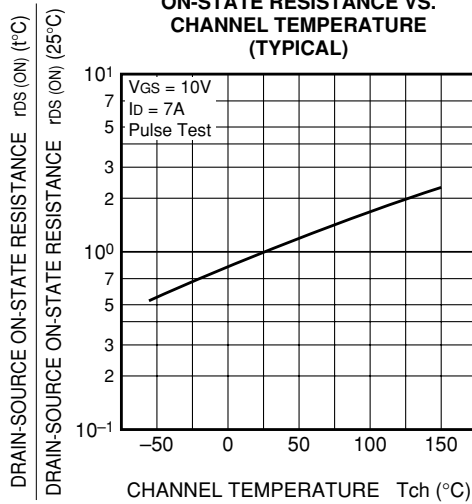
GATE-SOURCE VOLTAGE
VS. GATE CHARGE
(TYPICAL)



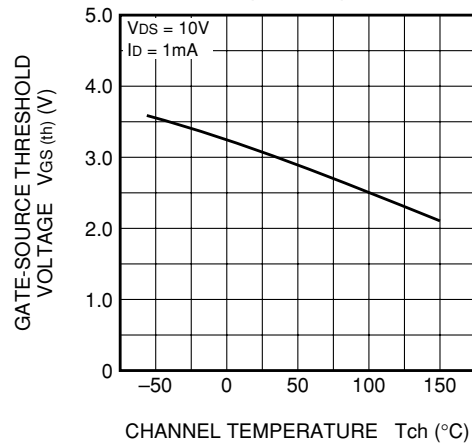
SOURCE-DRAIN DIODE
FORWARD CHARACTERISTICS
(TYPICAL)



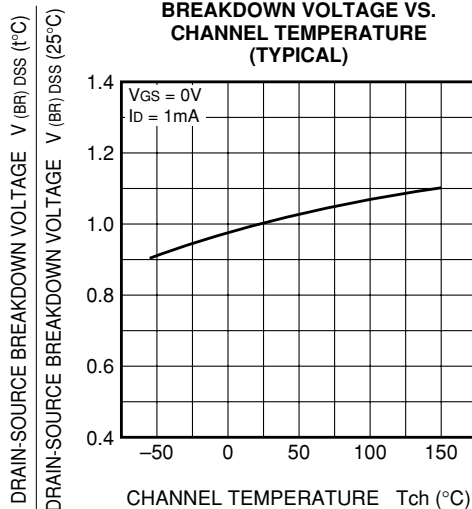
ON-STATE RESISTANCE VS.
CHANNEL TEMPERATURE
(TYPICAL)



THRESHOLD VOLTAGE VS.
CHANNEL TEMPERATURE
(TYPICAL)



BREAKDOWN VOLTAGE VS.
CHANNEL TEMPERATURE
(TYPICAL)



TRANSIENT THERMAL IMPEDANCE
CHARACTERISTICS

