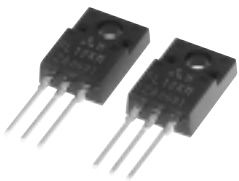


FL12KM-12A

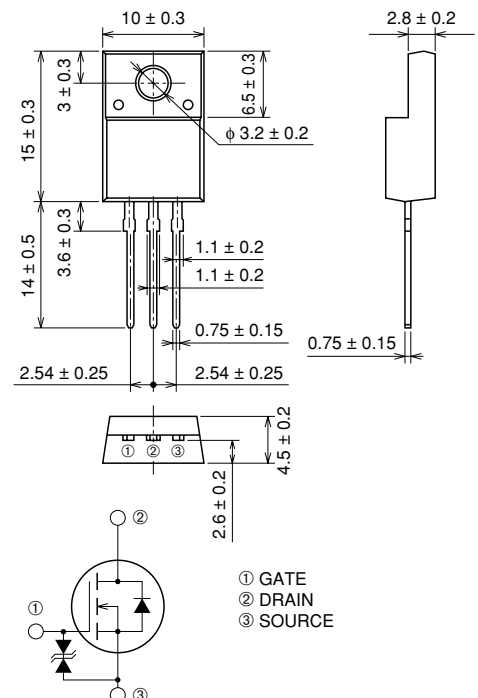
HIGH-SPEED SWITCHING USE

FL12KM-12A



- 10V DRIVE
- V_{DSS} 600V
- $r_{DS(ON)}(MAX)$ 0.94 Ω
- I_D 12A

OUTLINE DRAWING Dimensions in mm



TO-220FN

APPLICATION

SMPS, Inverter fluorescent light sets, etc.

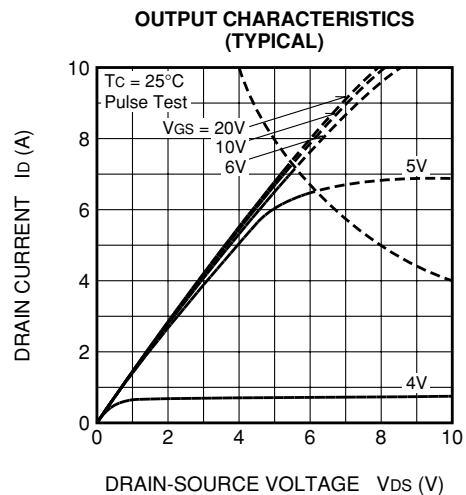
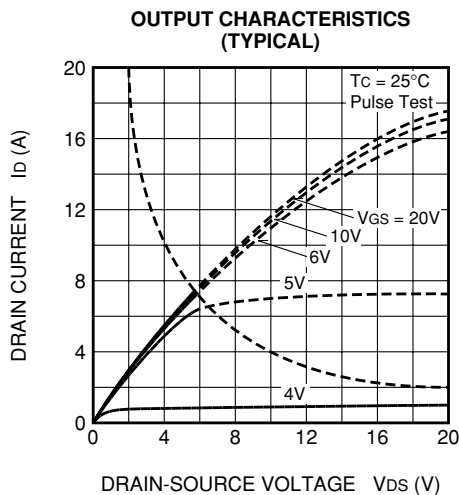
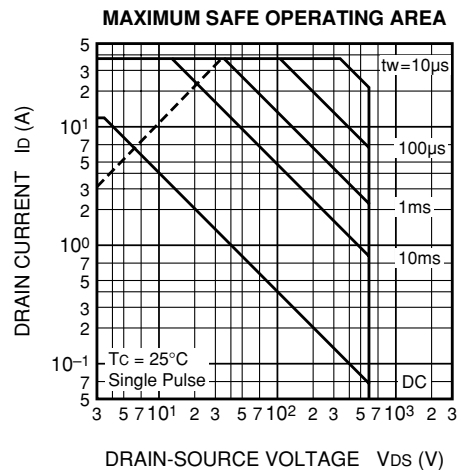
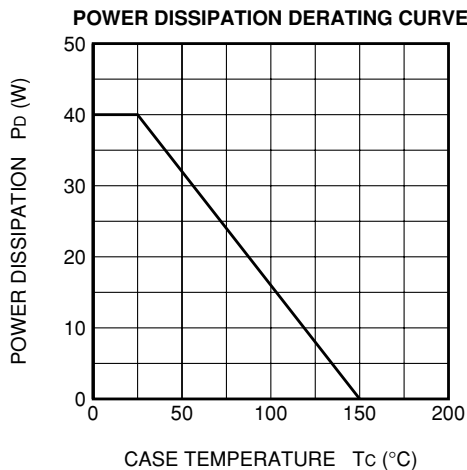
MAXIMUM RATINGS (Tc = 25°C)

Symbol	Parameter	Conditions	Ratings	Unit
V_{DSS}	Drain-source voltage	$V_{GS} = 0V$	600	V
V_{GSS}	Gate-source voltage	$V_{DS} = 0V$	± 30	V
I_D	Drain current		12	A
I_{DM}	Drain current (Pulsed)		36	A
I_{DA}	Avalanche drain current (Pulsed)	$L = 200\mu H$	12	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 1 minute, Terminal to case	2000	V
—	Weight	Typical value	2.0	g

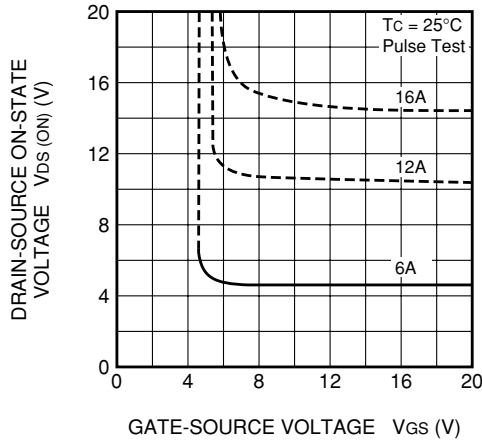
ELECTRICAL CHARACTERISTICS ($T_{ch} = 25^{\circ}\text{C}$)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
V (BR) DSS	Drain-source breakdown voltage	$I_D = 1\text{mA}, V_{GS} = 0\text{V}$	600	—	—	V
V (BR) GSS	Gate-source breakdown voltage	$I_{GS} = \pm 100\mu\text{A}, V_{DS} = 0\text{V}$	± 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	$V_{DS} = 600\text{V}, V_{GS} = 0\text{V}$	—	—	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	$I_D = 6\text{A}, V_{GS} = 10\text{V}$	—	0.80	0.94	Ω
V _{DS(ON)}	Drain-source on-state voltage	$I_D = 6\text{A}, V_{GS} = 10\text{V}$	—	4.80	5.64	V
y _{fs}	Forward transfer admittance	$I_D = 6\text{A}, V_{DS} = 10\text{V}$	—	8.0	—	S
C _{iss}	Input capacitance	$V_{DS} = 25\text{V}, V_{GS} = 0\text{V}, f = 1\text{MHz}$	—	1250	—	pF
C _{oss}	Output capacitance		—	150	—	pF
C _{rss}	Reverse transfer capacitance		—	55	—	pF
t _{d(on)}	Turn-on delay time	$V_{DD} = 200\text{V}, I_D = 6\text{A}, V_{GS} = 10\text{V}, R_{GEN} = R_{GS} = 50\Omega$	—	25	—	ns
t _r	Rise time		—	45	—	ns
t _{d(off)}	Turn-off delay time		—	250	—	ns
t _f	Fall time		—	90	—	ns
V _{SD}	Source-drain voltage	$I_S = 6\text{A}, V_{GS} = 0\text{V}$	—	1.5	2.0	V
R _{th(ch-c)}	Thermal resistance	Channel to case	—	—	3.13	$^{\circ}\text{C/W}$

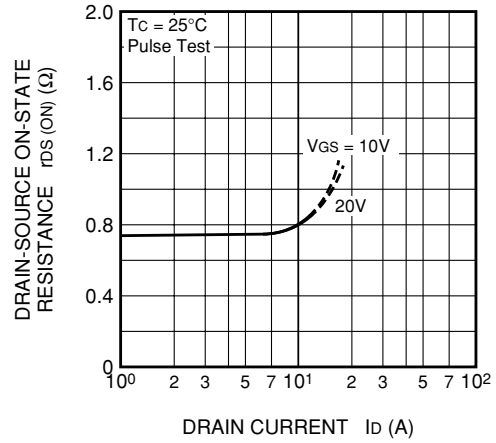
PERFORMANCE CURVES



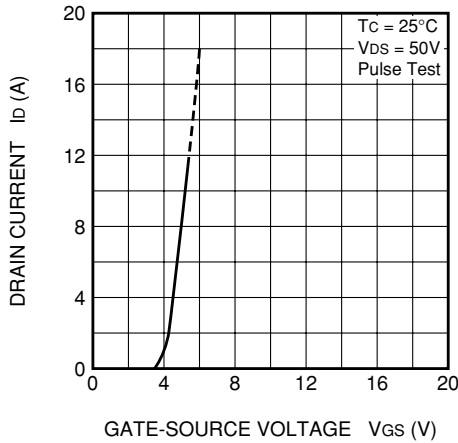
ON-STATE VOLTAGE VS. GATE-SOURCE VOLTAGE (TYPICAL)



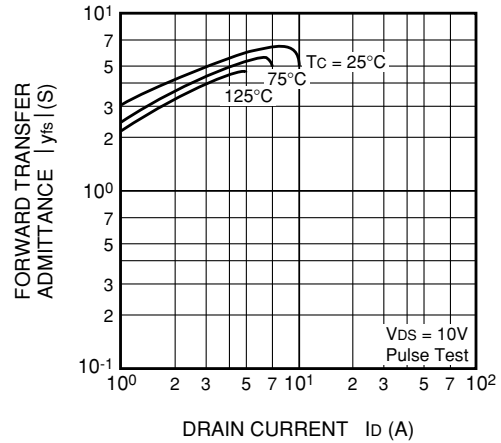
ON-STATE RESISTANCE VS. DRAIN CURRENT (TYPICAL)



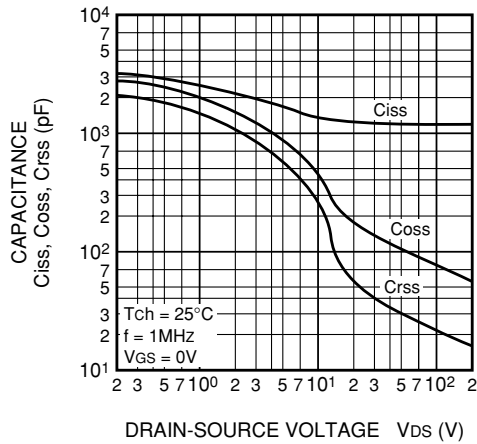
TRANSFER CHARACTERISTICS (TYPICAL)



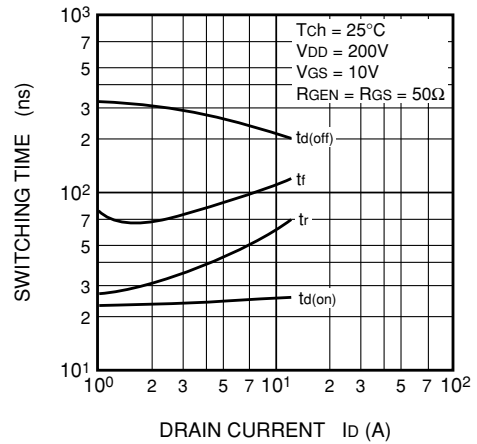
FORWARD TRANSFER ADMITTANCE VS. DRAIN CURRENT (TYPICAL)



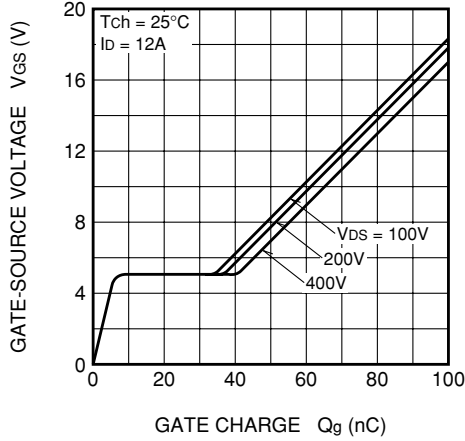
CAPACITANCE VS. DRAIN-SOURCE VOLTAGE (TYPICAL)



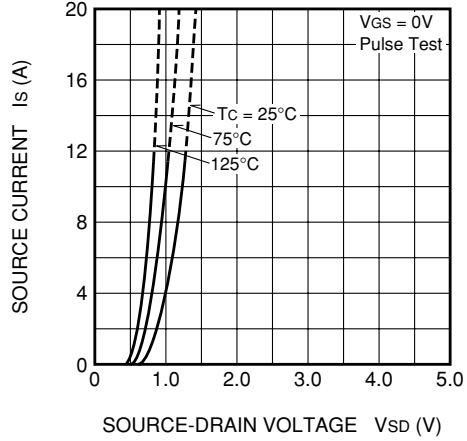
SWITCHING CHARACTERISTICS (TYPICAL)



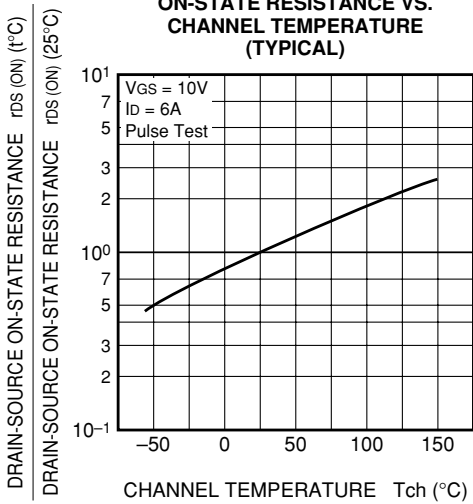
GATE-SOURCE VOLTAGE VS. GATE CHARGE (TYPICAL)



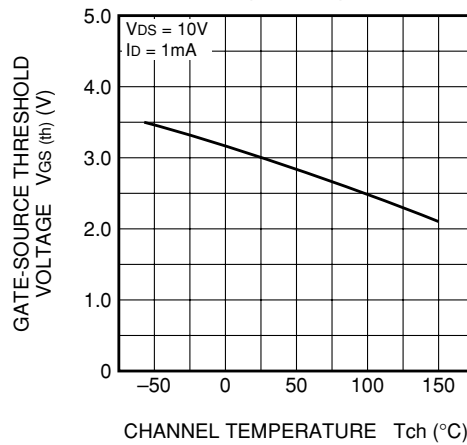
SOURCE-DRAIN DIODE FORWARD CHARACTERISTICS (TYPICAL)



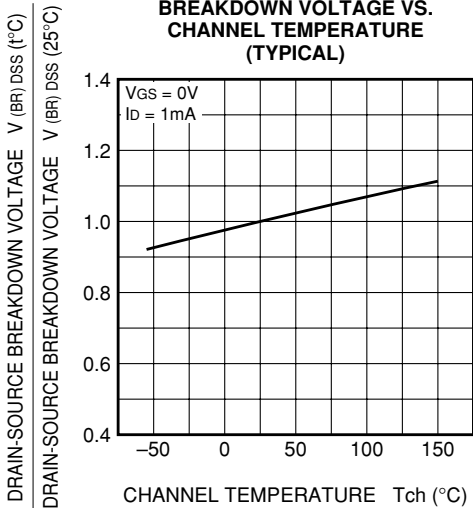
ON-STATE RESISTANCE VS. CHANNEL TEMPERATURE (TYPICAL)



THRESHOLD VOLTAGE VS. CHANNEL TEMPERATURE (TYPICAL)



BREAKDOWN VOLTAGE VS. CHANNEL TEMPERATURE (TYPICAL)



TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS

