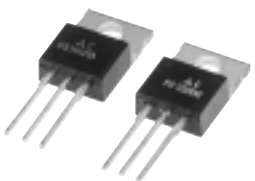


FS16UMA-5A

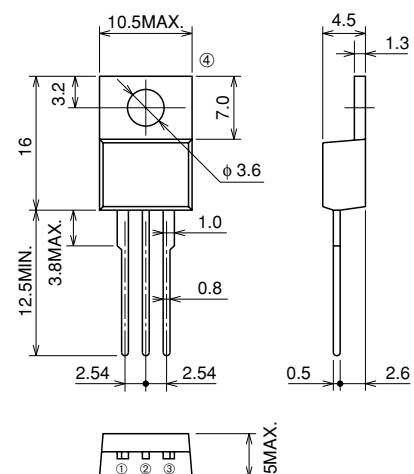
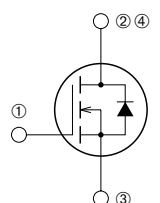
HIGH-SPEED SWITCHING USE

FS16UMA-5A



- 10V DRIVE
- V_{DSS} 250V
- $r_{DS(ON)}(MAX)$ 0.25Ω
- I_D 16A

OUTLINE DRAWING Dimensions in mm

① GATE
② DRAIN
③ SOURCE
④ DRAIN

TO-220

APPLICATION

CRT Display monitor, SMPS, etc.

MAXIMUM RATINGS (Tc = 25°C)

Symbol	Parameter	Conditions	Ratings	Unit
V_{DSS}	Drain-source voltage	$V_{GS} = 0V$	250	V
V_{GSS}	Gate-source voltage	$V_{DS} = 0V$	± 20	V
I_D	Drain current		16	A
I_{DM}	Drain current (Pulsed)		48	A
I_{DA}	Avalanche current (Pulsed)	$L = 200\mu H$	16	A
P_D	Maximum power dissipation		110	W
T_{ch}	Channel temperature		-55 ~ +150	°C
T_{stg}	Storage temperature		-55 ~ +150	°C
—	Weight	Typical value	2.0	g

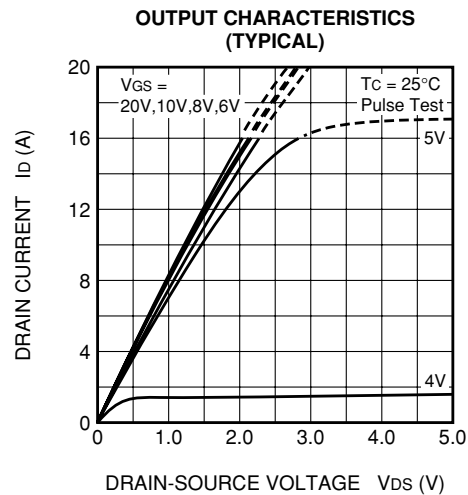
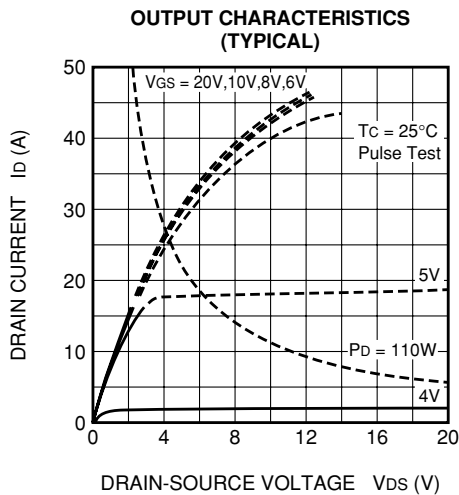
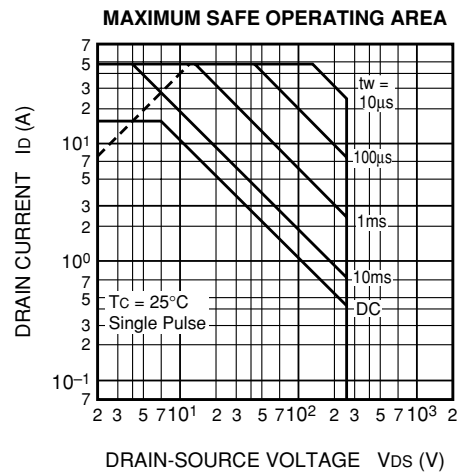
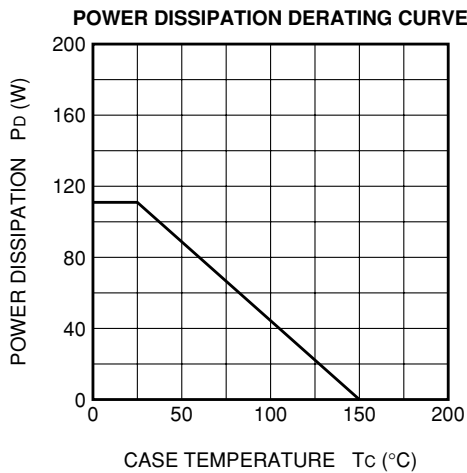
FS16UMA-5A

HIGH-SPEED SWITCHING USE

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	250	—	—	V
IGSS	Gate-source leakage current	VGS = ±20V, VDS = 0V	—	—	±0.1	μA
IDSS	Drain-source leakage current	VDS = 250V, VGS = 0V	—	—	1	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 = 8A, VGS = 10V	—	0.19	0.25	Ω
VDS(ON)	Drain-source on-state voltage	Id = 8A, VGS = 10V	—	1.52	2.00	V
yfs	Forward transfer admittance	Id = 8A, VDS = 10V	—	16.0	—	S
Ciss	Input capacitance	VDS = 25V, VGS = 0V, f = 1MHz	—	1850	—	pF
Coss	Output capacitance		—	180	—	pF
Crss	Reverse transfer capacitance		—	50	—	pF
td(on)	Turn-on delay time	VDD = 150V, Id = 8A, VGS = 10V, RGEN = RGS = 50Ω	—	30	—	ns
tr	Rise time		—	50	—	ns
td(off)	Turn-off delay time		—	320	—	ns
tf	Fall time		—	70	—	ns
VSD	Source-drain voltage	IS = 8A, VGS = 0V	—	1.5	2.0	V
Rth(ch-c)	Thermal resistance	Channel to case	—	—	1.14	°C/W

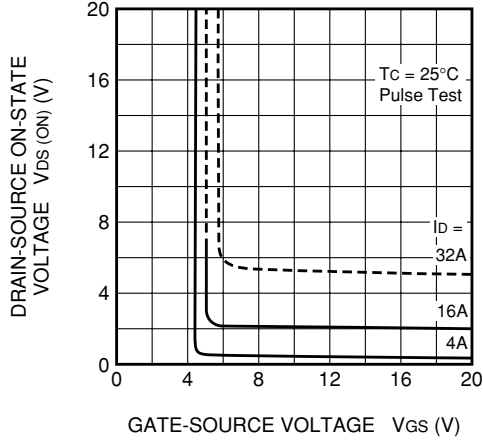
PERFORMANCE CURVES



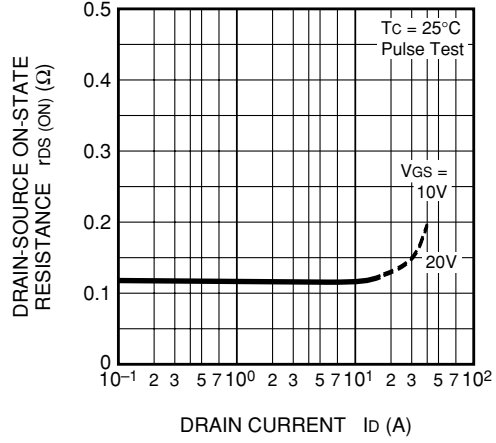
FS16UMA-5A

HIGH-SPEED SWITCHING USE

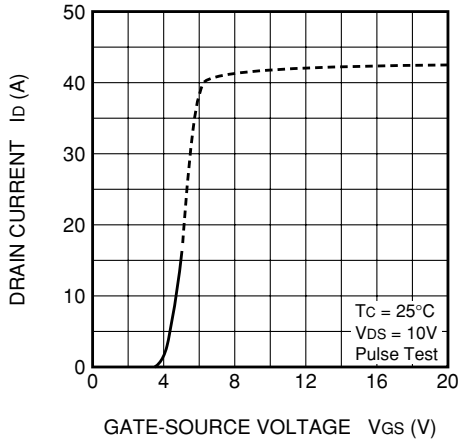
ON-STATE VOLTAGE VS. GATE-SOURCE VOLTAGE (TYPICAL)



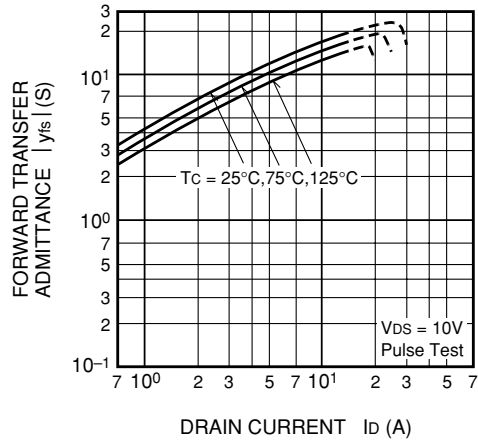
ON-STATE RESISTANCE VS. DRAIN CURRENT (TYPICAL)



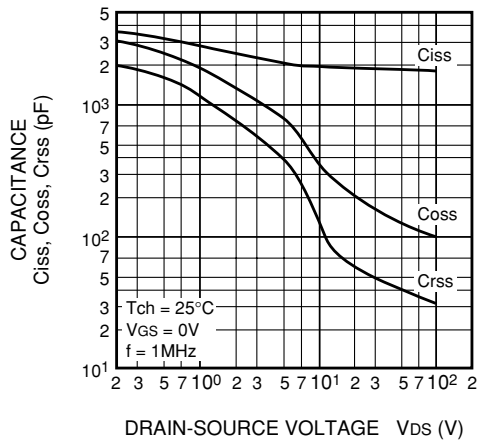
TRANSFER CHARACTERISTICS (TYPICAL)



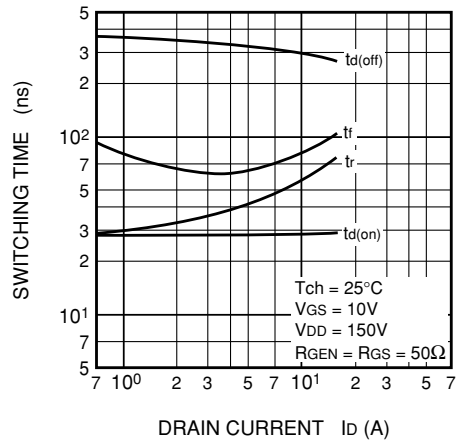
FORWARD TRANSFER ADMITTANCE VS. DRAIN CURRENT (TYPICAL)



CAPACITANCE VS. DRAIN-SOURCE VOLTAGE (TYPICAL)



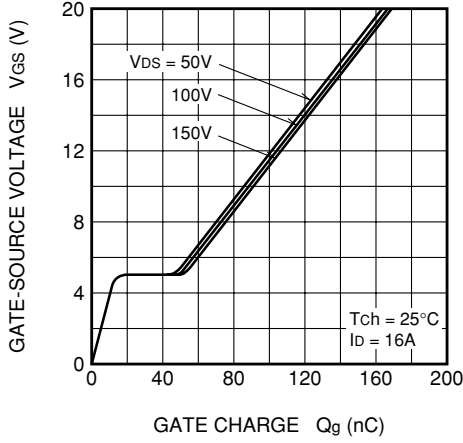
SWITCHING CHARACTERISTICS (TYPICAL)



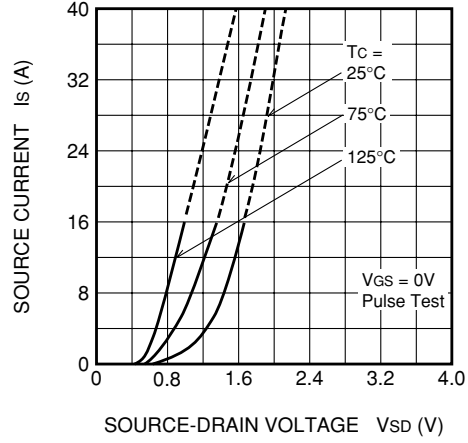
FS16UMA-5A

HIGH-SPEED SWITCHING USE

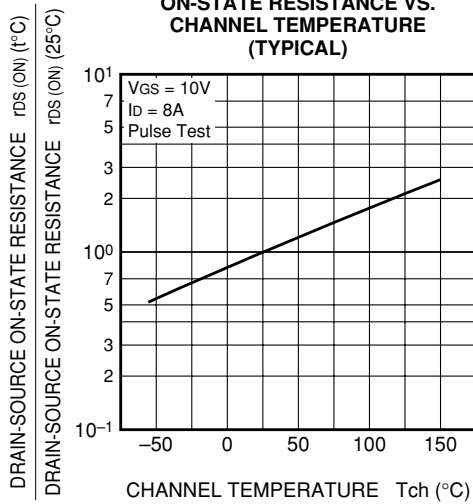
GATE-SOURCE VOLTAGE VS. GATE CHARGE (TYPICAL)



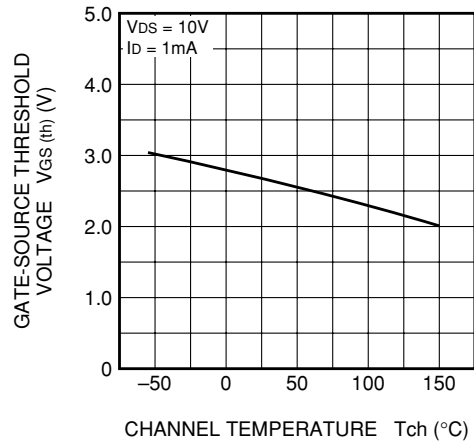
SOURCE-DRAIN DIODE FORWARD CHARACTERISTICS (TYPICAL)



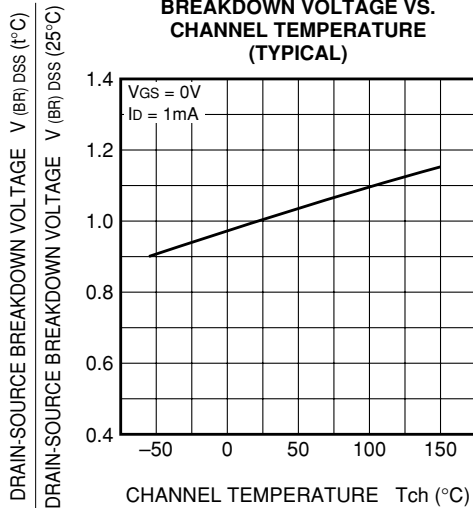
ON-STATE RESISTANCE VS. CHANNEL TEMPERATURE (TYPICAL)



THRESHOLD VOLTAGE VS. CHANNEL TEMPERATURE (TYPICAL)



BREAKDOWN VOLTAGE VS. CHANNEL TEMPERATURE (TYPICAL)



TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS

