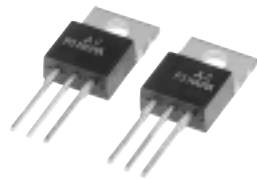


FS10UMA-5A

HIGH-SPEED SWITCHING USE

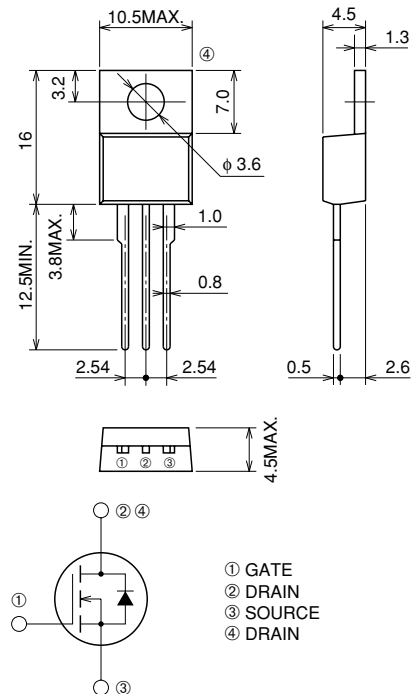
FS10UMA-5A



- 10V DRIVE
- V_{DS} 250V
- $r_{DS(ON)}$ (MAX) 0.52Ω
- I_D 10A

OUTLINE DRAWING

Dimensions in mm



TO-220

APPLICATION

CRT Display monitor, SMPS, etc.

MAXIMUM RATINGS (Tc = 25°C)

Symbol	Parameter	Conditions	Ratings	Unit
V_{DS}	Drain-source voltage	$V_{GS} = 0V$	250	V
V_{GS}	Gate-source voltage	$V_{DS} = 0V$	± 20	V
I_D	Drain current		10	A
I_{DM}	Drain current (Pulsed)		30	A
I_{DA}	Avalanche current (Pulsed)	$L = 200\mu H$	10	A
P_D	Maximum power dissipation		65	W
T_{ch}	Channel temperature		$-55 \sim +150$	°C
T_{stg}	Storage temperature		$-55 \sim +150$	°C
—	Weight	Typical value	2.0	g

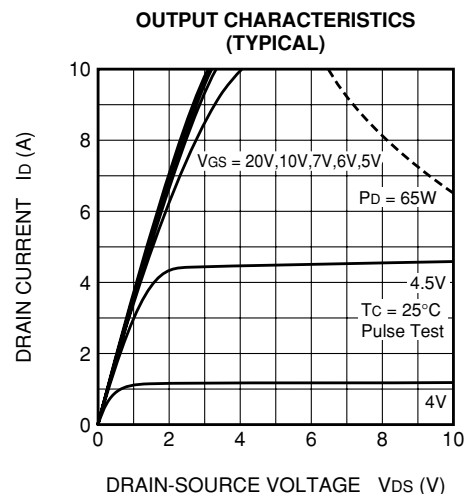
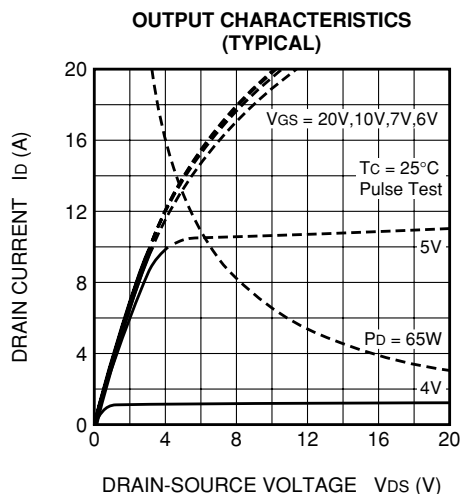
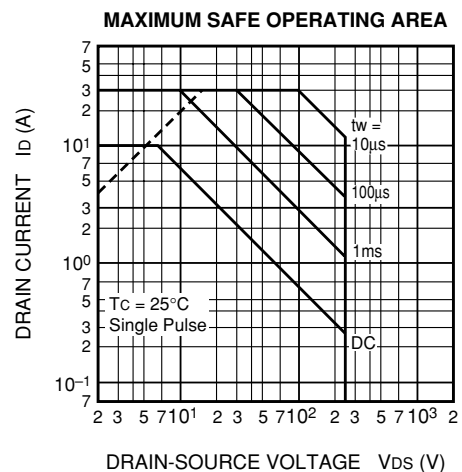
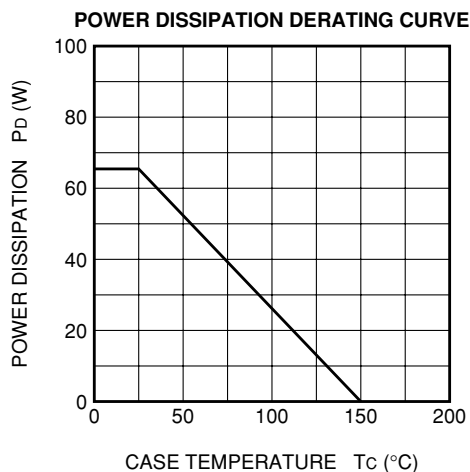
FS10UMA-5A

HIGH-SPEED SWITCHING USE

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	250	—	—	V
I _{GSS}	Gate-source leakage current	V _{GS} = ±20V, V _{DS} = 0V	—	—	±0.1	μA
I _{DSS}	Drain-source leakage current	V _{DS} = 250V, V _{GS} = 0V	—	—	1	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 = 5A, V _{GS} = 10V	—	0.40	0.52	Ω
V _{DS(ON)}	Drain-source on-state voltage	I _D = 5A, V _{GS} = 10V	—	2.00	2.60	V
y _{fs}	Forward transfer admittance	I _D = 5A, V _{DS} = 10V	—	9.0	—	S
C _{iss}	Input capacitance	V _{DS} = 25V, V _{GS} = 0V, f = 1MHz	—	950	—	pF
C _{oss}	Output capacitance		—	90	—	pF
C _{rss}	Reverse transfer capacitance		—	25	—	pF
t _{d(on)}	Turn-on delay time	V _{DD} = 150V, I _D = 5A, V _{GS} = 10V, R _{GEN} = R _{GS} = 50Ω	—	20	—	ns
t _r	Rise time		—	25	—	ns
t _{d(off)}	Turn-off delay time		—	150	—	ns
t _f	Fall time		—	40	—	ns
V _{SD}	Source-drain voltage	I _S = 5A, V _{GS} = 0V	—	1.5	2.0	V
R _{th(ch-c)}	Thermal resistance	Channel to case	—	—	1.92	°C/W

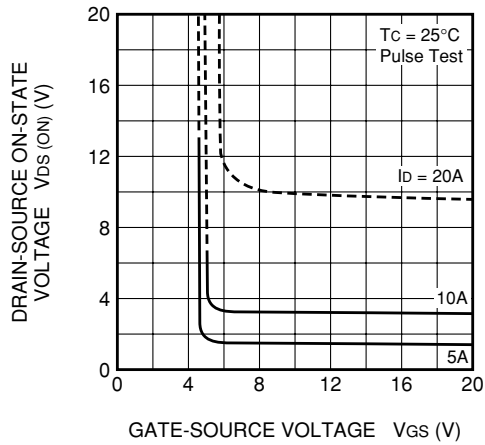
PERFORMANCE CURVES



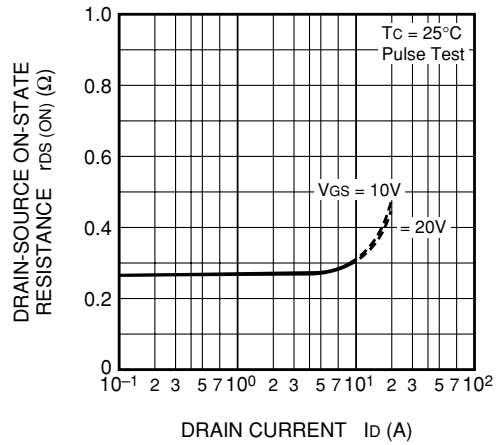
FS10UMA-5A

HIGH-SPEED SWITCHING USE

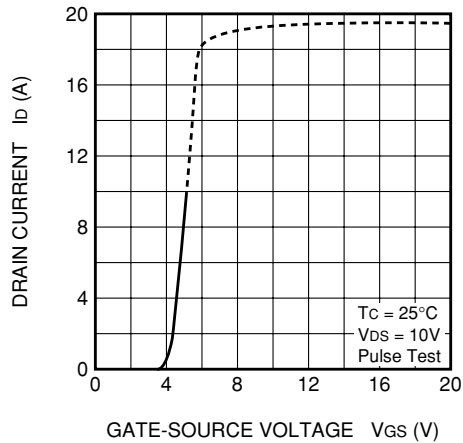
ON-STATE VOLTAGE VS.
GATE-SOURCE VOLTAGE
(TYPICAL)



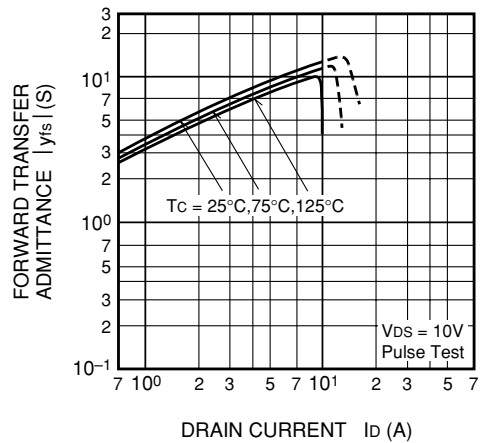
ON-STATE RESISTANCE VS.
DRAIN CURRENT
(TYPICAL)



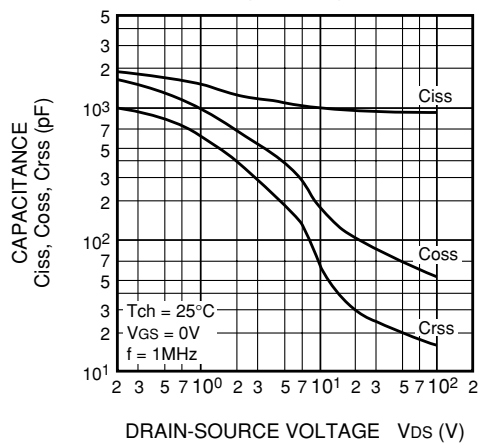
TRANSFER CHARACTERISTICS
(TYPICAL)



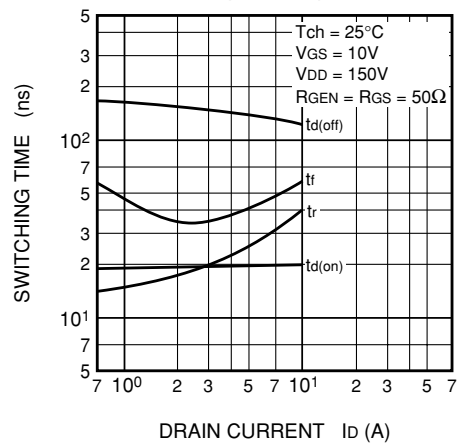
FORWARD TRANSFER ADMITTANCE
VS. DRAIN CURRENT
(TYPICAL)



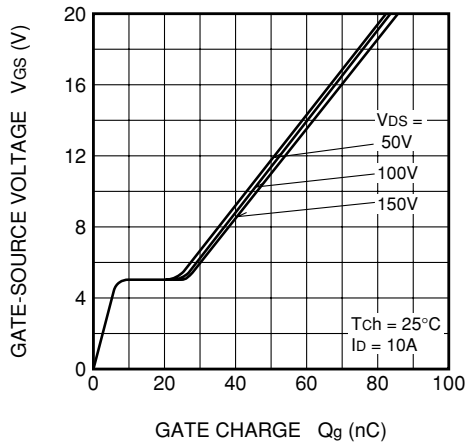
CAPACITANCE VS.
DRAIN-SOURCE VOLTAGE
(TYPICAL)



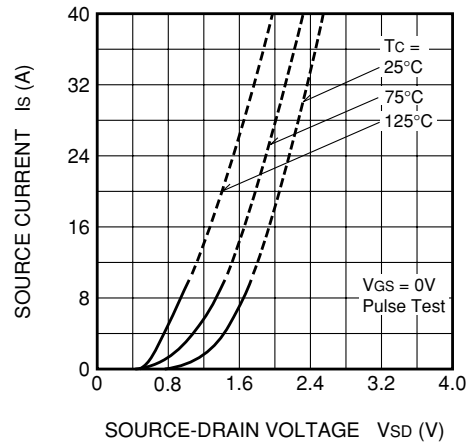
SWITCHING CHARACTERISTICS
(TYPICAL)



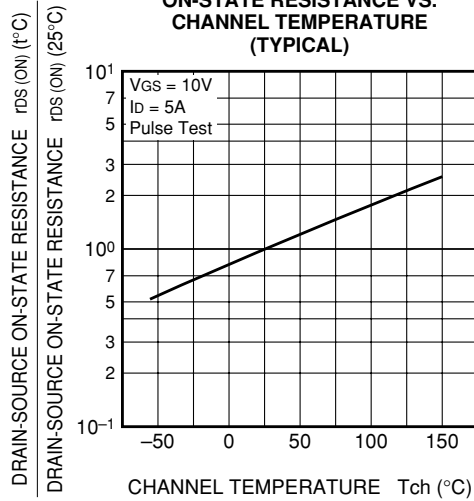
GATE-SOURCE VOLTAGE
VS. GATE CHARGE
(TYPICAL)



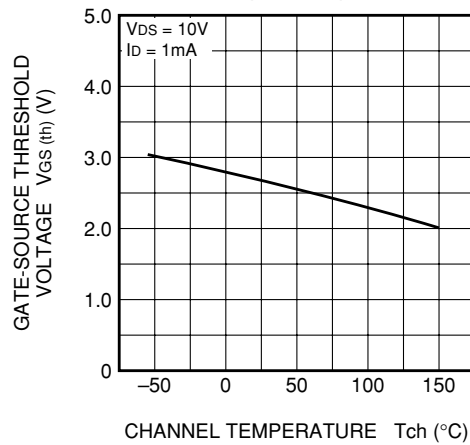
SOURCE-DRAIN DIODE
FORWARD CHARACTERISTICS
(TYPICAL)



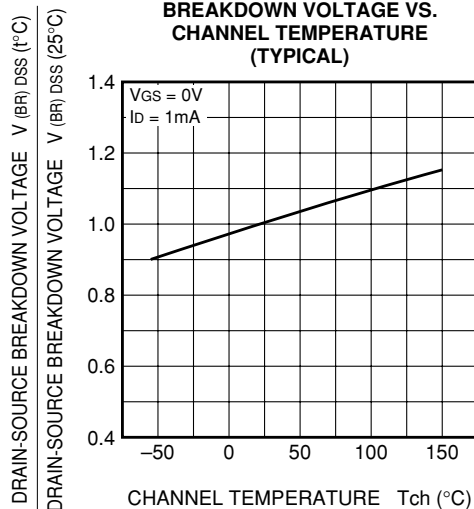
ON-STATE RESISTANCE VS.
CHANNEL TEMPERATURE
(TYPICAL)



THRESHOLD VOLTAGE VS.
CHANNEL TEMPERATURE
(TYPICAL)



BREAKDOWN VOLTAGE VS.
CHANNEL TEMPERATURE
(TYPICAL)



TRANSIENT THERMAL IMPEDANCE
CHARACTERISTICS

