

FS3VS-16A

HIGH-SPEED SWITCHING USE

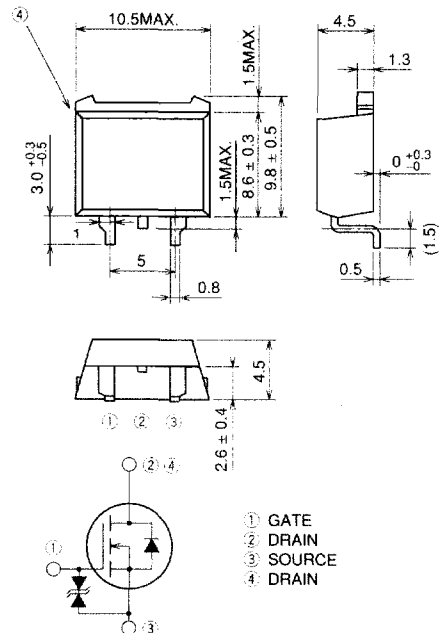
FS3VS-16A



- V_{DS} 800V
- $r_{DS(ON)}(MAX)$ 3.3Ω
- I_D 3A

OUTLINE DRAWING

Dimensions in mm



TO-220S

APPLICATION

SMPS, DC-DC Converter, battery charger, power supply of printer, copier, HDD, FDD, TV, VCR, personal computer etc.

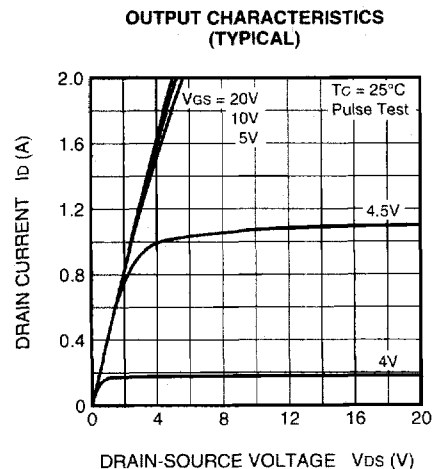
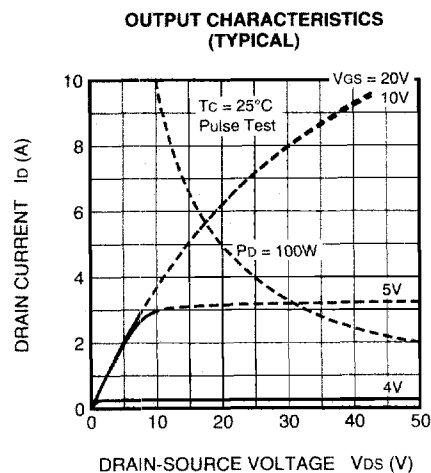
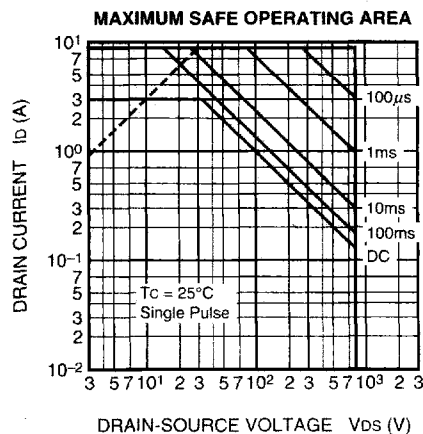
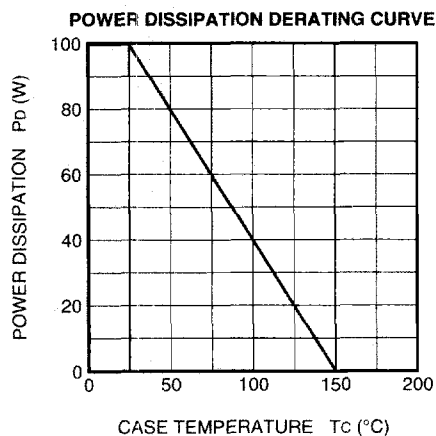
MAXIMUM RATINGS ($T_c = 25^\circ\text{C}$)

Symbol	Parameter	Conditions	Ratings	Unit
V_{DS}	Drain-source voltage	$V_{GS} = 0V$	800	V
V_{GS}	Gate-source voltage	$V_{DS} = 0V$	± 30	V
I_D	Drain current		3	A
I_{DM}	Drain current (Pulsed)		9	A
P_D	Maximum power dissipation		100	W
T_{ch}	Channel temperature		$-55 \sim +150$	$^\circ\text{C}$
T_{stg}	Storage temperature		$-55 \sim +150$	$^\circ\text{C}$
—	Weight	Typical value	1.2	g

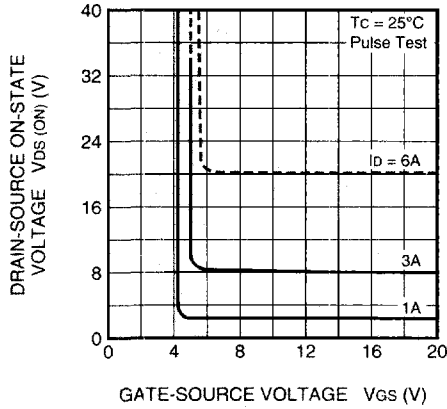
ELECTRICAL CHARACTERISTICS (Tch = 25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
V(BR)DSS	Drain-source breakdown voltage	ID = 1mA, VGS = 0V	800	—	—	V
V(BR)GSS	Gate-source breakdown voltage	IGS = ±100μA, VDS = 0V	±30	—	—	V
IGSS	Gate leakage current	VGS = ±25V, VDS = 0V	—	—	±10	μA
IDSS	Drain current	VDS = 800V, VGS = 0V	—	—	1	mA
VGS(th)	Gate-source threshold voltage	ID = 1mA, VDS = 10V	2	3	4	V
rDS(ON)	Drain-source on-state resistance	ID = 1.5A, VGS = 10V	—	2.53	3.30	Ω
VDS(ON)	Drain-source on-state voltage	ID = 1.5A, VGS = 10V	—	3.80	4.95	V
yfs	Forward transfer admittance	ID = 1.5A, VDS = 10V	2.1	3.5	—	S
Ciss	Input capacitance	VDS = 25V, VGS = 0V, f = 1MHz	—	770	—	pF
Coss	Output capacitance		—	77	—	pF
Crss	Reverse transfer capacitance		—	13	—	pF
td(on)	Turn-on delay time	VDD = 200V, ID = 1.5A, VGS = 10V, RGEN = RGS = 50Ω	—	15	—	ns
tr	Rise time		—	15	—	ns
td(off)	Turn-off delay time		—	90	—	ns
tf	Fall time		—	25	—	ns
VSD	Source-drain voltage	IS = 1.5A, VGS = 0V	—	1.0	1.5	V
Rth(ch-c)	Thermal resistance	Channel to case	—	—	1.25	°C/W

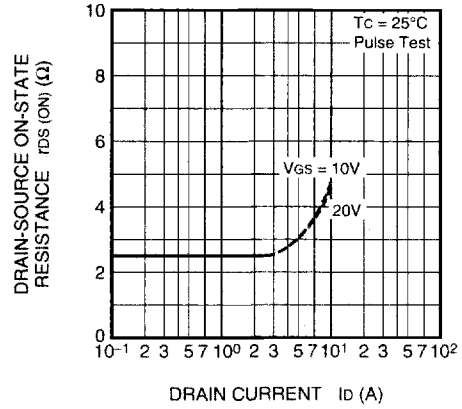
PERFORMANCE CURVES



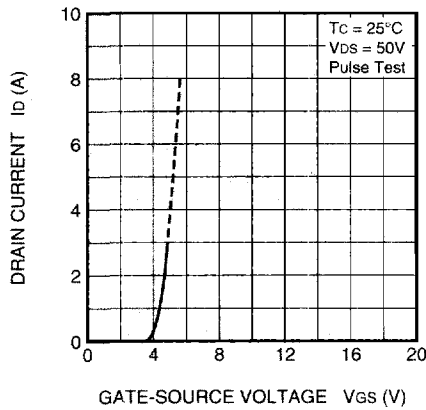
ON-STATE VOLTAGE VS.
GATE-SOURCE VOLTAGE
(TYPICAL)



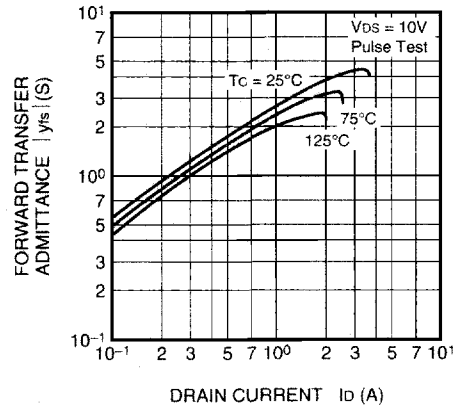
ON-STATE RESISTANCE VS.
DRAIN CURRENT
(TYPICAL)



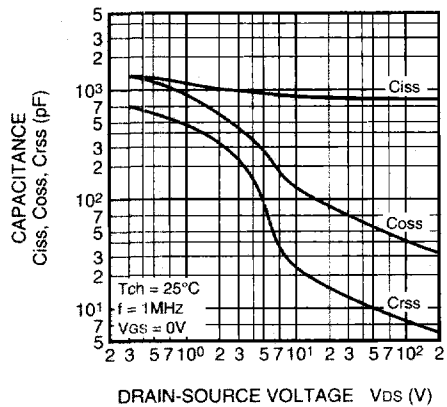
TRANSFER CHARACTERISTICS
(TYPICAL)



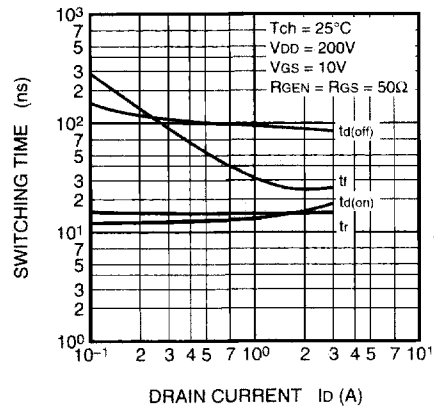
FORWARD TRANSFER ADMITTANCE
VS. DRAIN CURRENT
(TYPICAL)



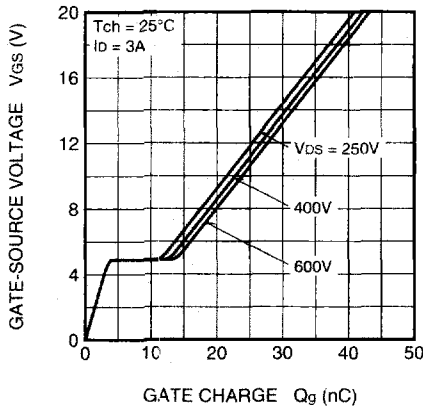
CAPACITANCE VS.
DRAIN-SOURCE VOLTAGE
(TYPICAL)



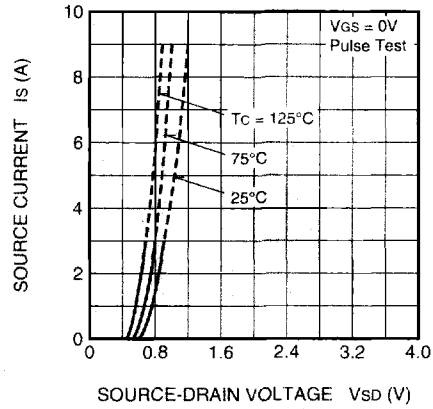
SWITCHING CHARACTERISTICS
(TYPICAL)



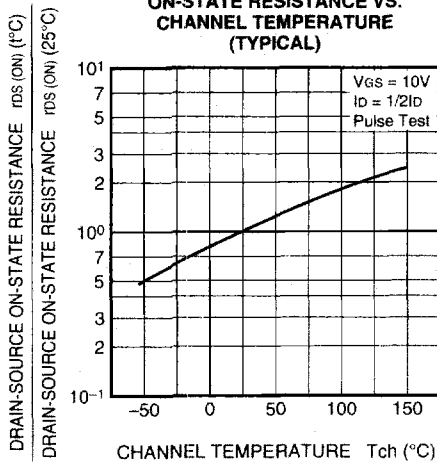
GATE-SOURCE VOLTAGE
VS. GATE CHARGE
(TYPICAL)



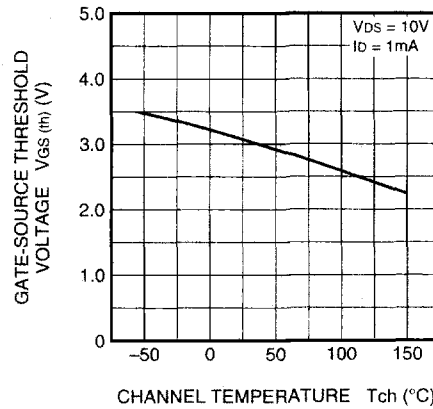
SOURCE-DRAIN DIODE
FORWARD CHARACTERISTICS
(TYPICAL)



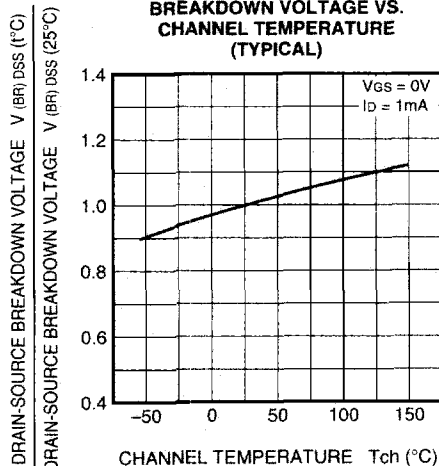
ON-STATE RESISTANCE VS.
CHANNEL TEMPERATURE
(TYPICAL)



THRESHOLD VOLTAGE VS.
CHANNEL TEMPERATURE
(TYPICAL)



BREAKDOWN VOLTAGE VS.
CHANNEL TEMPERATURE
(TYPICAL)



TRANSIENT THERMAL IMPEDANCE
CHARACTERISTICS

