

FS3VS-14A

HIGH-SPEED SWITCHING USE

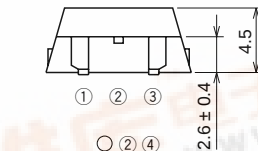
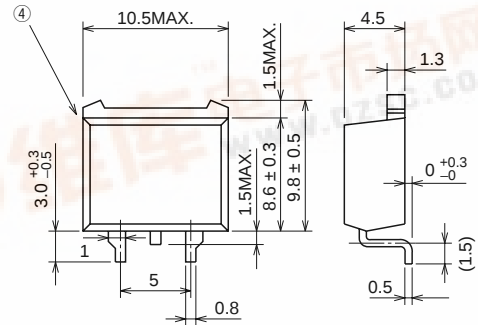
FS3VS-14A



- V_{DS} 700V
- $r_{DS(ON)}(MAX)$ 4.75Ω
- I_D 3A

OUTLINE DRAWING

Dimensions in mm



- ① GATE
- ② DRAIN
- ③ SOURCE
- ④ DRAIN

TO-220S

APPLICATION

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

MAXIMUM RATINGS (Tc = 25°C)

Symbol	Parameter	Conditions	Ratings	Unit
V_{DS}	Drain-source voltage	$V_{GS} = 0V$	700	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		85	W
T_{ch}	Channel temperature		-55 ~ +150	°C
T_{stg}	Storage temperature		-55 ~ +150	°C
—	Weight	Typical value	1.2	g

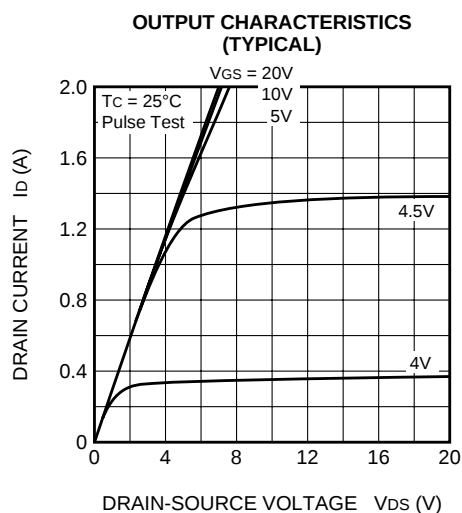
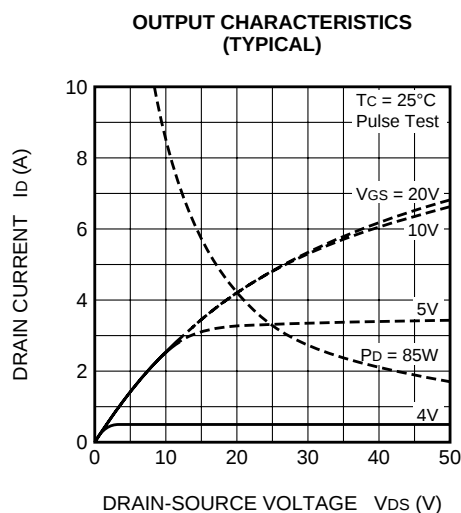
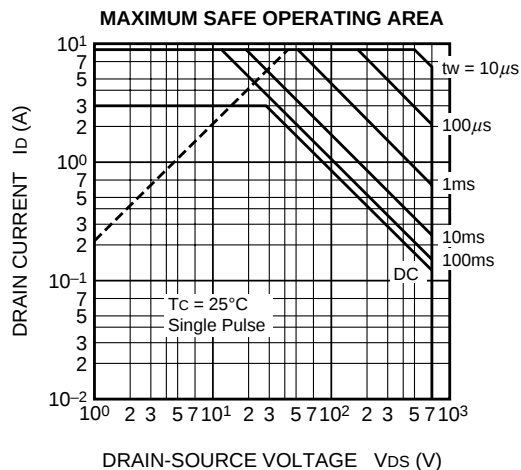
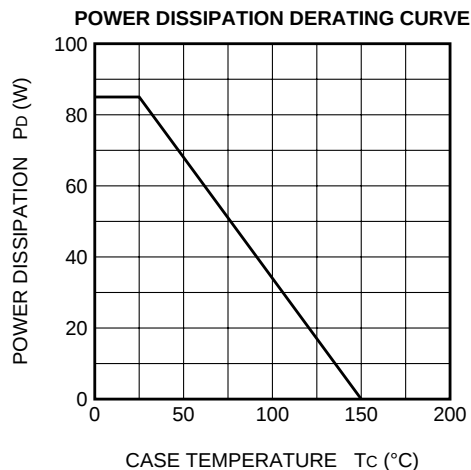
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ELECTRICAL CHARACTERISTICS (Tch = 25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
V(BR)DSS	Drain-source breakdown voltage	Id = 1mA, VGS = 0V	700	—	—	V
V(BR)GSS	Gate-source breakdown voltage	IGS = ±100μA, VDS = 0V	±30	—	—	V
IGSS	Gate-source leakage current	VGS = ±25V, VDS = 0V	—	—	±10	μA
IDSS	Drain-source leakage current	VDS = 700V, 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	—	3.65	4.75	Ω
VDS(ON)	Drain-source on-state voltage	Id = 1.5A, VGS = 10V	—	5.48	7.13	V
yfs	Forward transfer admittance	Id = 1.5A, VDS = 10V	1.4	2.4	—	S
Ciss	Input capacitance	VDS = 25V, VGS = 0V, f = 1MHz	—	460	—	pF
Coss	Output capacitance		—	50	—	pF
Crss	Reverse transfer capacitance		—	9	—	pF
td(on)	Turn-on delay time	VDD = 200V, Id = 1.5A, VGS = 10V, RGEN = RGS = 50Ω	—	12	—	ns
tr	Rise time		—	15	—	ns
td(off)	Turn-off delay time		—	52	—	ns
tf	Fall time		—	22	—	ns
VSD	Source-drain voltage	IS = 1.5A, VGS = 0V	—	1.0	1.5	V
Rth(ch-c)	Thermal resistance	Channel to case	—	—	1.47	°C/W

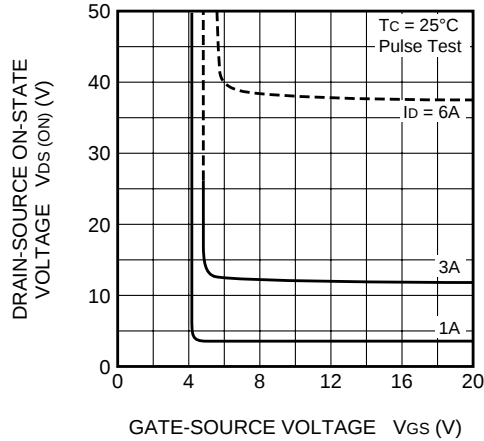
PERFORMANCE CURVES



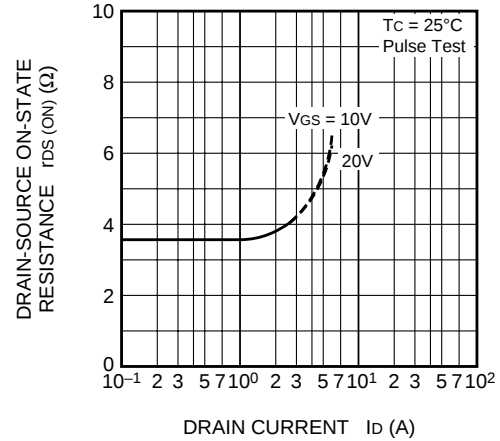
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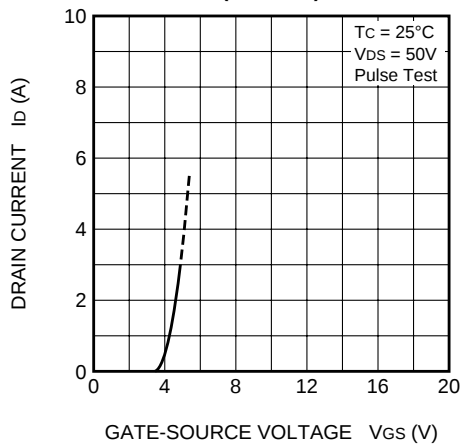
ON-STATE VOLTAGE VS.
GATE-SOURCE VOLTAGE
(TYPICAL)



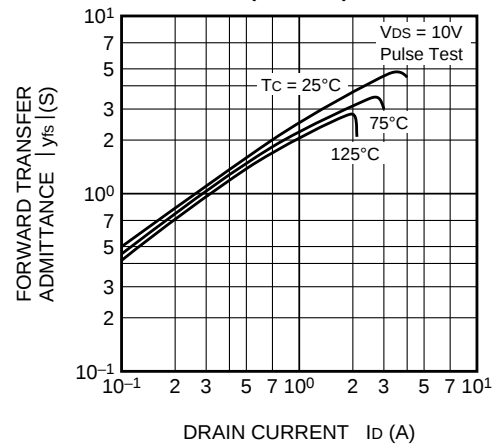
ON-STATE RESISTANCE VS.
DRAIN CURRENT
(TYPICAL)



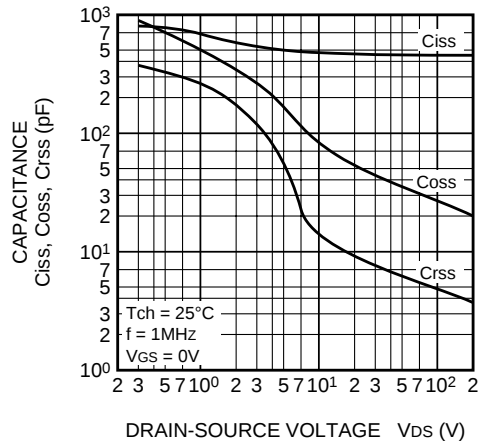
TRANSFER CHARACTERISTICS
(TYPICAL)



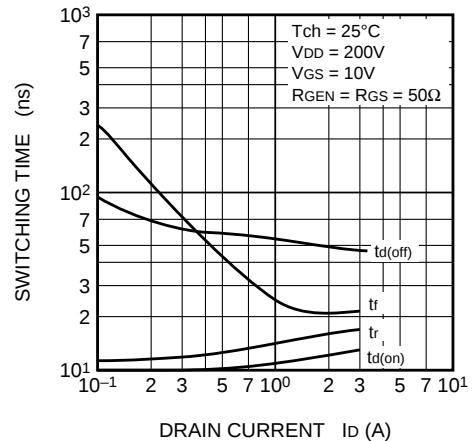
FORWARD TRANSFER ADMITTANCE
VS. DRAIN CURRENT
(TYPICAL)



CAPACITANCE VS.
DRAIN-SOURCE VOLTAGE
(TYPICAL)



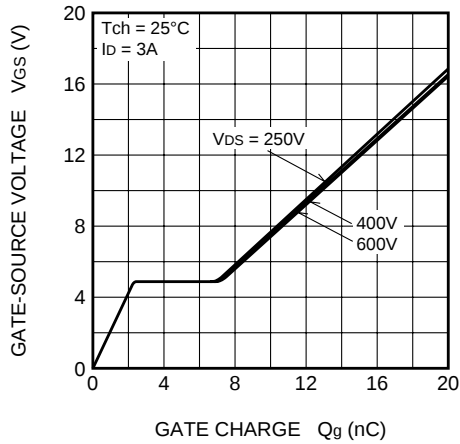
SWITCHING CHARACTERISTICS
(TYPICAL)



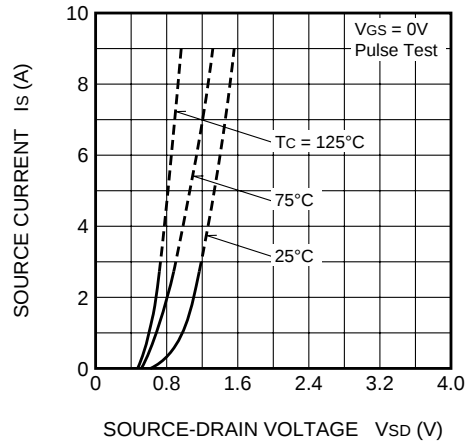
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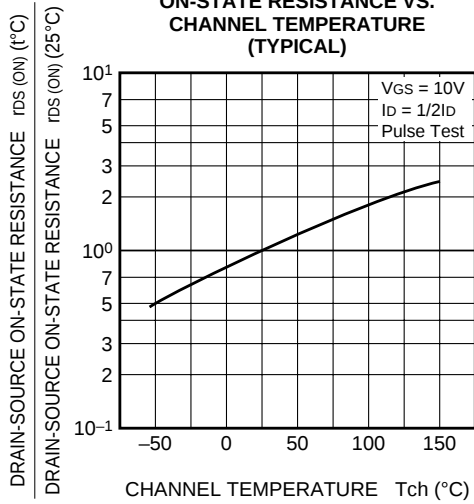
**GATE-SOURCE VOLTAGE
VS. GATE CHARGE
(TYPICAL)**



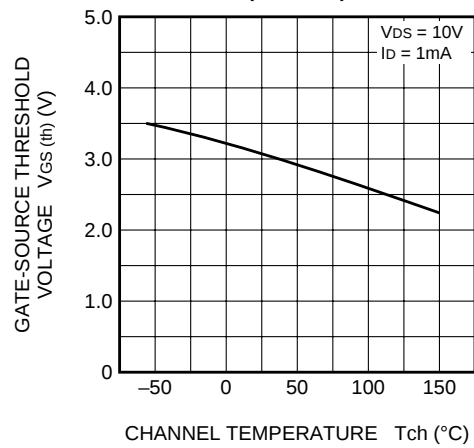
**SOURCE-DRAIN DIODE
FORWARD CHARACTERISTICS
(TYPICAL)**



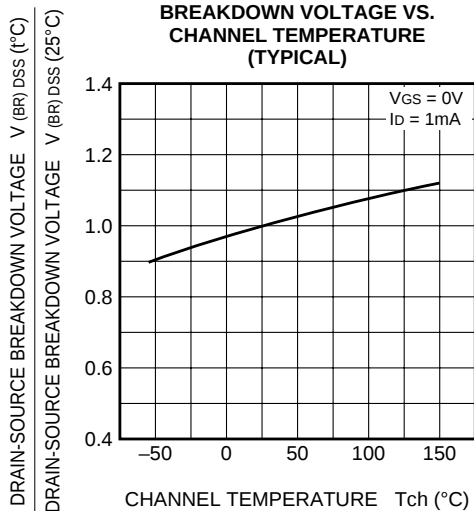
**ON-STATE RESISTANCE VS.
CHANNEL TEMPERATURE
(TYPICAL)**



**THRESHOLD VOLTAGE VS.
CHANNEL TEMPERATURE
(TYPICAL)**



**BREAKDOWN VOLTAGE VS.
CHANNEL TEMPERATURE
(TYPICAL)**



**TRANSIENT THERMAL IMPEDANCE
CHARACTERISTICS**

