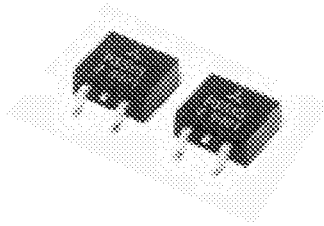


FS5VS-2

HIGH-SPEED SWITCHING USE

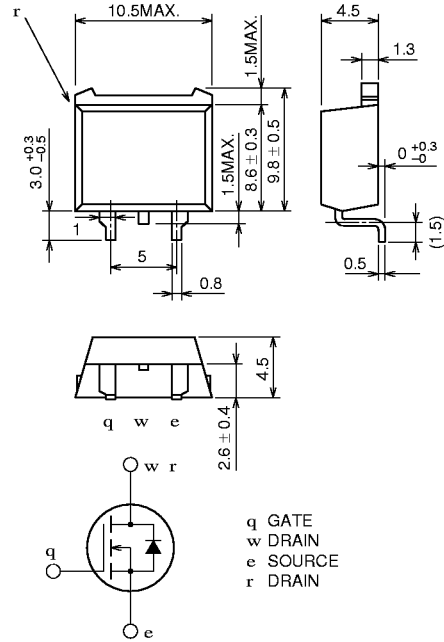
FS5VS-2



- ˆ 10V DRIVE
- ˆ V_{DS} 100V
- ˆ $r_{DS(ON)}$ (MAX) 0.47Ω
- ˆ I_D 5A
- ˆ Integrated Fast Recovery Diode (TYP.) 80ns

OUTLINE DRAWING

Dimensions in mm



TO-220S

APPLICATION

Motor control, Lamp control, Solenoid control
DC-DC converter, etc.

MAXIMUM RATINGS (T_c = 25°C)

Symbol	Parameter	Conditions	Ratings	Unit
V_{DS}	Drain-source voltage	$V_{GS} = 0V$	100	V
V_{GS}	Gate-source voltage	$V_{DS} = 0V$	± 20	V
I_D	Drain current		5	A
I_{DM}	Drain current (Pulsed)		20	A
I_{DA}	Avalanche drain current (Pulsed)	$L = 100\mu H$	5	A
I_S	Source current		5	A
I_{SM}	Source current (Pulsed)		20	A
P_D	Maximum power dissipation		20	W
T_{ch}	Channel temperature		-55 ~ +150	°C
T_{stg}	Storage temperature		-55 ~ +150	°C
—	Weight	Typical value	1.2	g

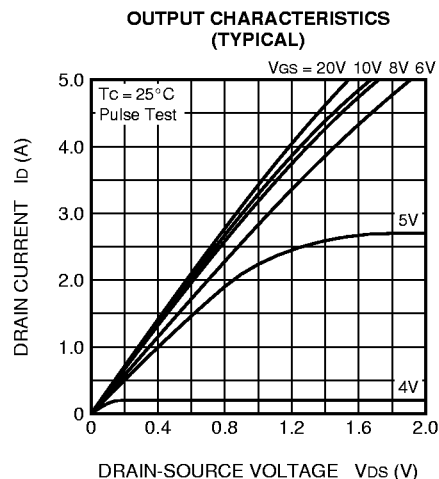
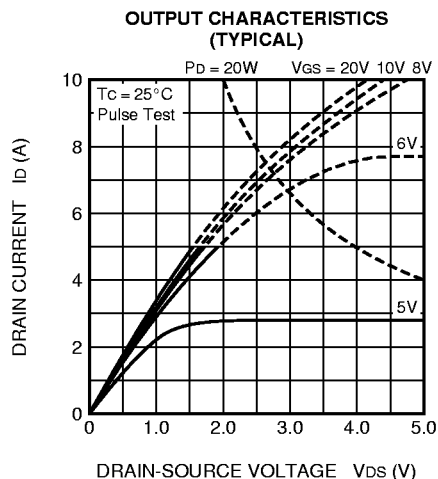
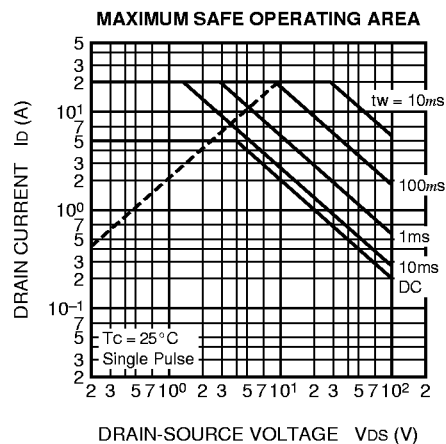
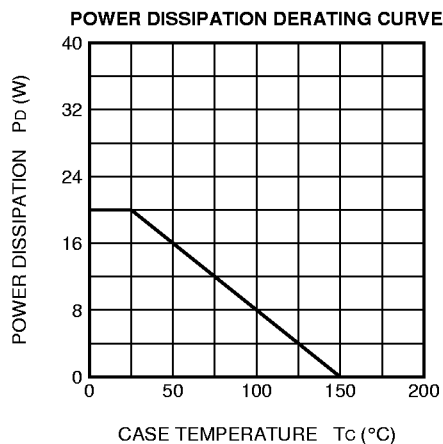
FS5VS-2

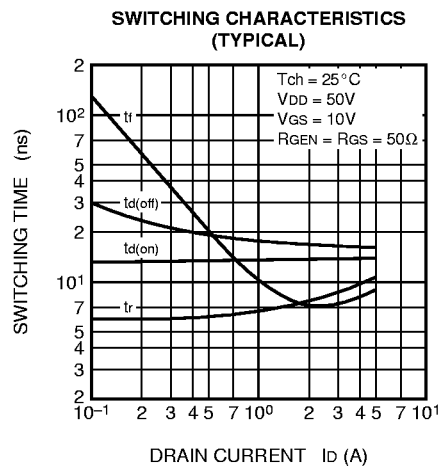
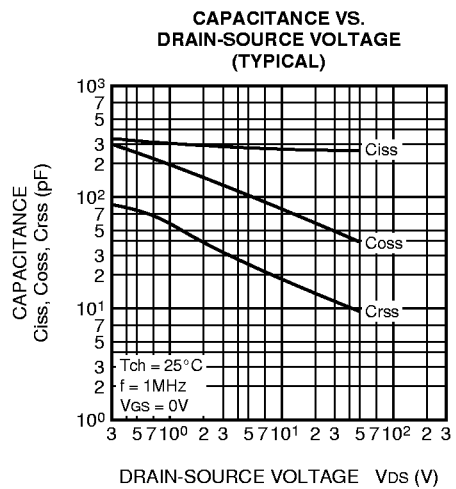
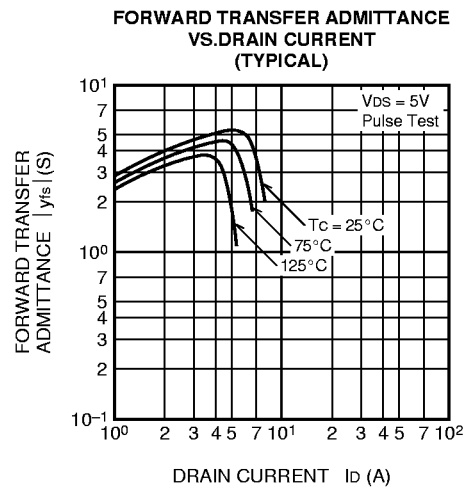
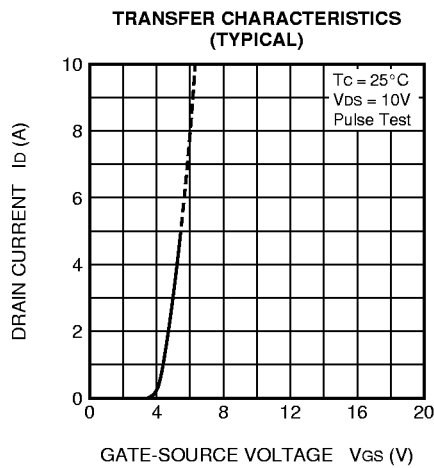
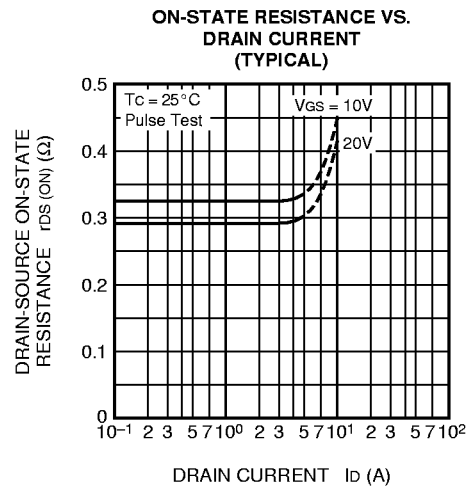
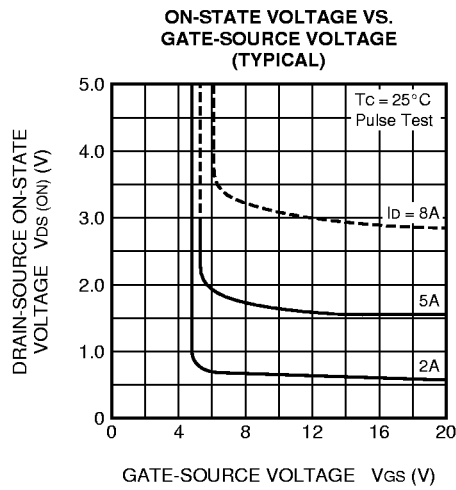
HIGH-SPEED SWITCHING USE

ELECTRICAL CHARACTERISTICS (Tch = 25°C)

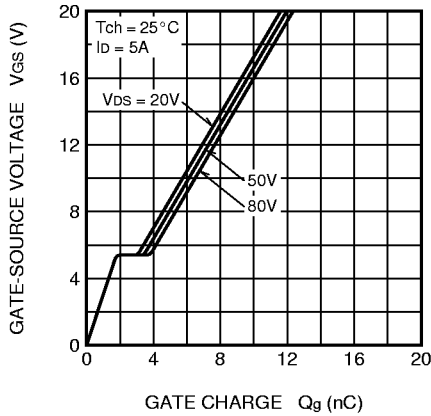
Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
V(BR)DSS	Drain-source breakdown voltage	ID = 1mA, VGS = 0V	100	—	—	V
IGSS	Gate-source leakage current	VGS = ±20V, VDS = 0V	—	—	±0.1	μA
IDSS	Drain-source leakage current	VDS = 100V, VGS = 0V	—	—	0.1	mA
VGS(th)	Gate-source threshold voltage	ID = 1mA, VDS = 10V	2.0	3.0	4.0	V
rDS(ON)	Drain-source on-state resistance	ID = 2A, VGS = 10V	—	0.33	0.47	Ω
VDS(ON)	Drain-source on-state voltage	ID = 2A, VGS = 10V	—	0.66	0.94	V
yfs	Forward transfer admittance	ID = 2A, VDS = 5V	—	4.0	—	S
Ciss	Input capacitance	VDS = 10V, VGS = 0V, f = 1MHz	—	280	—	pF
Coss	Output capacitance		—	75	—	pF
Crss	Reverse transfer capacitance		—	18	—	pF
td(on)	Turn-on delay time	VDD = 50V, ID = 2A, VGS = 10V, RGEN = RGS = 50Ω	—	15	—	ns
tr	Rise time		—	8	—	ns
td(off)	Turn-off delay time		—	17	—	ns
tf	Fall time		—	7	—	ns
VSD	Source-drain voltage	IS = 2A, VGS = 0V	—	1.0	1.5	V
Rth(ch-c)	Thermal resistance	Channel to case	—	—	6.25	°C/W
trr	Reverse recovery time	IS = 5A, dis/dt = -100A/μs	—	80	—	ns

PERFORMANCE CURVES

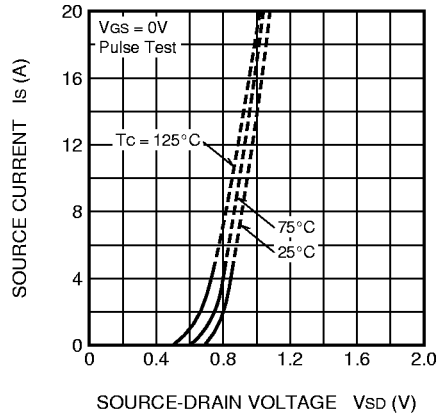




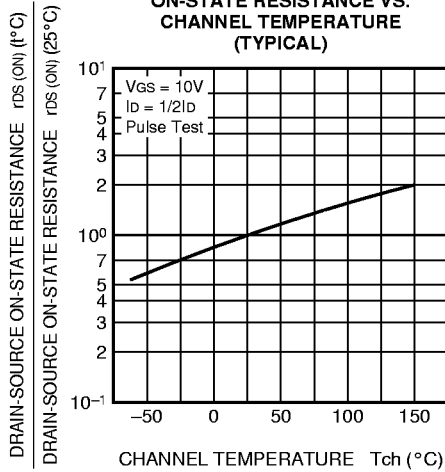
GATE-SOURCE VOLTAGE
VS. GATE CHARGE
(TYPICAL)



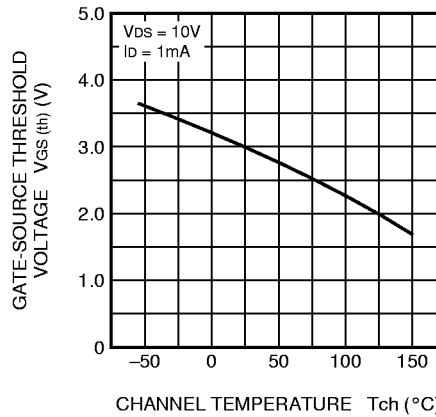
SOURCE-DRAIN DIODE
FORWARD CHARACTERISTICS
(TYPICAL)



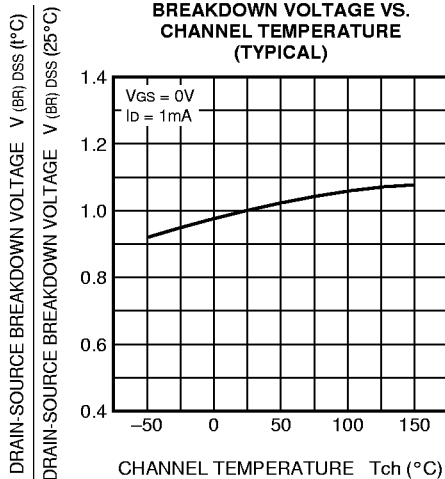
ON-STATE RESISTANCE VS.
CHANNEL TEMPERATURE
(TYPICAL)



THRESHOLD VOLTAGE VS.
CHANNEL TEMPERATURE
(TYPICAL)



BREAKDOWN VOLTAGE VS.
CHANNEL TEMPERATURE
(TYPICAL)



TRANSIENT THERMAL IMPEDANCE
CHARACTERISTICS

