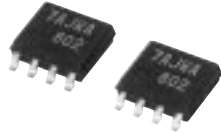


FY7AAJ-03A

HIGH-SPEED SWITCHING USE

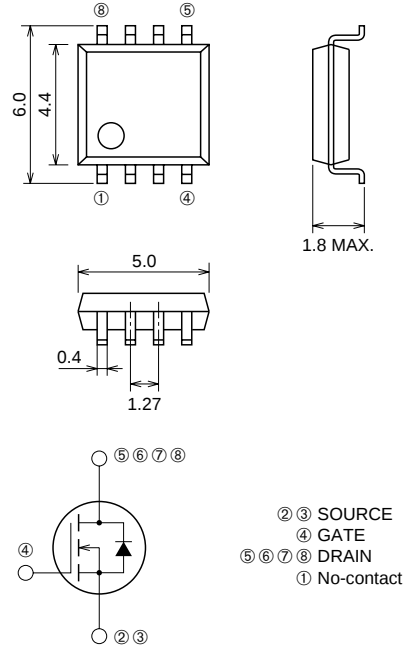
FY7AAJ-03A



- 4V DRIVE
- V_{DS} 30V
- $r_{DS(ON)}$ (MAX) 30m Ω
- I_D 7A

OUTLINE DRAWING

Dimensions in mm



SOP-8

APPLICATION

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

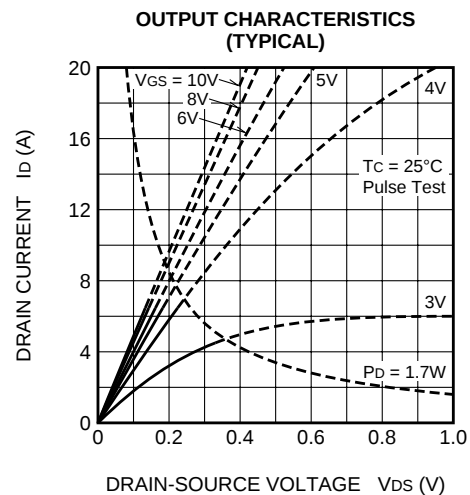
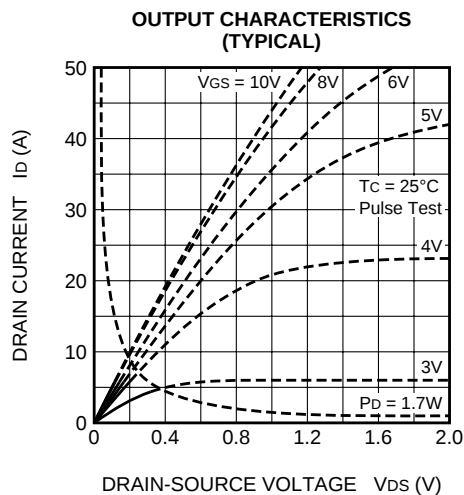
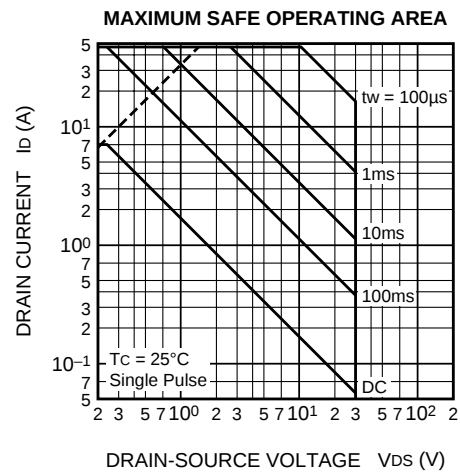
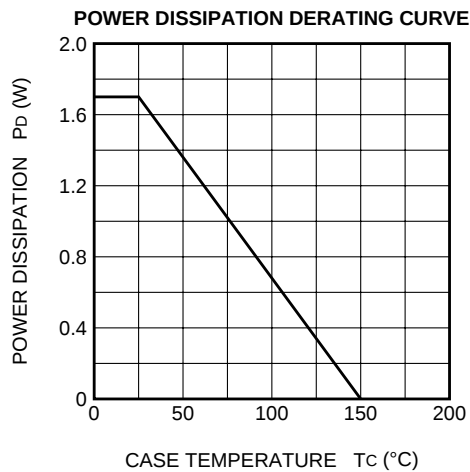
MAXIMUM RATINGS (T_c = 25°C)

Symbol	Parameter	Conditions	Ratings	Unit
V_{DS}	Drain-source voltage	$V_{GS} = 0V$	30	V
V_{GSS}	Gate-source voltage	$V_{DS} = 0V$	± 20	V
I_D	Drain current		7	A
I_{DM}	Drain current (Pulsed)		49	A
I_{DA}	Avalanche drain current (Pulsed)	$L = 10\mu H$	7	A
I_S	Source current		1.8	A
I_{SM}	Source current (Pulsed)		7.2	A
P_D	Maximum power dissipation		1.7	W
T_{ch}	Channel temperature		-55 ~ +150	°C
T_{stg}	Storage temperature		-55 ~ +150	°C
—	Weight	Typical value	0.07	g

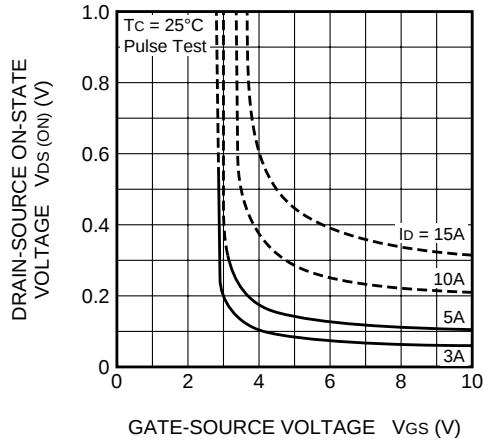
ELECTRICAL CHARACTERISTICS (Tch = 25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
V(BR)DSS	Drain-source breakdown voltage	Id = 1mA, VGS = 0V	30	—	—	V
IGSS	Gate-source leakage current	VGS = ±20V, VDS = 0V	—	—	±0.1	μA
IDSS	Drain-source leakage current	VDS = 30V, VGS = 0V	—	—	0.1	mA
VGS(th)	Gate-source threshold voltage	Id = 1mA, VDS = 10V	1.0	1.5	2.0	V
rDS(ON)	Drain-source on-state resistance	Id = 7A, VGS = 10V	—	22	30	mΩ
rDS(ON)	Drain-source on-state resistance	Id = 3.5A, VGS = 4V	—	34	55	mΩ
VDS(ON)	Drain-source on-state voltage	Id = 7A, VGS = 10V	—	0.154	0.210	V
yfs	Forward transfer admittance	Id = 7A, VDS = 10V	—	10.0	—	S
Ciss	Input capacitance	VDS = 10V, VGS = 0V, f = 1MHz	—	760	—	pF
Coss	Output capacitance		—	270	—	pF
Crss	Reverse transfer capacitance		—	125	—	pF
td(on)	Turn-on delay time	VDD = 15V, Id = 3.5A, VGS = 10V, RGEN = RGS = 50Ω	—	15	—	ns
tr	Rise time		—	25	—	ns
td(off)	Turn-off delay time		—	50	—	ns
tf	Fall time		—	40	—	ns
VSD	Source-drain voltage	IS = 1.8A, VGS = 0V	—	0.75	1.10	V
Rth(ch-a)	Thermal resistance	Channel to ambient	—	—	73.5	°C/W
trr	Reverse recovery time	IS = 1.8A, dis/dt = -50A/μs	—	40	—	ns

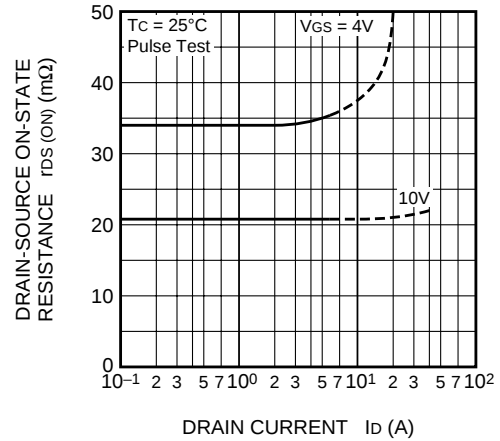
PERFORMANCE CURVES



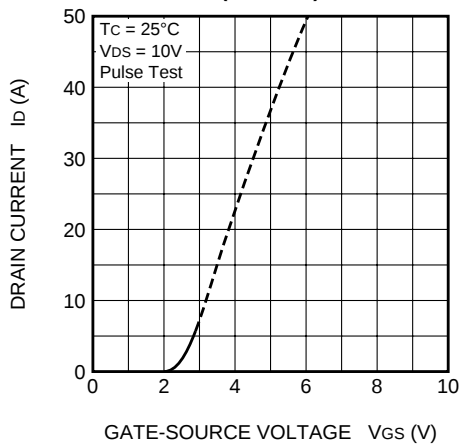
ON-STATE VOLTAGE VS.
GATE-SOURCE VOLTAGE
(TYPICAL)



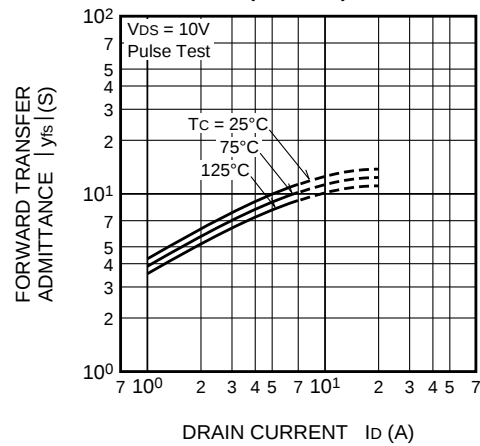
ON-STATE RESISTANCE VS.
DRAIN CURRENT
(TYPICAL)



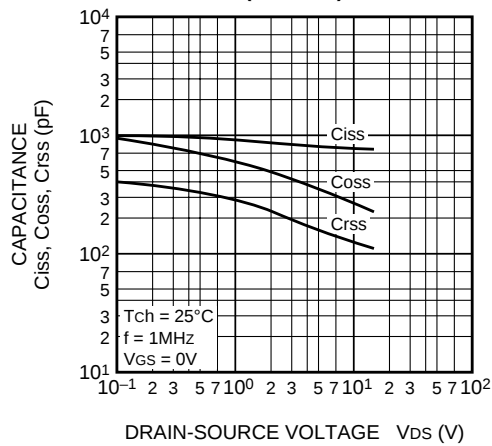
TRANSFER CHARACTERISTICS
(TYPICAL)



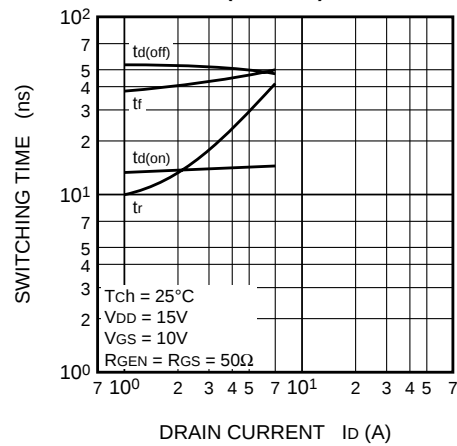
FORWARD TRANSFER ADMITTANCE
VS. DRAIN CURRENT
(TYPICAL)



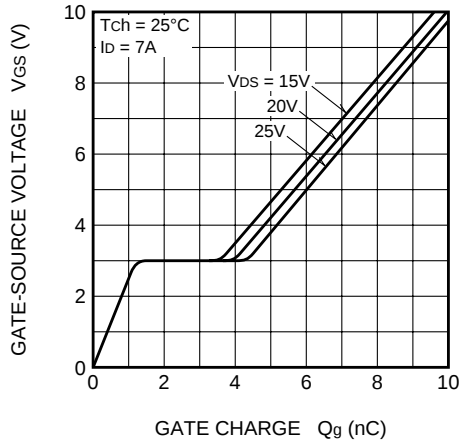
CAPACITANCE VS.
DRAIN-SOURCE VOLTAGE
(TYPICAL)



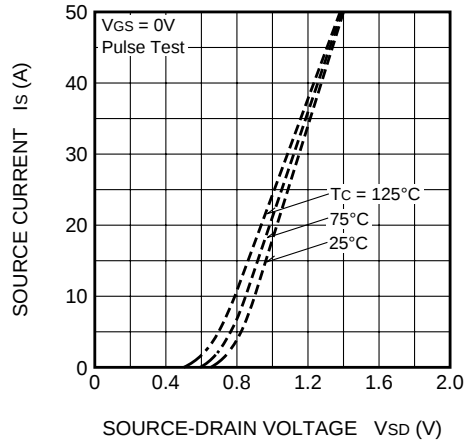
SWITCHING CHARACTERISTICS
(TYPICAL)



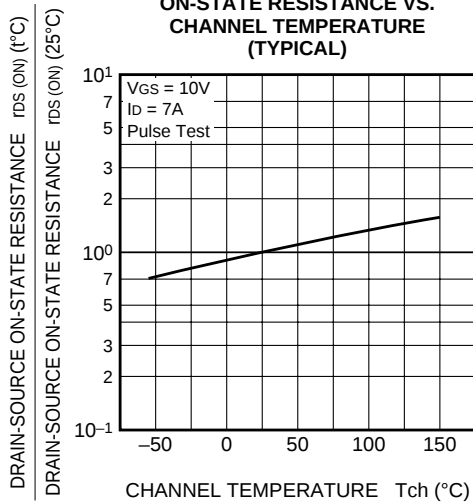
GATE-SOURCE VOLTAGE
VS. GATE CHARGE
(TYPICAL)



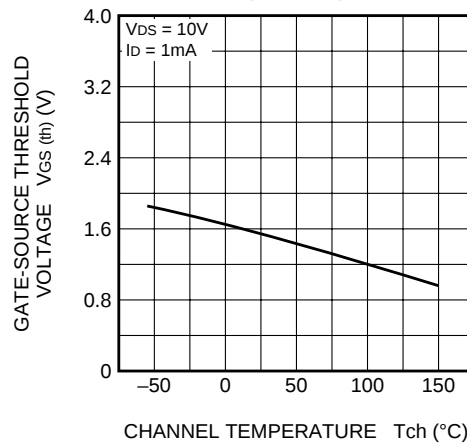
SOURCE-DRAIN DIODE
FORWARD CHARACTERISTICS
(TYPICAL)



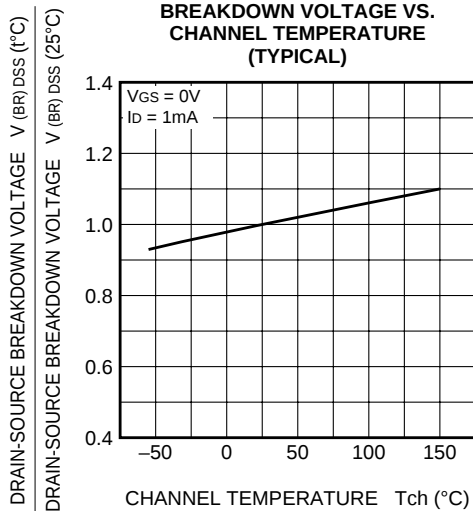
ON-STATE RESISTANCE VS.
CHANNEL TEMPERATURE
(TYPICAL)



THRESHOLD VOLTAGE VS.
CHANNEL TEMPERATURE
(TYPICAL)



BREAKDOWN VOLTAGE VS.
CHANNEL TEMPERATURE
(TYPICAL)



TRANSIENT THERMAL IMPEDANCE
CHARACTERISTICS

