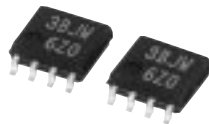


FY3ABJ-03

HIGH-SPEED SWITCHING USE

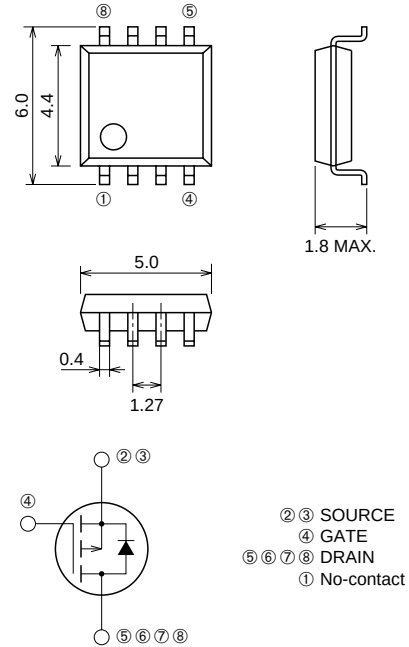
FY3ABJ-03



- 4V DRIVE
- V_{DS} -30V
- $r_{DS(ON)}$ (MAX) 70m Ω
- I_D -3A

OUTLINE DRAWING

Dimensions in mm



SOP-8

APPLICATION

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

MAXIMUM RATINGS (T_c = 25°C)

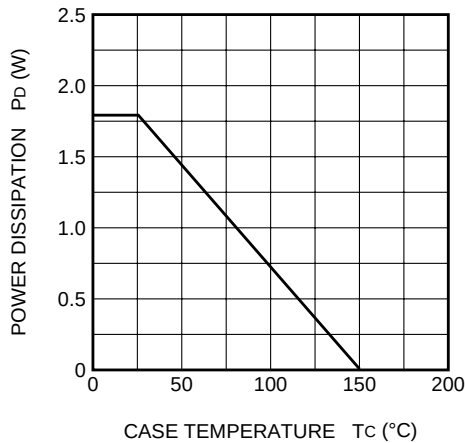
Symbol	Parameter	Conditions	Ratings	Unit
V_{DS}	Drain-source voltage	$V_{GS} = 0V$	-30	V
V_{GSS}	Gate-source voltage	$V_{DS} = 0V$	± 20	V
I_D	Drain current		-3	A
I_{DM}	Drain current (Pulsed)		-21	A
I_{DA}	Avalanche drain current (Pulsed)	$L = 10\mu H$	-3	A
I_S	Source current		-1.7	A
I_{SM}	Source current (Pulsed)		-6.8	A
P_D	Maximum power dissipation		1.8	W
T_{ch}	Channel temperature		-55 ~ +150	°C
T_{stg}	Storage temperature		-55 ~ +150	°C
—	Weight	Typical value	0.07	g

ELECTRICAL CHARACTERISTICS (T_{ch} = 25°C)

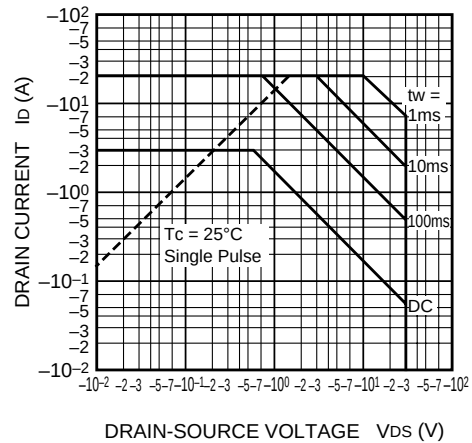
Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
V _{(BR)DSS}	Drain-source breakdown voltage	I _D = -1mA, V _{DS} = 0V	-30	—	—	V
I _{GSS}	Gate-source leakage current	V _{GS} = ±20V, V _{DS} = 0V	—	—	±0.1	μA
I _{DSS}	Drain-source leakage current	V _{DS} = -30V, V _{GS} = 0V	—	—	-0.1	mA
V _{GS(th)}	Gate-source threshold voltage	I _D = -1mA, V _{DS} = -10V	-1.5	-2.0	-2.5	V
r _{DS(ON)}	Drain-source on-state resistance	I _D = -3A, V _{GS} = -10V	—	57	70	mΩ
r _{DS(ON)}	Drain-source on-state resistance	I _D = -1.5A, V _{GS} = -4V	—	102	160	mΩ
V _{DS(ON)}	Drain-source on-state voltage	I _D = -3A, V _{GS} = -10V	—	-0.17	-0.21	V
y _{fs}	Forward transfer admittance	I _D = -3A, V _{DS} = -10V	—	8	—	S
C _{iss}	Input capacitance	V _{DS} = -10V, V _{GS} = 0V, f = 1MHz	—	2100	—	pF
C _{oss}	Output capacitance		—	340	—	pF
C _{rss}	Reverse transfer capacitance		—	195	—	pF
t _{d(on)}	Turn-on delay time	V _{DD} = -15V, I _D = -1.5A, V _{GS} = -10V, R _{GEN} = R _{GS} = 50Ω	—	20	—	ns
t _r	Rise time		—	20	—	ns
t _{d(off)}	Turn-off delay time		—	135	—	ns
t _f	Fall time		—	50	—	ns
V _{SD}	Source-drain voltage	I _S = -1.7A, V _{GS} = 0V	—	-0.77	-1.20	V
R _{th(ch-a)}	Thermal resistance	Channel to ambient	—	—	69.4	°C/W
t _{rr}	Reverse recovery time	I _S = -1.7A, di _S /dt = 50A/μs	—	70	—	ns

PERFORMANCE CURVES

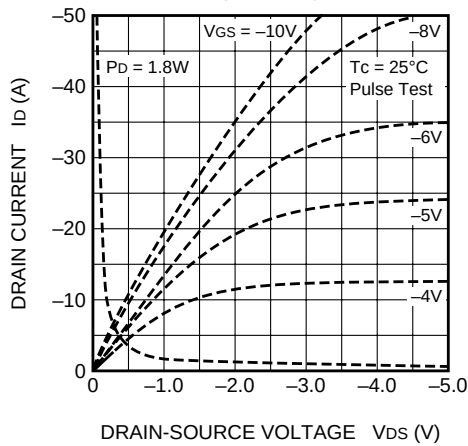
POWER DISSIPATION DERATING CURVE



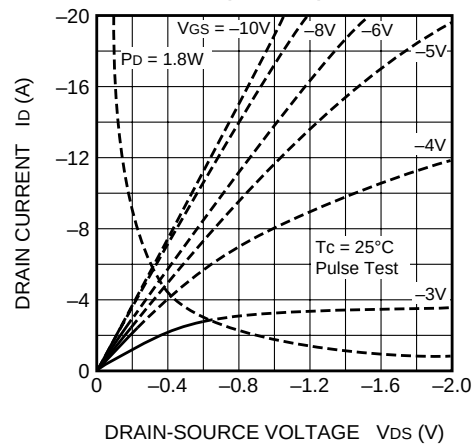
MAXIMUM SAFE OPERATING AREA

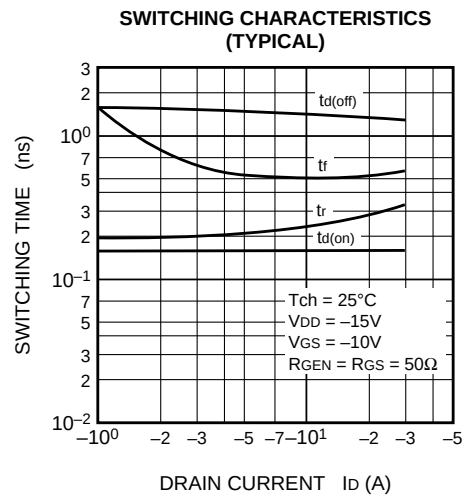
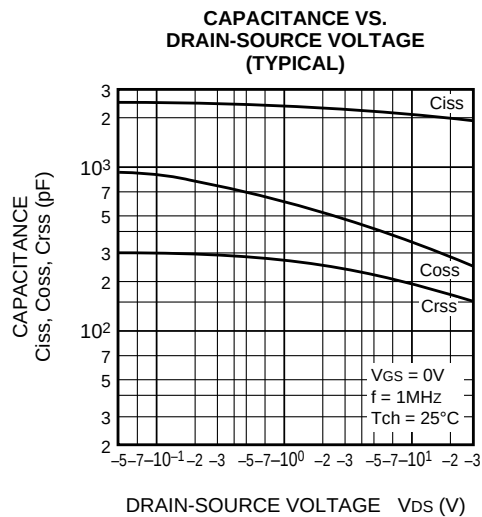
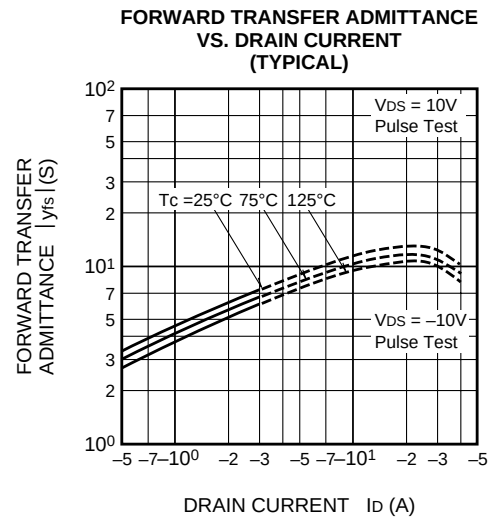
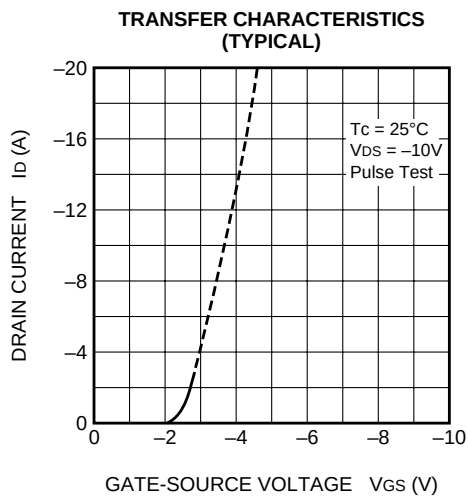
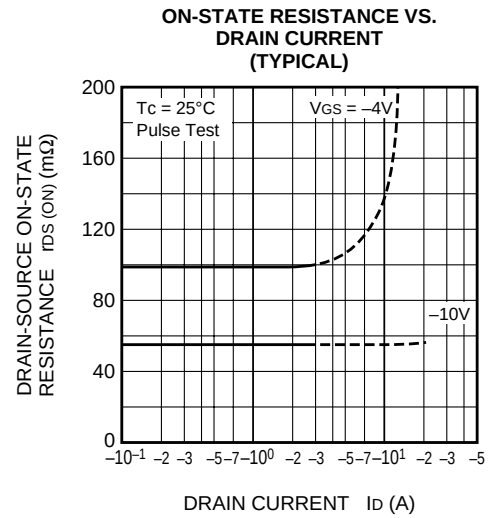
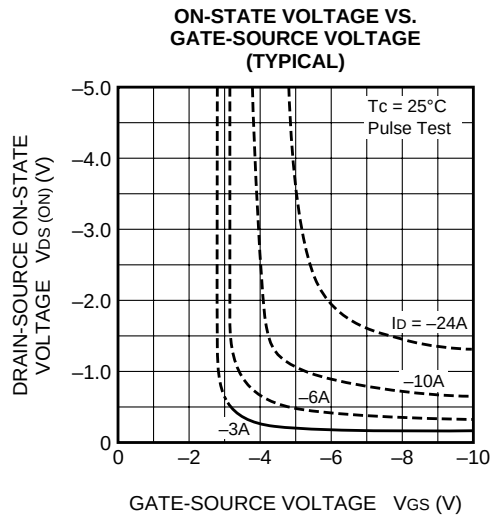


OUTPUT CHARACTERISTICS (TYPICAL)

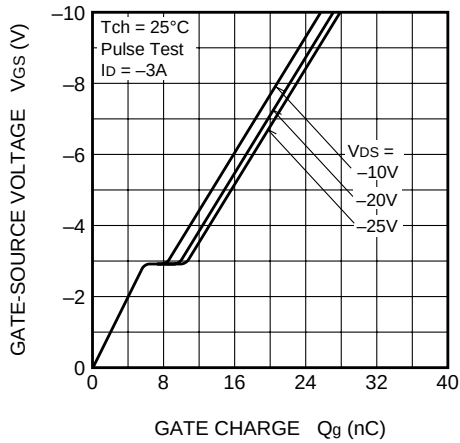


OUTPUT CHARACTERISTICS (TYPICAL)

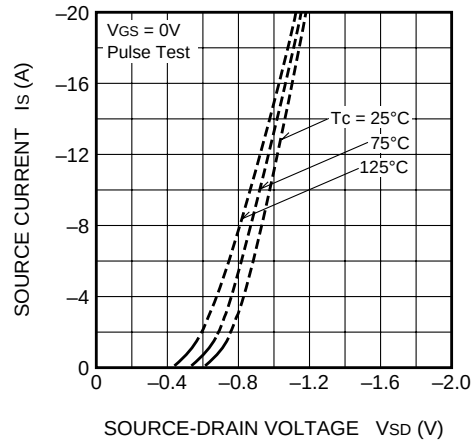




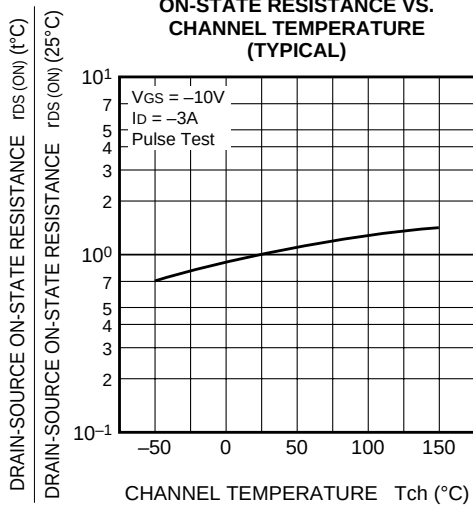
GATE-SOURCE VOLTAGE
VS. GATE CHARGE
(TYPICAL)



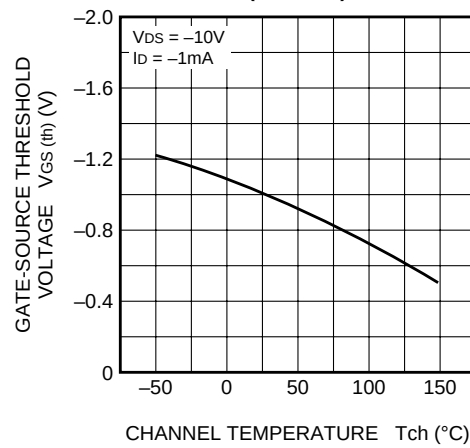
SOURCE-DRAIN DIODE
FORWARD CHARACTERISTICS
(TYPICAL)



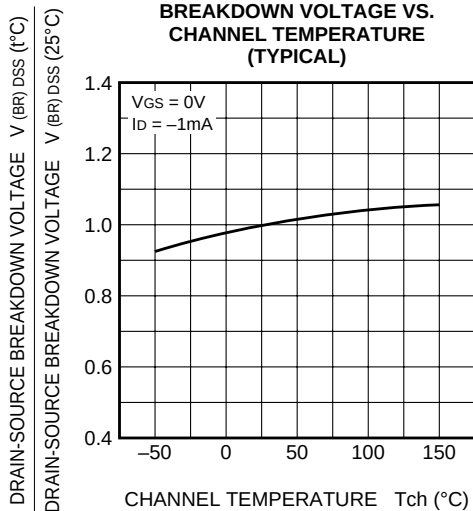
ON-STATE RESISTANCE VS.
CHANNEL TEMPERATURE
(TYPICAL)



THRESHOLD VOLTAGE VS.
CHANNEL TEMPERATURE
(TYPICAL)



BREAKDOWN VOLTAGE VS.
CHANNEL TEMPERATURE
(TYPICAL)



TRANSIENT THERMAL IMPEDANCE
CHARACTERISTICS

