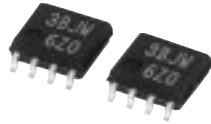


MITSUBISHI Pch POWER MOSFET

# FY3ABJ-03

HIGH-SPEED SWITCHING USE

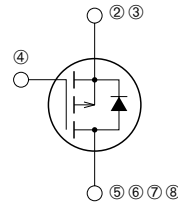
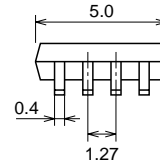
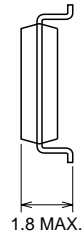
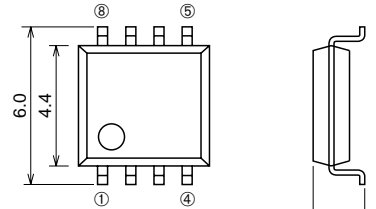
## FY3ABJ-03



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

## OUTLINE DRAWING

Dimensions in mm



- ② ③ SOURCE
- ④ GATE
- ⑤ ⑥ ⑦ ⑧ DRAIN
- ① No-contact

SOP-8

## APPLICATION

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

## MAXIMUM RATINGS (T<sub>c</sub> = 25°C)

Symbol	Parameter	Conditions	Ratings	Unit
$V_{DSS}$	Drain-source voltage	$V_{GS} = 0V$	-30	V
$V_{GSS}$	Gate-source voltage	$V_{DS} = 0V$	$\pm 20$	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

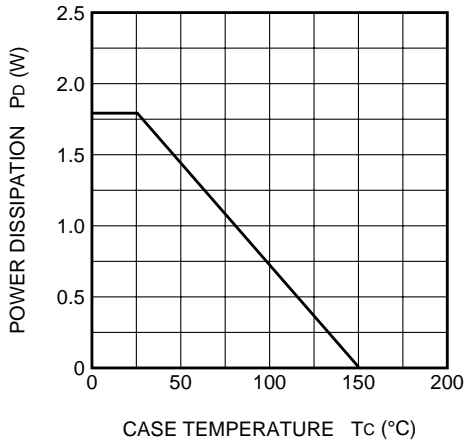
Sep.1998

**ELECTRICAL CHARACTERISTICS** (Tch = 25°C)

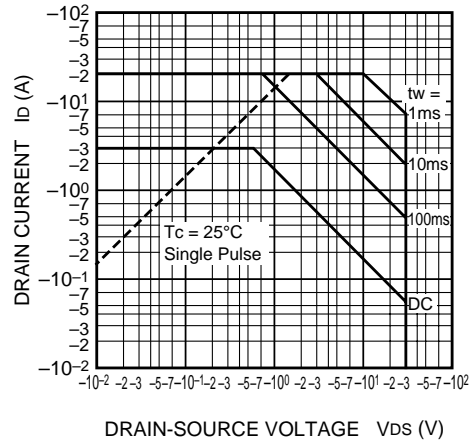
Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
V(BR)DSS	Drain-source breakdown voltage	Id = -1mA, VDs = 0V	-30	—	—	V
IGSS	Gate-source leakage current	VGS = ±20V, VDS = 0V	—	—	±0.1	μA
IDSS	Drain-source leakage current	VDS = -30V, VGS = 0V	—	—	-0.1	mA
VGS(th)	Gate-source threshold voltage	Id = -1mA, VDS = -10V	-1.5	-2.0	-2.5	V
rDS(ON)	Drain-source on-state resistance	Id = -3A, VGS = -10V	—	57	70	mΩ
rDS(ON)	Drain-source on-state resistance	Id = -1.5A, VGS = -4V	—	102	160	mΩ
VDS(ON)	Drain-source on-state voltage	Id = -3A, VGS = -10V	—	-0.17	-0.21	V
yfs	Forward transfer admittance	Id = -3A, VDS = -10V	—	8	—	S
Ciss	Input capacitance	VDS = -10V, VGS = 0V, f = 1MHz	—	2100	—	pF
Coss	Output capacitance		—	340	—	pF
Crss	Reverse transfer capacitance		—	195	—	pF
td(on)	Turn-on delay time	VDD = -15V, Id = -1.5A, VGS = -10V, RGEN = RGS = 50Ω	—	20	—	ns
tr	Rise time		—	20	—	ns
td(off)	Turn-off delay time		—	135	—	ns
tf	Fall time		—	50	—	ns
VSD	Source-drain voltage	IS = -1.7A, VGS = 0V	—	-0.77	-1.20	V
Rth(ch-a)	Thermal resistance	Channel to ambient	—	—	69.4	°C/W
trr	Reverse recovery time	IS = -1.7A, dis/dt = 50A/μs	—	70	—	ns

**PERFORMANCE CURVES**

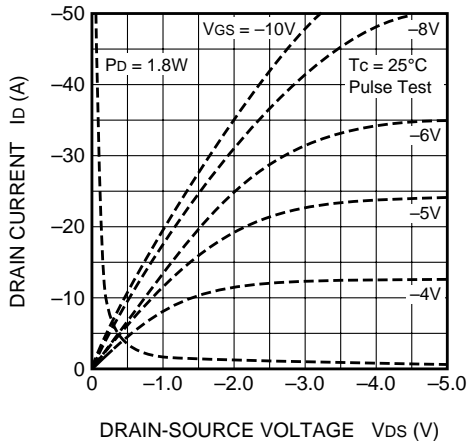
**POWER DISSIPATION DERATING CURVE**



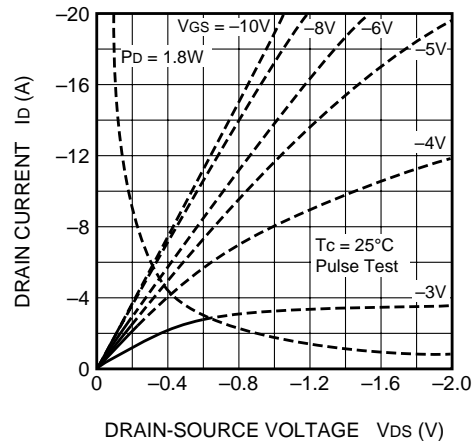
**MAXIMUM SAFE OPERATING AREA**



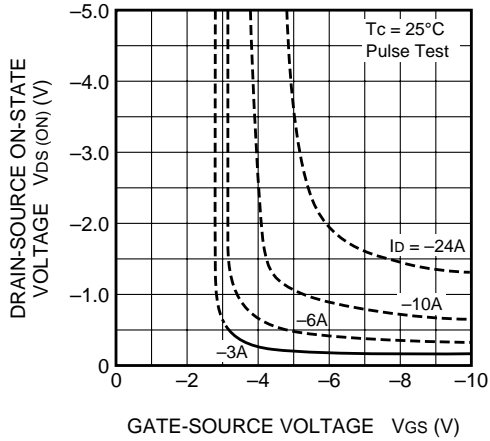
**OUTPUT CHARACTERISTICS (TYPICAL)**



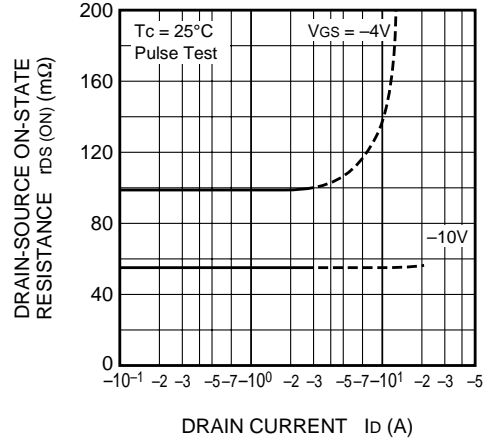
**OUTPUT CHARACTERISTICS (TYPICAL)**



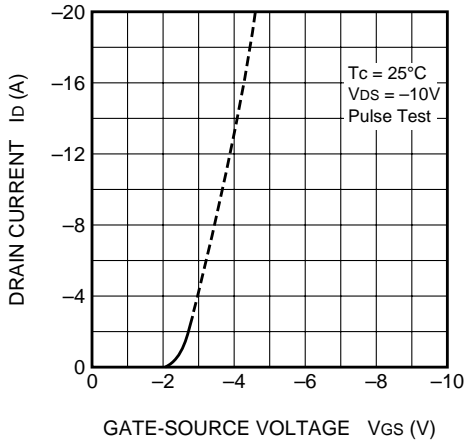
ON-STATE VOLTAGE VS. GATE-SOURCE VOLTAGE (TYPICAL)



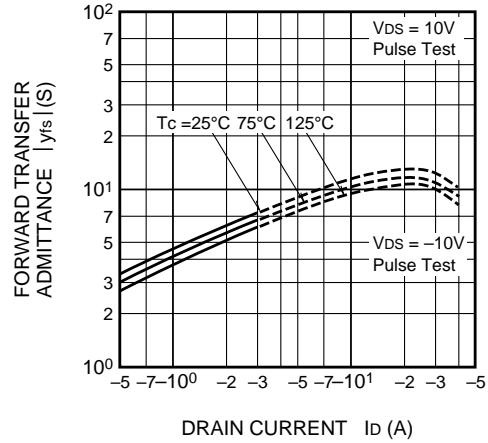
ON-STATE RESISTANCE VS. DRAIN CURRENT (TYPICAL)



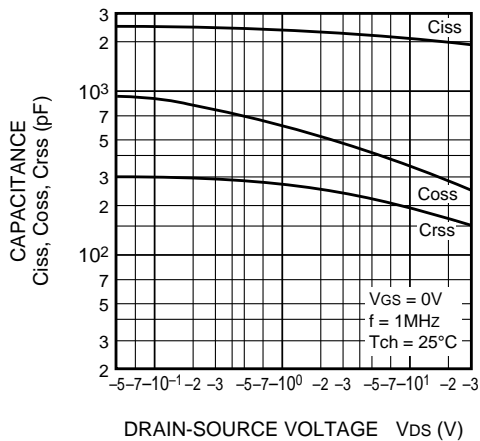
TRANSFER CHARACTERISTICS (TYPICAL)



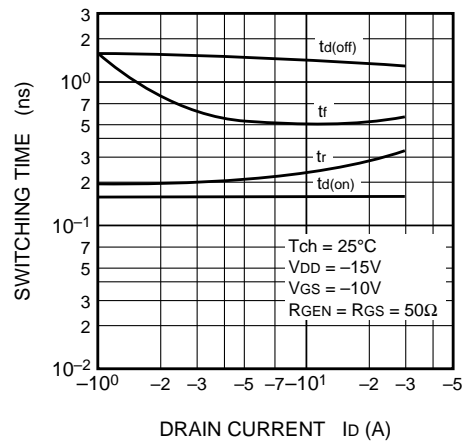
FORWARD TRANSFER ADMITTANCE VS. DRAIN CURRENT (TYPICAL)



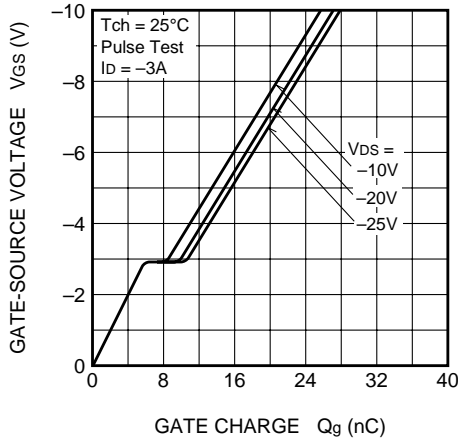
CAPACITANCE VS. DRAIN-SOURCE VOLTAGE (TYPICAL)



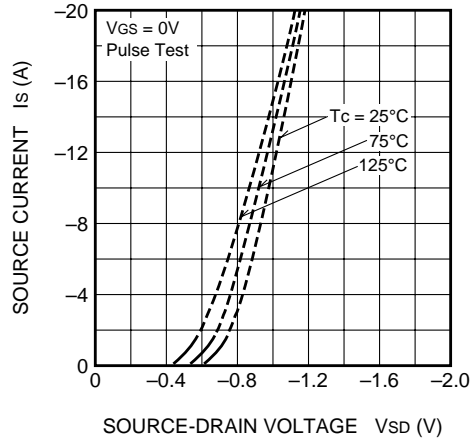
SWITCHING CHARACTERISTICS (TYPICAL)



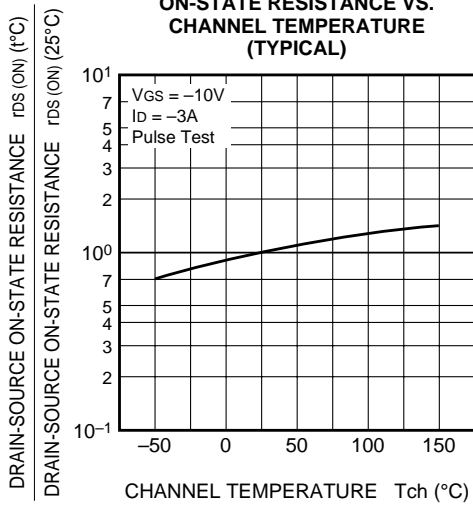
**GATE-SOURCE VOLTAGE VS. GATE CHARGE (TYPICAL)**



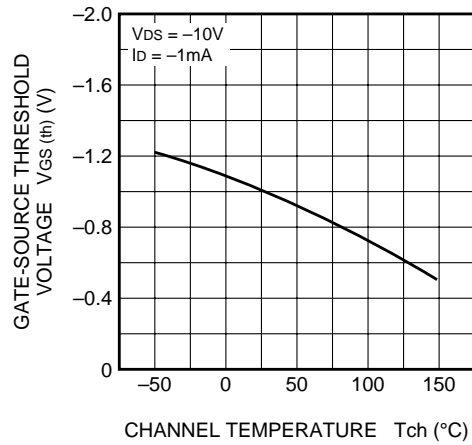
**SOURCE-DRAIN DIODE FORWARD CHARACTERISTICS (TYPICAL)**



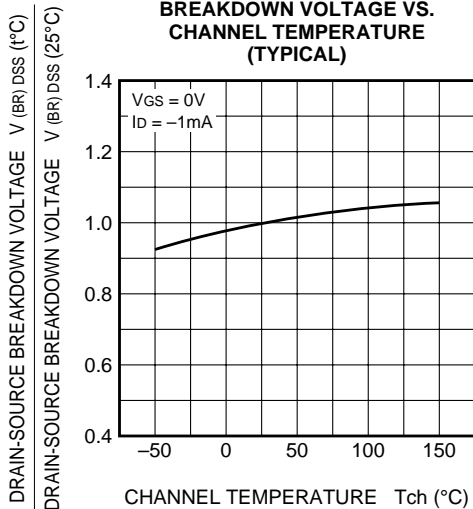
**ON-STATE RESISTANCE VS. CHANNEL TEMPERATURE (TYPICAL)**



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



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



**TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS**

