



# FX6ASJ-2

## High-Speed Switching Use Pch Power MOS FET

REJ03G1438-0200

(Previous: MEJ02G0279-0101)

Rev.2.00

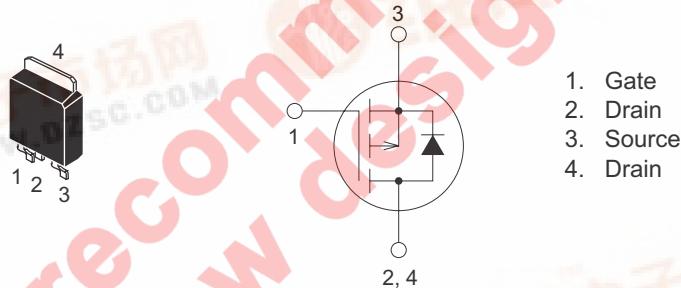
Aug 07, 2006

### Features

- Drive voltage : 4 V
- $V_{DSS}$  : -100 V
- $r_{DS(ON)}(\text{max})$  : 0.58  $\Omega$
- $I_D$  : -6 A
- Integrated Fast Recovery Diode (TYP.) : 80 ns

### Outline

RENESAS Package code: PRSS0004ZA-A  
(Package name: MP-3A)



### Applications

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

### Maximum Ratings

(Tc = 25°C)

Parameter	Symbol	Ratings	Unit	Conditions
Drain-source voltage	$V_{DSS}$	-100	V	$V_{GS} = 0$ V
Gate-source voltage	$V_{GSS}$	$\pm 20$	V	$V_{DS} = 0$ V
Drain current	$I_D$	-6	A	
Drain current (Pulsed)	$I_{DM}$	-24	A	
Avalanche drain current (Pulsed)	$I_{DA}$	-6	A	$L = 100$ $\mu$ H
Source current	$I_S$	-6	A	
Source current (Pulsed)	$I_{SM}$	-24	A	
Maximum power dissipation	$P_D$	30	W	
Channel temperature	$T_{ch}$	-55 to +150	°C	
Storage temperature	$T_{stg}$	-55 to +150	°C	
Mass	—	0.32	g	Typical value

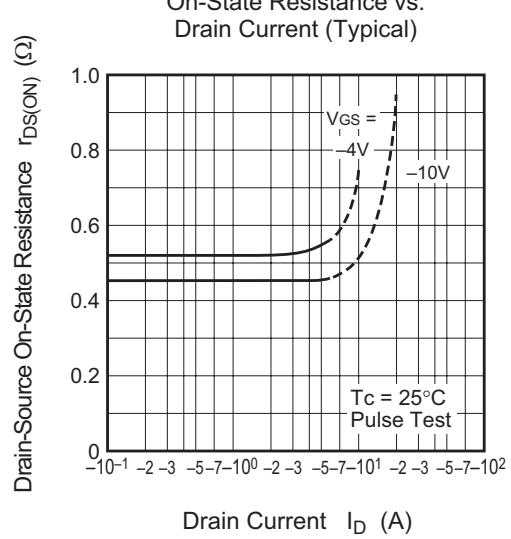
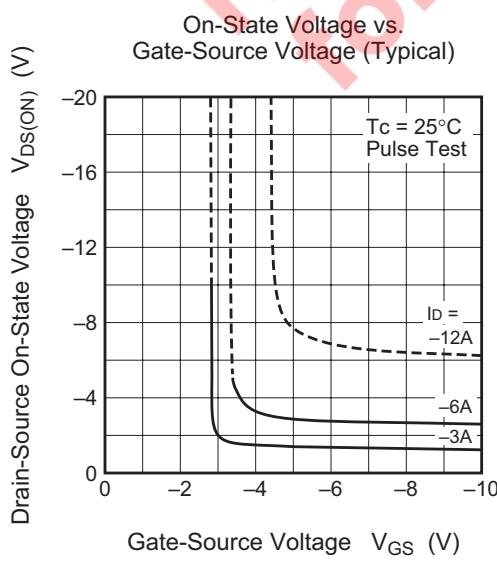
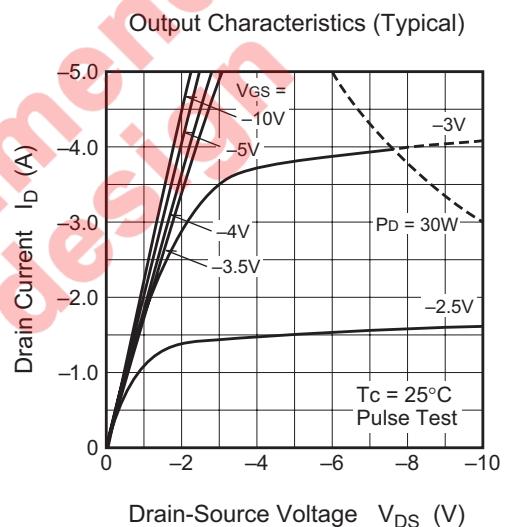
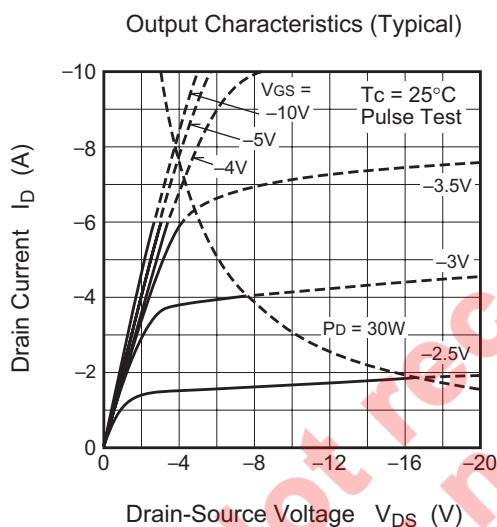
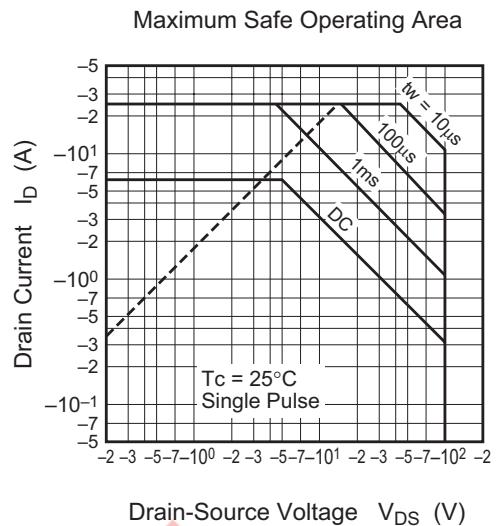
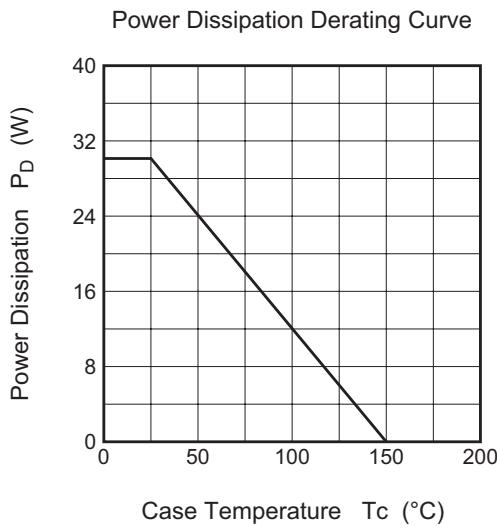
## Electrical Characteristics

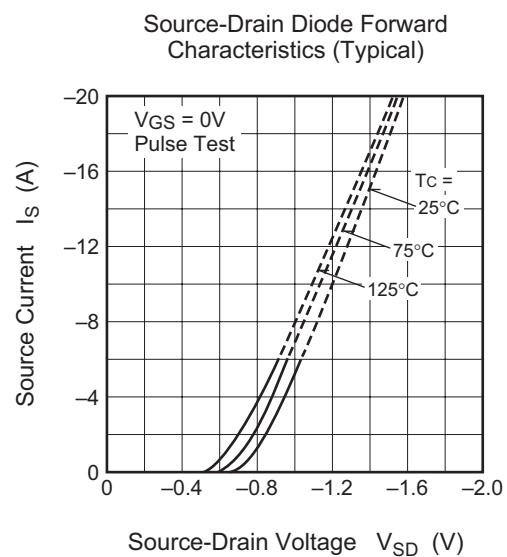
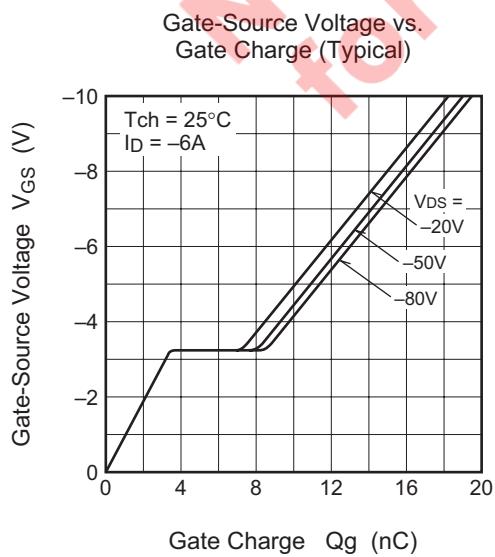
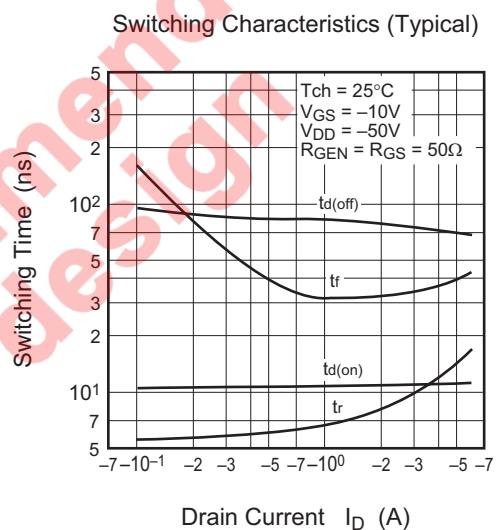
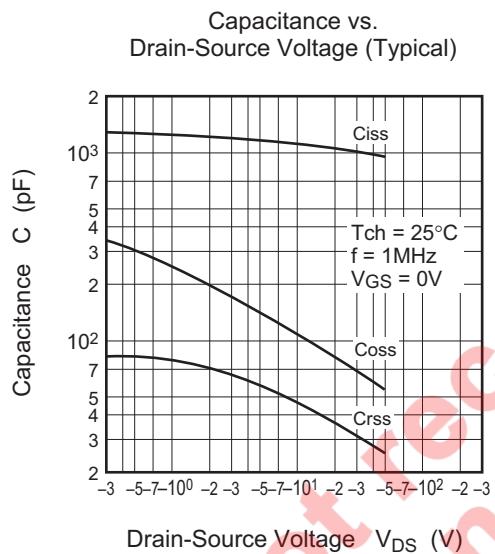
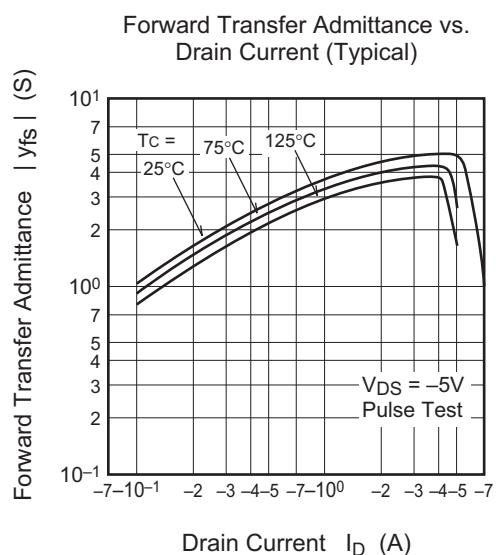
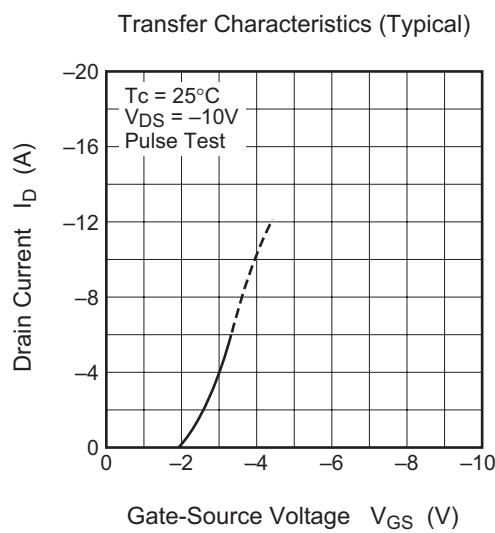
(Tch = 25°C)

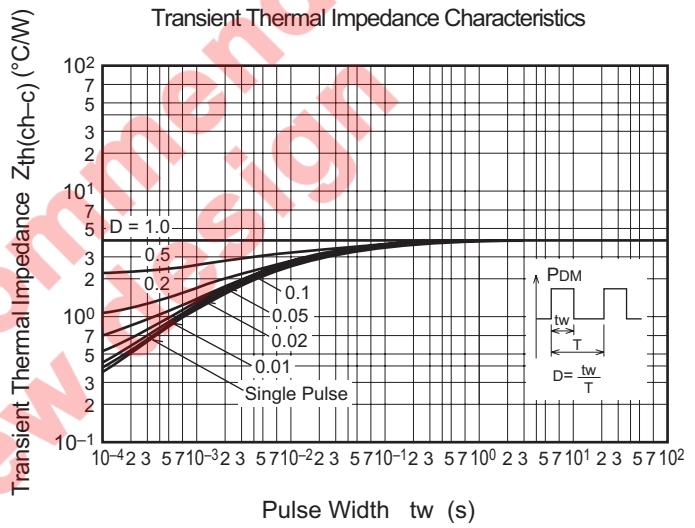
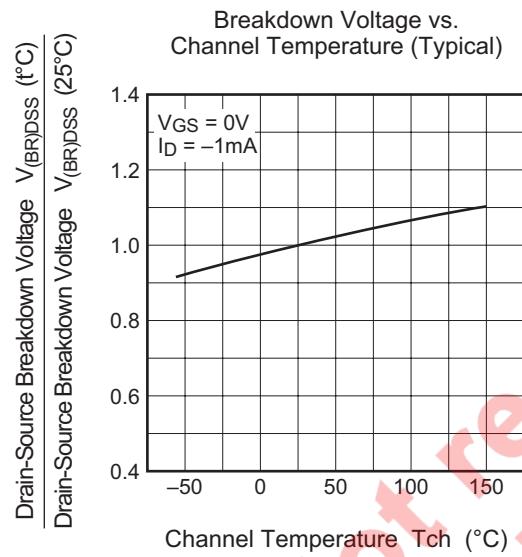
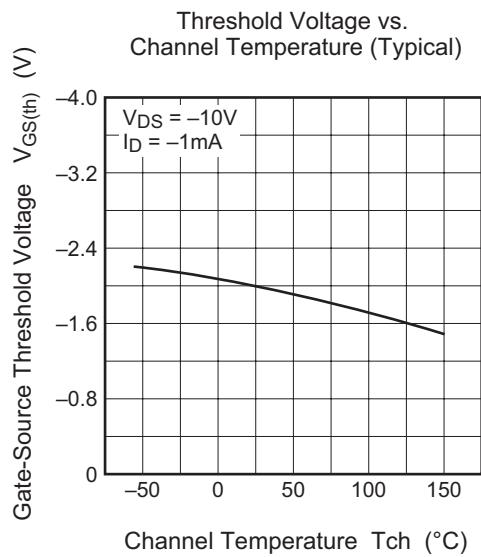
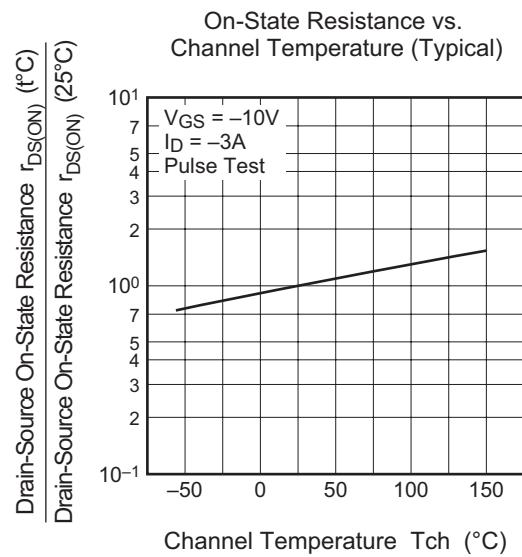
Parameter	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain-source breakdown voltage	V <sub>(BR)DSS</sub>	-100	—	—	V	I <sub>D</sub> = -1 mA, V <sub>GS</sub> = 0 V
Gate-source leakage current	I <sub>GSS</sub>	—	—	±0.1	µA	V <sub>GS</sub> = ±20 V, V <sub>DS</sub> = 0 V
Drain-source leakage current	I <sub>DSS</sub>	—	—	-0.1	mA	V <sub>DS</sub> = -100 V, V <sub>GS</sub> = 0 V
Gate-source threshold voltage	V <sub>GS(th)</sub>	-1.3	-1.8	-2.3	V	I <sub>D</sub> = -1 mA, V <sub>DS</sub> = -10 V
Drain-source on-state resistance	r <sub>DS(ON)</sub>	—	0.46	0.58	Ω	I <sub>D</sub> = -3 A, V <sub>GS</sub> = -10 V
Drain-source on-state resistance	r <sub>DS(ON)</sub>	—	0.55	0.72	Ω	I <sub>D</sub> = -3 A, V <sub>GS</sub> = -4 V
Drain-source on-state voltage	V <sub>DS(ON)</sub>	—	-1.38	-1.74	V	I <sub>D</sub> = -3 A, V <sub>GS</sub> = -10 V
Forward transfer admittance	y <sub>fs</sub>	—	4.7	—	S	I <sub>D</sub> = -3 A, V <sub>DS</sub> = -5 V
Input capacitance	C <sub>iss</sub>	—	1110	—	pF	V <sub>DS</sub> = -10 V, V <sub>GS</sub> = 0 V, f = 1MHz
Output capacitance	C <sub>oss</sub>	—	108	—	pF	
Reverse transfer capacitance	C <sub>rss</sub>	—	44	—	pF	
Turn-on delay time	t <sub>d(on)</sub>	—	9	—	ns	V <sub>DD</sub> = -50 V, I <sub>D</sub> = -3 A, V <sub>GS</sub> = -10 V, R <sub>GEN</sub> = R <sub>GS</sub> = 50 Ω
Rise time	t <sub>r</sub>	—	8	—	ns	
Turn-off delay time	t <sub>d(off)</sub>	—	72	—	ns	
Fall time	t <sub>f</sub>	—	33	—	ns	
Source-drain voltage	V <sub>SD</sub>	—	-1.0	-1.5	V	I <sub>S</sub> = -3 A, V <sub>GS</sub> = 0 V
Thermal resistance	R <sub>th(ch-c)</sub>	—	—	4.17	°C/W	Channel to case
Reverse recovery time	t <sub>rr</sub>	—	80	—	ns	I <sub>S</sub> = -6 A, d <sub>is</sub> /d <sub>t</sub> = 100 A/µs

Not recommended  
for new design

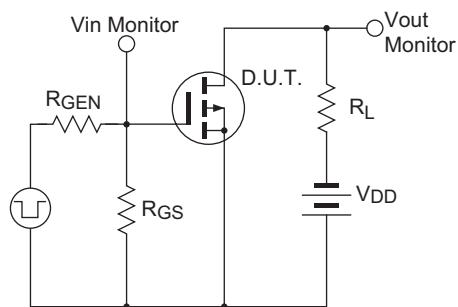
## Performance Curves



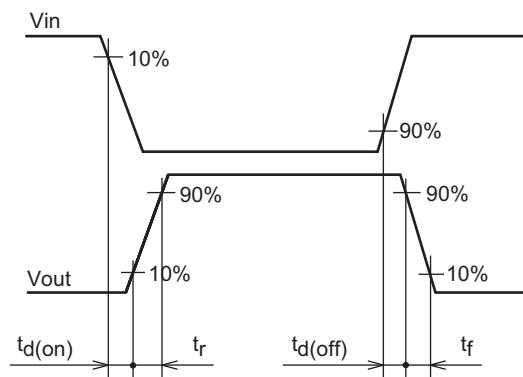




Switching Time Measurement Circuit

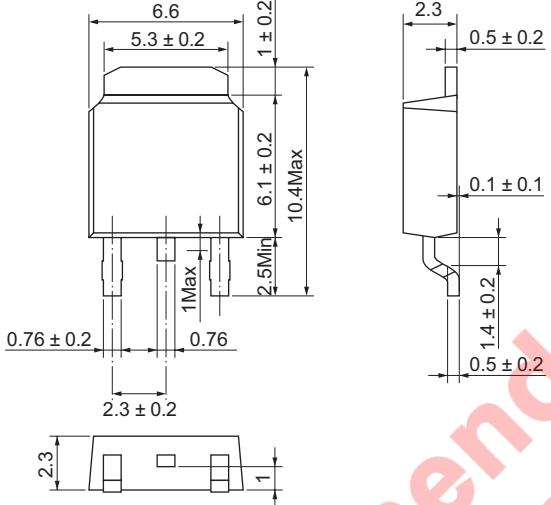


Switching Waveform



## Package Dimensions

Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]	Unit: mm
MP-3A	SC-63	PRSS0004ZA-A	—	0.32g	



## Order Code

Lead form	Standard packing	Quantity	Standard order code	Standard order code example
Surface-mounted type	Taping	3000	Type name – T +Direction (1 or 2) +3	FX6ASJ-2-T13
Surface-mounted type	Plastic Magazine (Tube)	75	Type name	FX6ASJ-2

Note: Please confirm the specification about the shipping in detail.

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