

RJJ0621DPP

P Channel Power MOS FET
High Speed Switching

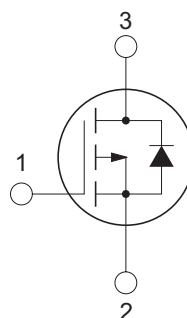
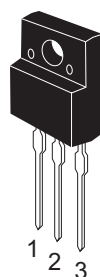
REJ03G1624-0200
Rev.2.00
Jun 16, 2008

Features

- V_{DSS} : -60 V
- $R_{DS(on)}$: 56 m Ω (MAX)
- I_D : -25 A
- Lead Mount Type (TO-220FN)

Outline

RENESAS Package code: PRSS0003AB-A
(Package name : TO-220FN)



1. Gate
2. Drain
3. Source

Application

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

Absolute Maximum Ratings

($T_c = 25^\circ\text{C}$)

Item	Symbol	Ratings	Unit	Conditions
Drain to source voltage	V_{DSS}	-60	V	$V_{GS} = 0\text{ V}$
Gate to source voltage	V_{GSS}	+10/-20	V	$V_{DS} = 0\text{ V}$
Drain current (DC)	I_D	-25	A	
Drain current (Pulsed)*1	$I_{D(pulse)}$	-50	A	
Avalanche current	I_{AP}	-25	A	$L = 100\ \mu\text{H}$
Channel dissipation	P_{ch}	35	W	
Channel to case thermal impedance	θ_{ch-c}	3.57	$^\circ\text{C/W}$	
Channel temperature	T_{ch}	-55 to +150	$^\circ\text{C}$	
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$	

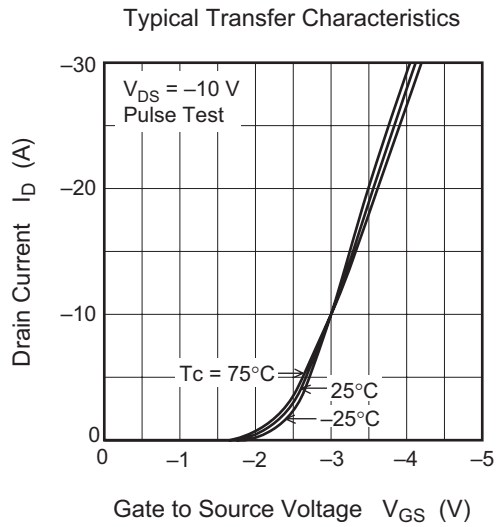
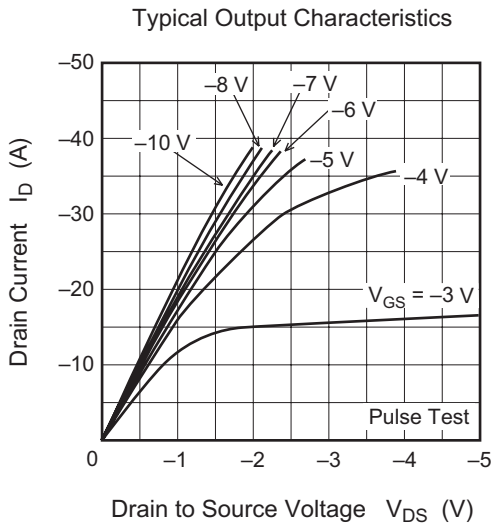
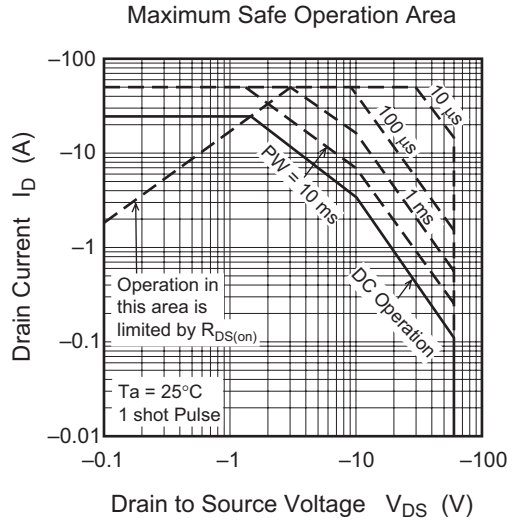
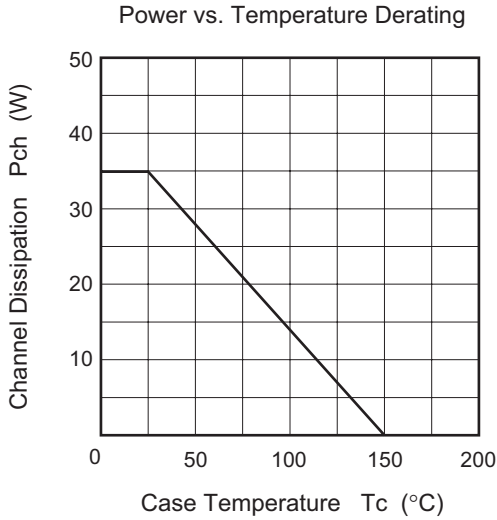
Note: 1. Pulse width limited by safe operating area.

Electrical Characteristics

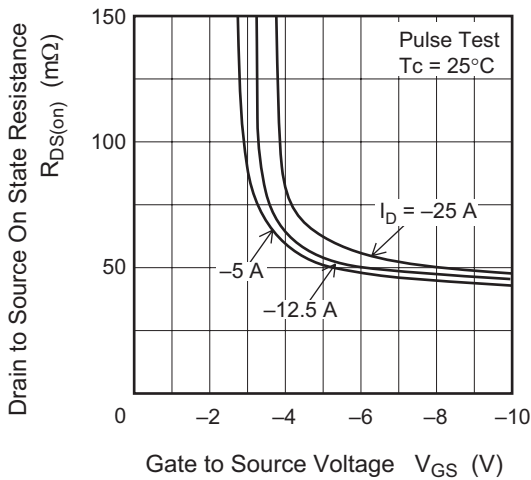
(T_c = 25°C)

Item	Symbol	Min.	Typ.	Max.	Unit	Conditions
Drain to source breakdown voltage	V _{(BR)DSS}	-60	—	—	V	I _D = -10 mA, V _{GS} = 0 V
Drain to source leakage current	I _{DSS}	—	—	-1	μA	V _{DS} = -60 V, V _{GS} = 0 V
Gate to source leak current	I _{GSS}	—	—	0.1	μA	V _{GS} = +10 V, V _{DS} = 0 V
Gate to source leak current	I _{GSS}	—	—	-0.1	μA	V _{GS} = -20 V, V _{DS} = 0 V
Gate to source cutoff voltage	V _{GS(off)}	-1.0	-1.7	-2.5	V	I _D = -1 mA, V _{DS} = -10 V
Static drain to source on state resistance	R _{DS(on)}	—	45	56	mΩ	I _D = -12.5 A, V _{GS} = -10 V
		—	65	95	mΩ	I _D = -12.5 A, V _{GS} = -4.5 V
Input capacitance	C _{iss}	—	1550	—	pF	V _{DS} = -10 V V _{GS} = 0 V f = 1 MHz
Output capacitance	C _{oss}	—	190	—	pF	
Reverse transfer capacitance	C _{rss}	—	100	—	pF	
Turn-on delay time	t _{d(on)}	—	15	—	ns	V _{DD} = -30 V I _D = -12.5 A
Rise time	t _r	—	25	—	ns	
Turn-off delay time	t _{d(off)}	—	100	—	ns	V _{GS} = -10 V R _G = 25 Ω
Fall time	t _f	—	50	—	ns	
Body-drain diode forward voltage	V _{DF}	—	-0.9	-1.5	V	I _F = -12.5 A, V _{GS} = 0 V

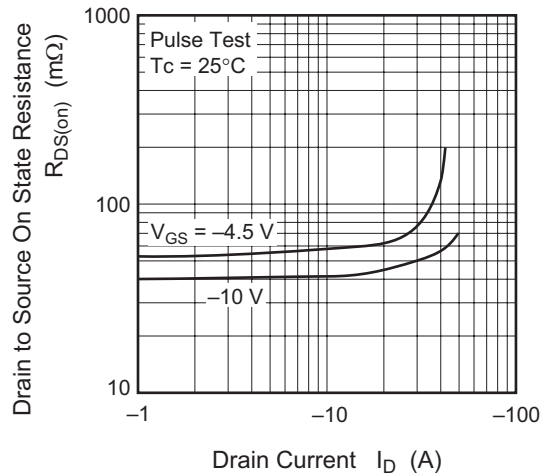
Main Characteristics



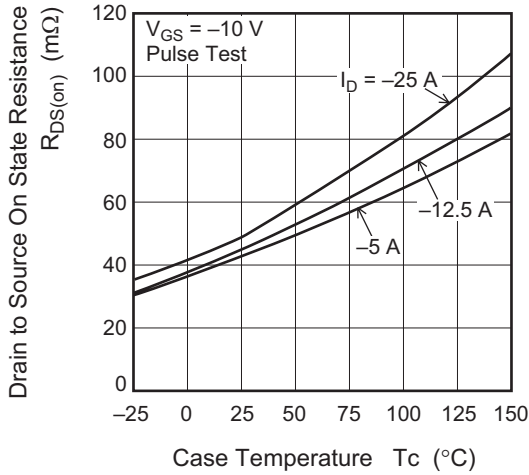
Static Drain to Source on State Resistance vs. Gate to Source Voltage



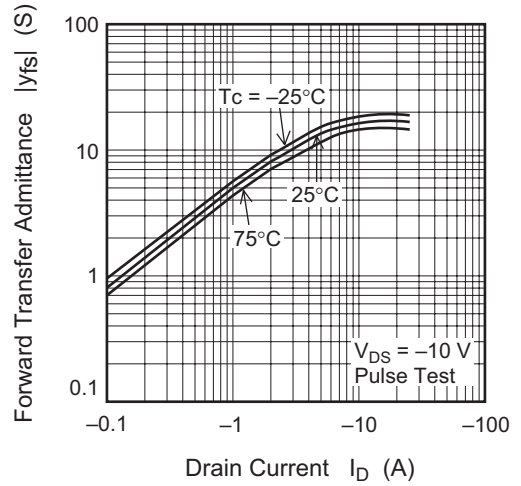
Static Drain to Source on State Resistance vs. Drain Current



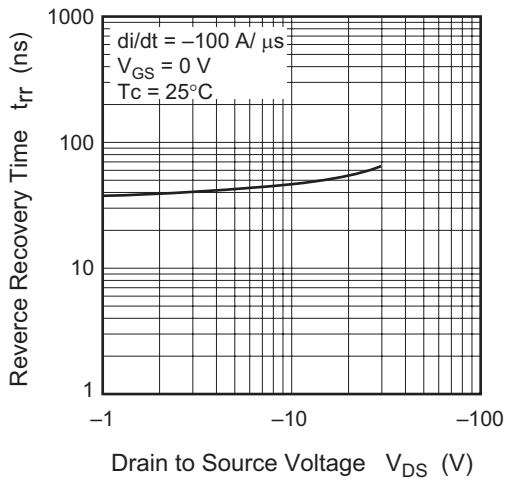
Drain to Source on State Resistance vs. Temperature



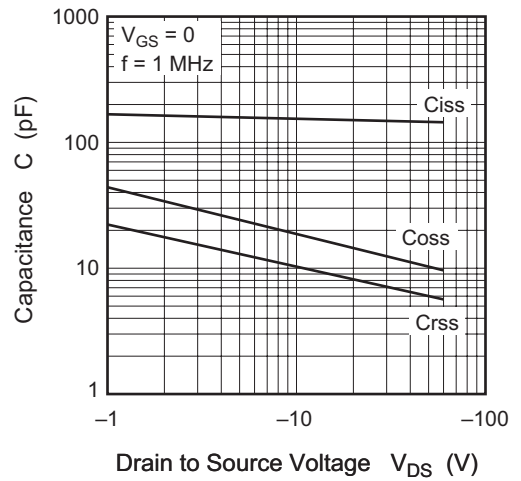
Forward Transfer Admittance vs. Drain Current



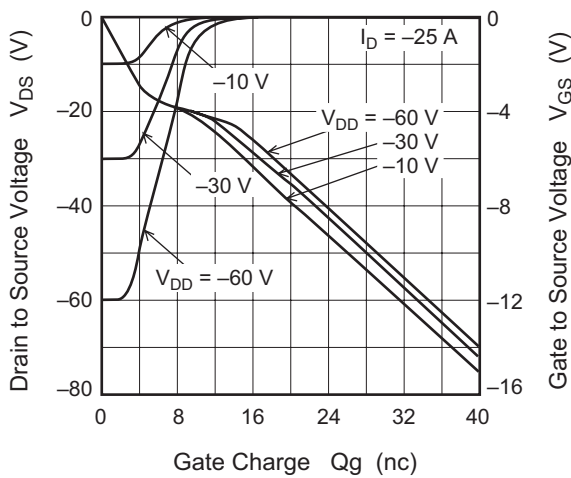
Body-Drain Diode Reverse Recovery Time



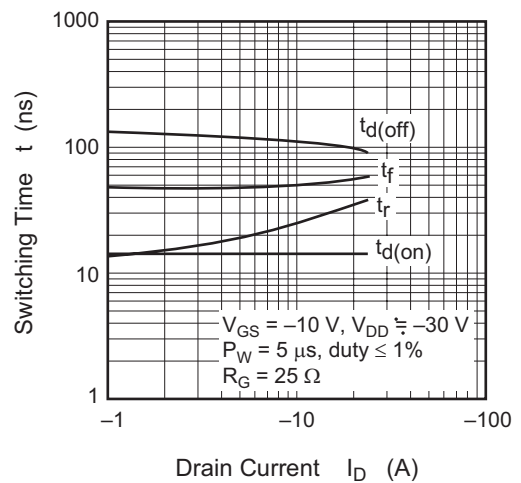
Typical Capacitance vs. Drain to Source Voltage



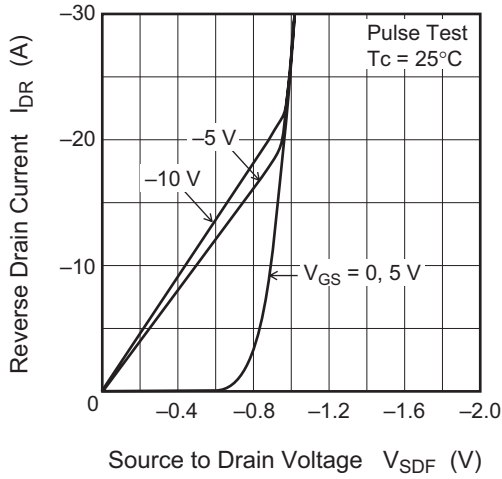
Dynamic Input Characteristics



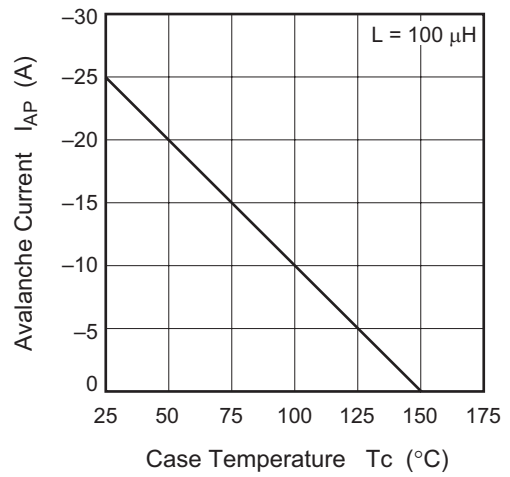
Switching Characteristics



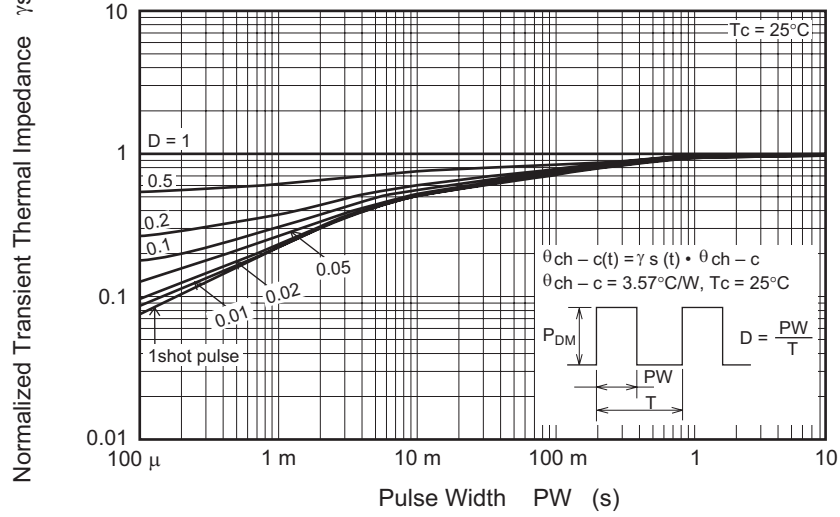
Reverse Drain Current vs. Source to Drain Voltage



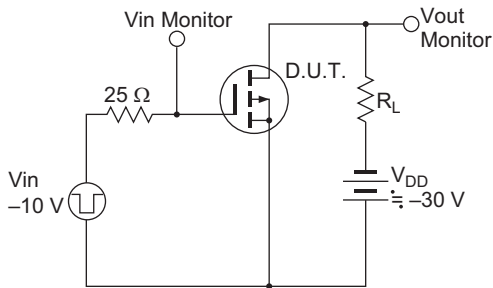
Avalanche Current vs. Case Temperature



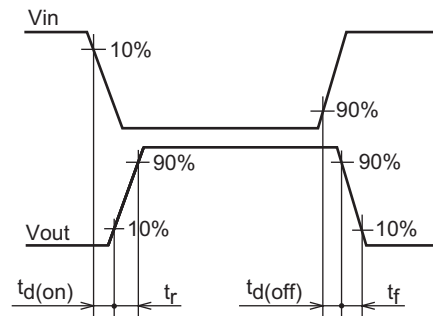
Normalized Transient Thermal Impedance vs. Pulse Width



Switching Time Test Circuit



Switching Time Waveform



Notes:

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