To our customers,

Old Company Name in Catalogs and Other Documents

On April 1st, 2010, NEC Electronics Corporation merged with Renesas Technology Corporation, and Renesas Electronics Corporation took over all the business of both companies. Therefore, although the old company name remains in this document, it is a valid Renesas Electronics document. We appreciate your understanding.

Renesas Electronics website: http://www.renesas.com

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (http://www.renesas.com)

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RJJ0621DPP

P Channel Power MOS FET
High Speed Switching

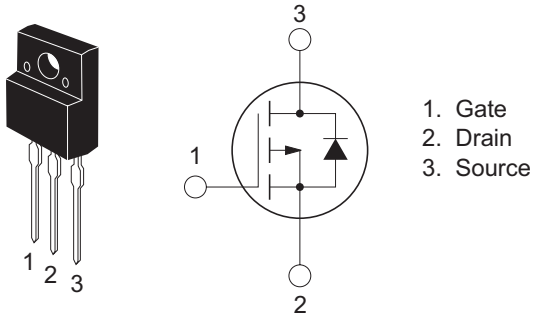
REJ03G1624-0200
Rev.2.00
Jun 16, 2008

Features

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

Outline

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



Application

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

Absolute Maximum Ratings

(Tc = 25°C)

Item	Symbol	Ratings	Unit	Conditions
Drain to source voltage	V_{DSS}	–60	V	V_{GS} = 0 V
Gate to source voltage	V_{GSS}	+10/–20	V	V_{DS} = 0 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 µH
Channel dissipation	P_{ch}	35	W	
Channel to case thermal impedance	θch-c	3.57	°C/W	
Channel temperature	Tch	–55 to +150	°C	
Storage temperature	Tstg	–55 to +150	°C	

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

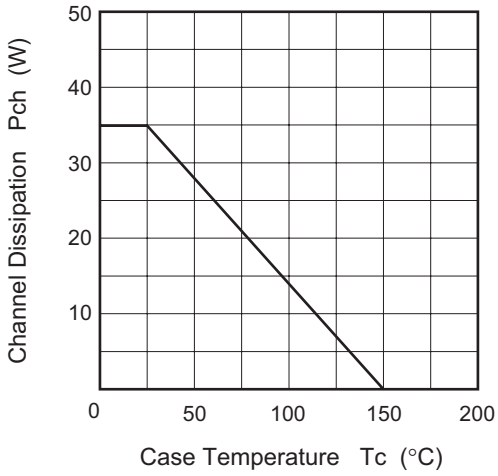
Electrical Characteristics

(Tc = 25°C)

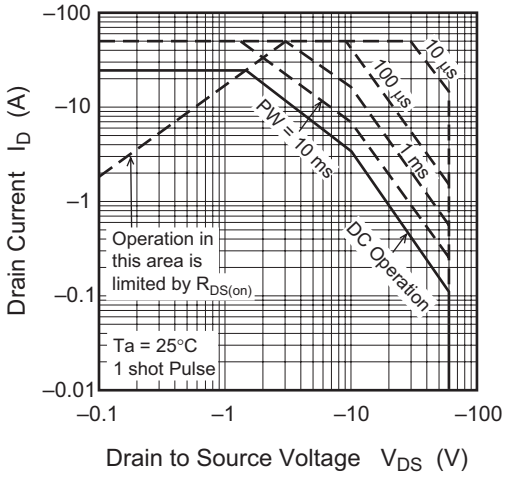
Item	Symbol	Min.	Typ.	Max.	Unit	Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	–60	—	—	V	I_D = –10 mA, V_{GS} = 0 V
Drain to source leakage current	I_{DSS}	—	—	–1	µA	V_{DS} = –60 V, V_{GS} = 0 V
Gate to source leak current	I_{GSS}	—	—	0.1	µA	V_{GS} = +10 V, V_{DS} = 0 V
Gate to source leak 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	Ciss	—	1550	—	pF	V_{DS} = –10 V V_{GS} = 0 V f = 1 MHz
Output capacitance	Coss	—	190	—	pF	
Reverse transfer capacitance	Crss	—	100	—	pF	
Turn-on delay time	$t_{d(on)}$	—	15	—	ns	V_{DD} = –30 V I_D = –12.5 A V_{GS} = –10 V R_G = 25 Ω
Rise time	t_r	—	25	—	ns	
Turn-off delay time	$t_{d(off)}$	—	100	—	ns	
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

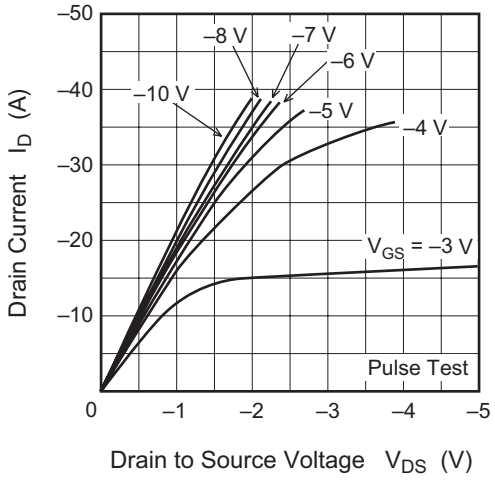
Power vs. Temperature Derating



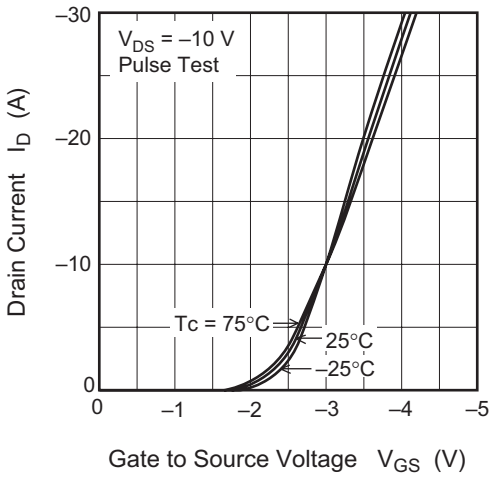
Maximum Safe Operation Area



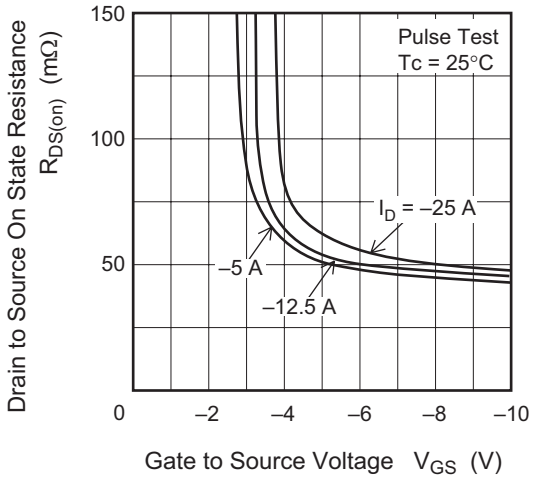
Typical Output Characteristics



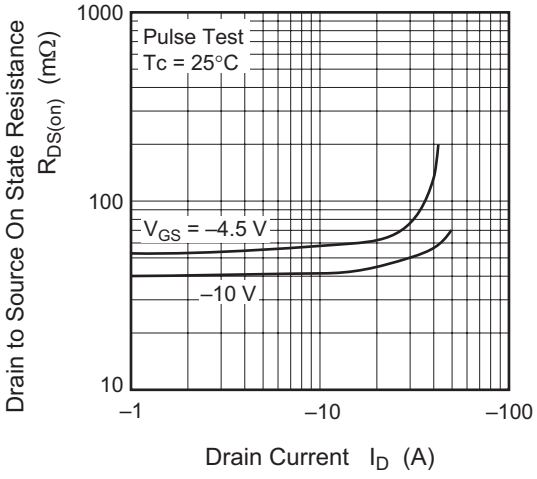
Typical Transfer Characteristics



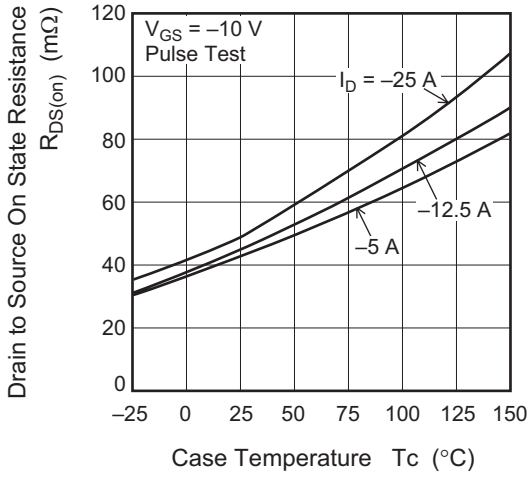
Static Drain to Source on State Resistance vs.Gate to Source Voltage



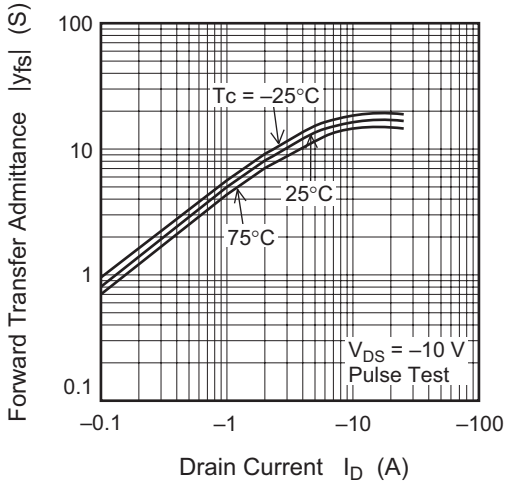
Static Drain to Source on State Resistance vs. Drain Current



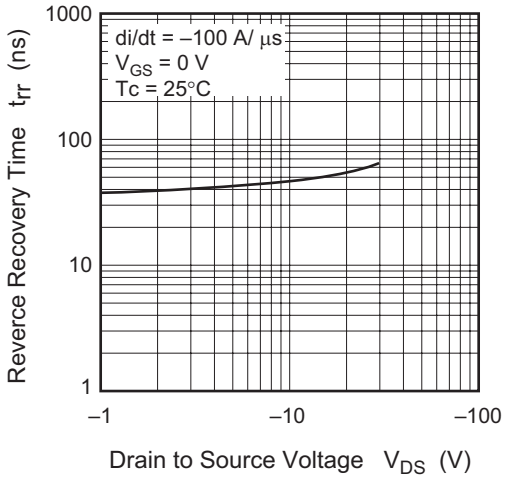
Drain to Source on State Resistance vs. Temperature



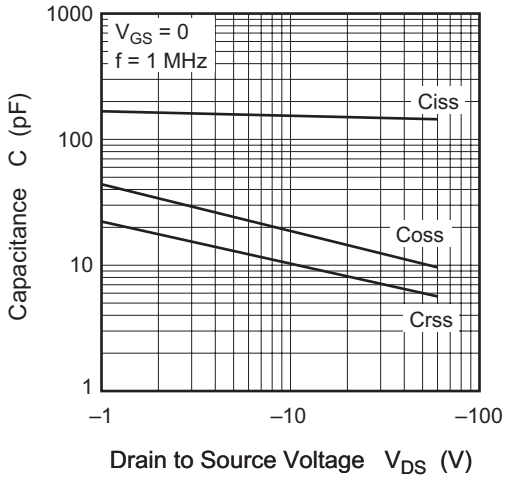
Forward Transfer Admittance vs. Drain Current



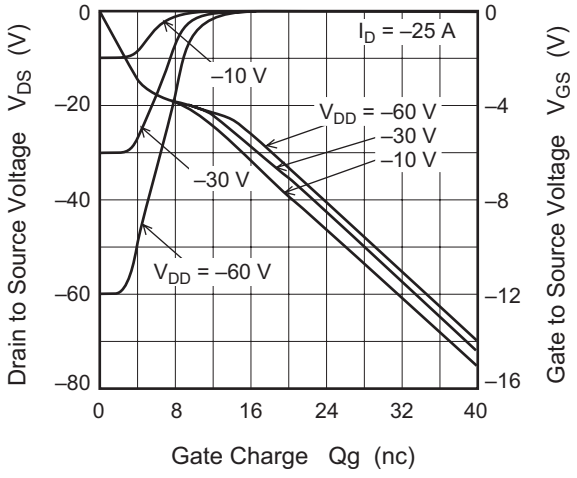
Body-Drain Diode Reverce Recovery Time



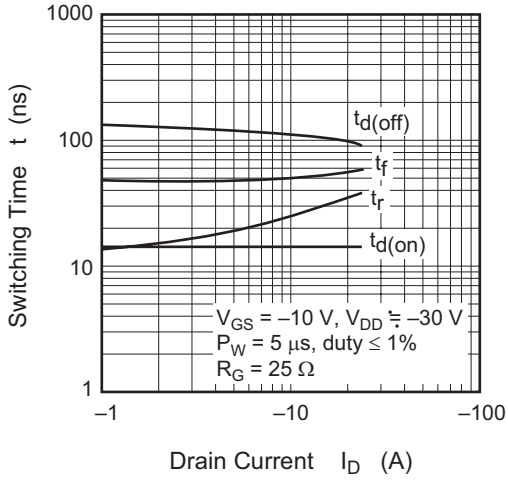
Typical Capacitance vs. Drain to Source Voltage



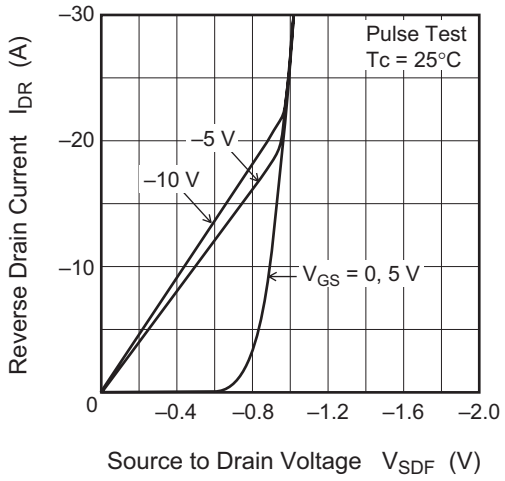
Dynamic Input Characteristics



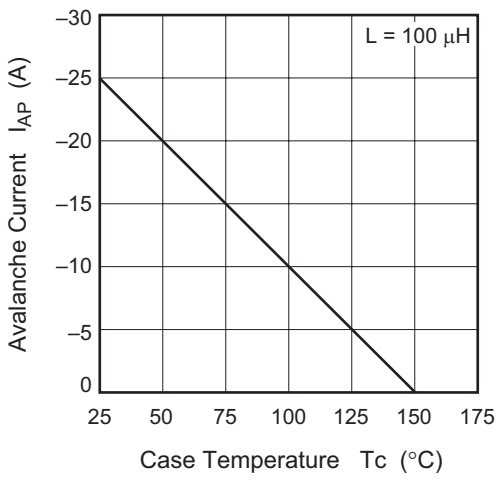
Switching Characteristics



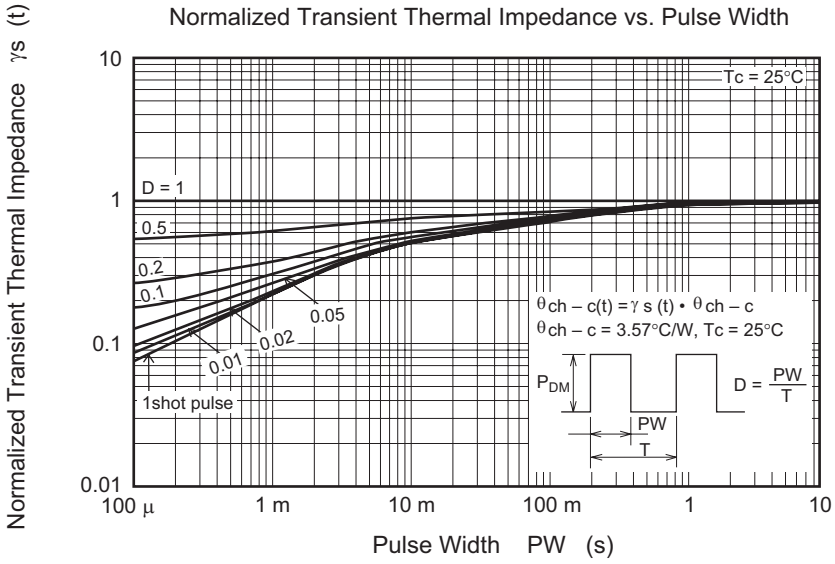
Reverse Drain Current vs.
Source to Drain Voltage



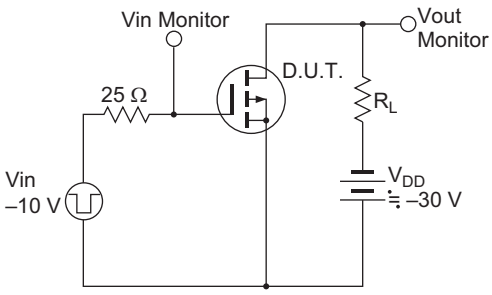
Avalanche Current vs. Case Temperature



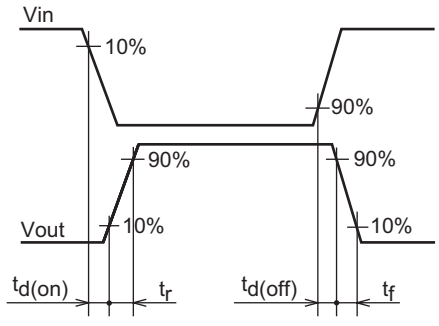
Normalized Transient Thermal Impedance vs. Pulse Width



Switching Time Test Circuit



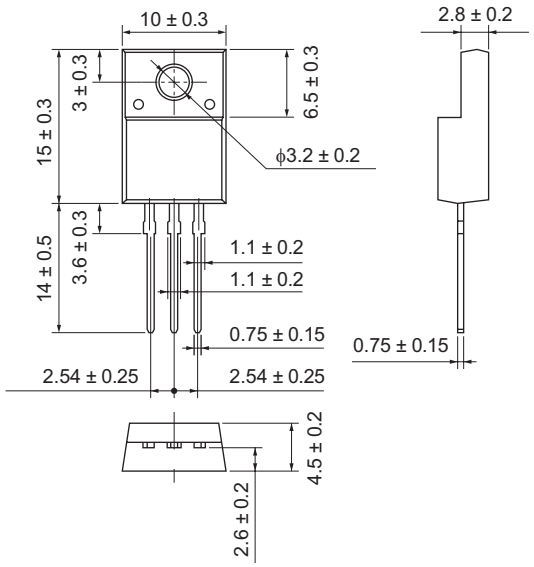
Switching Time Waveform



Package Dimensions

Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
TO-220FN	—	PRSS0003AB-A	—	2.0g

Unit: mm



Ordering Information

Part No.	Quantity	Shipping Container
RJJ0621DPP-00-T2	50 pcs	Magazine (Tube)

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