

RJJ1011DPD

P Channel Power MOS FET
High Speed Switching

REJ03G1623-0200

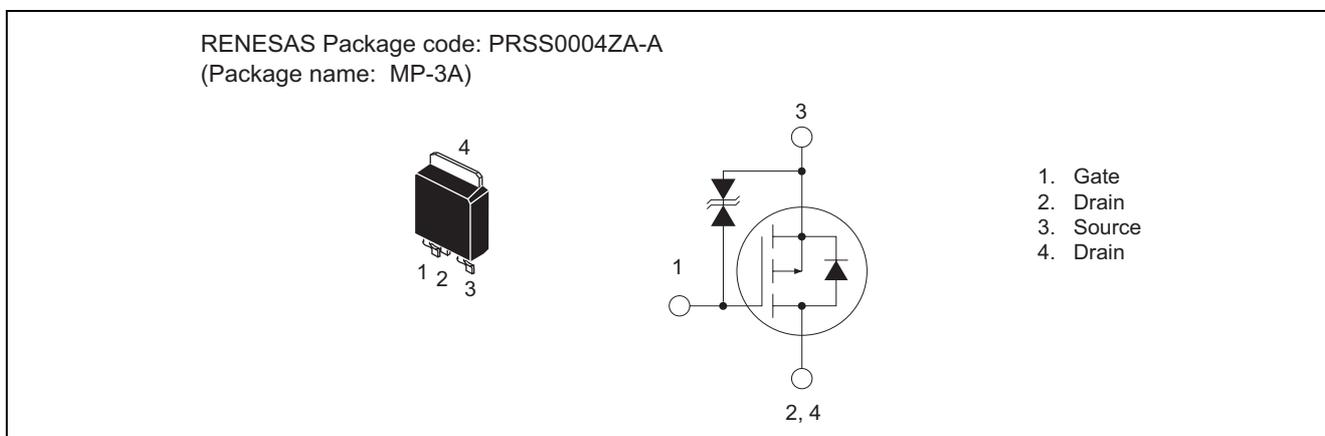
Rev.2.00

Jun 16, 2008

Features

- V_{DSS} : -100 V
- $R_{DS(on)}$: 0.30 Ω (Max)
- I_D : -6 A
- Surface mount package (MP-3A)

Outline



Application

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

Absolute Maximum Ratings

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

Item	Symbol	Ratings	Unit	Conditions
Drain to source voltage	V_{DSS}	-100	V	$V_{GS} = 0\text{ V}$
Gate to source voltage	V_{GSS}	± 20	V	$V_{DS} = 0\text{ V}$
Drain current (DC)	I_D	-6	A	
Drain current (Pulsed)*1	$I_{D(pulse)}$	-12	A	
Avalanche current	I_{AP}	-6	A	$L = 100\ \mu\text{H}$
Channel dissipation	P_{ch}	30	W	
Channel to case thermal impedance	θ_{ch-c}	4.17	$^\circ\text{C/W}$	
Channel temperature	T_{ch}	-55 to +150	$^\circ\text{C}$	
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$	

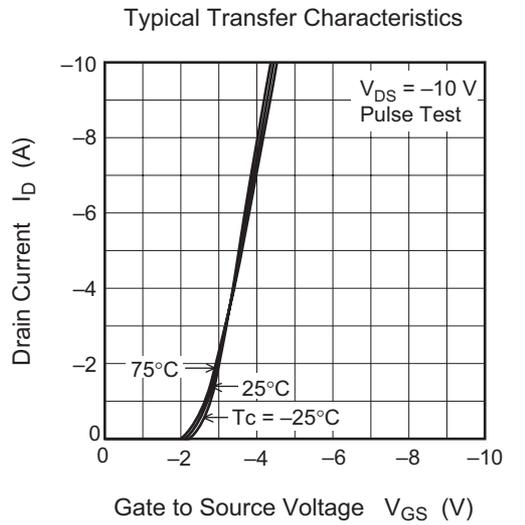
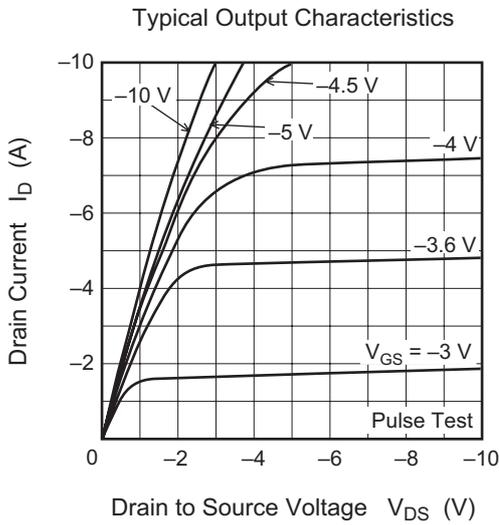
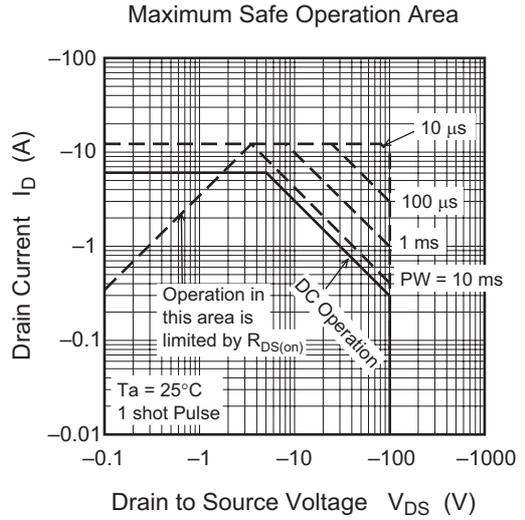
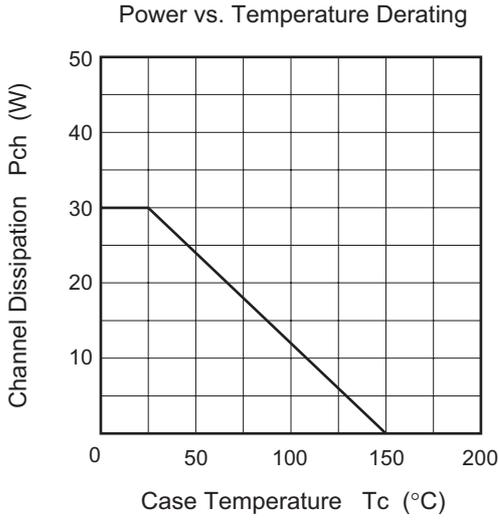
Note: 1. Pulse width limited by safe operating area.

Electrical Characteristics

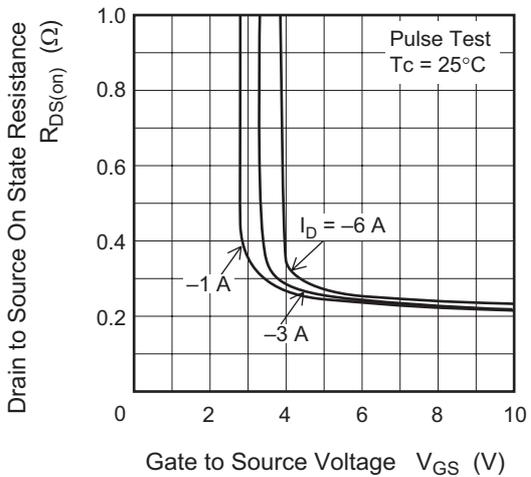
(Tc = 25°C)

Item	Symbol	Min.	Typ.	Max.	Unit	Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	-100	—	—	V	$I_D = -1 \text{ mA}$, $V_{GS} = 0 \text{ V}$
Gate to source breakdown voltage	$V_{(BR)GSS}$	± 20	—	—	V	$I_G = \pm 100 \text{ }\mu\text{A}$, $V_{DS} = 0 \text{ V}$
Drain to source leakage current	I_{DSS}	—	—	-1	mA	$V_{DS} = -100 \text{ V}$, $V_{GS} = 0 \text{ V}$
Gate to source leak current	I_{GSS}	—	—	± 10	μA	$V_{GS} = \pm 16 \text{ V}$, $V_{DS} = 0 \text{ V}$
Gate-source cutoff voltage	$V_{GS(off)}$	-1.0	-1.9	-2.5	V	$I_D = -1 \text{ mA}$, $V_{DS} = -10 \text{ V}$
Static drain to source on state resistance	$R_{DS(on)}$	—	0.26	0.30	Ω	$I_D = -3 \text{ A}$, $V_{GS} = -10 \text{ V}$
		—	0.30	0.50	Ω	$I_D = -3 \text{ A}$, $V_{GS} = -4.5 \text{ V}$
Input capacitance	C_{iss}	—	930	—	pF	$V_{DS} = -10 \text{ V}$ $V_{GS} = 0 \text{ V}$ $f = 1 \text{ MHz}$
Output capacitance	C_{oss}	—	80	—	pF	
Reverse transfer capacitance	C_{rss}	—	50	—	pF	
Turn-on delay time	$t_{d(on)}$	—	10	—	ns	$V_{DD} = -50 \text{ V}$
Rise time	t_r	—	15	—	ns	$I_D = -3 \text{ A}$
Turn-off delay time	$t_{d(off)}$	—	65	—	ns	$V_{GS} = -10 \text{ V}$
Fall time	t_f	—	35	—	ns	$R_G = 25 \text{ }\Omega$
Source-drain voltage	V_{SD}	—	-0.85	-1.2	V	$I_S = -3 \text{ A}$, $V_{GS} = 0 \text{ V}$

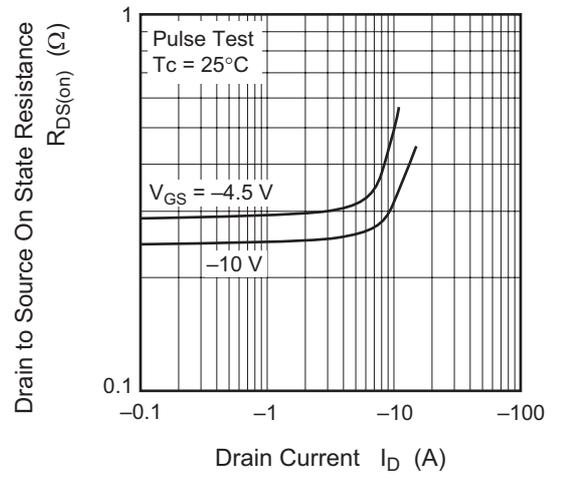
Main Characteristics



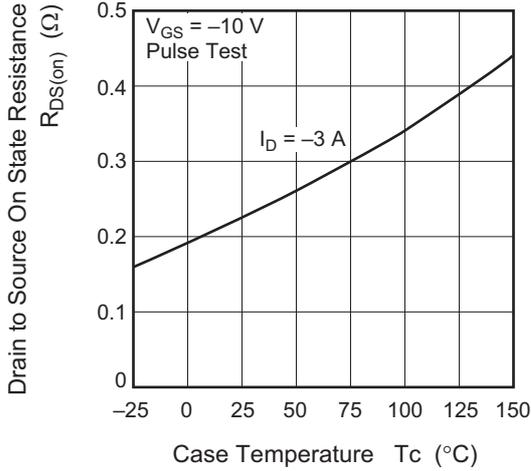
Static Drain to Source on State Resistance vs. Gate to Source Voltage



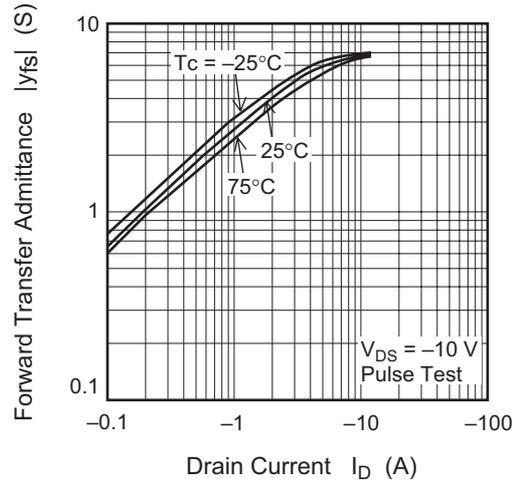
Static Drain to Source on State Resistance vs. Drain Current



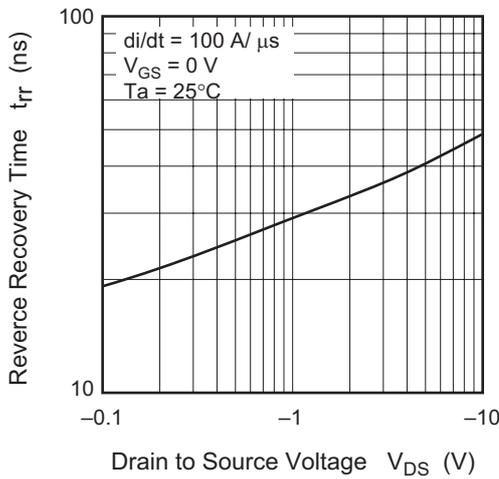
Drain to Source on State Resistance vs. Temperature



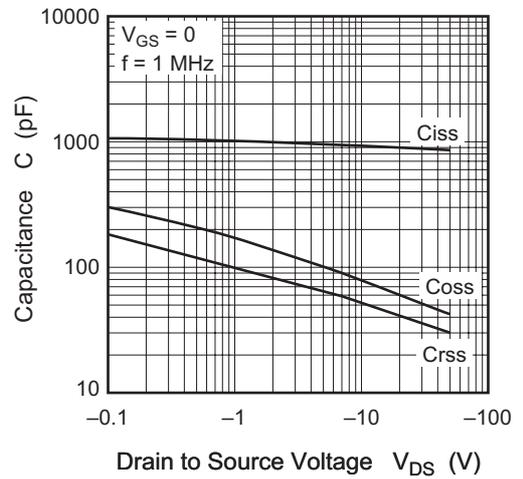
Forward Transfer Admittance vs. Drain Current



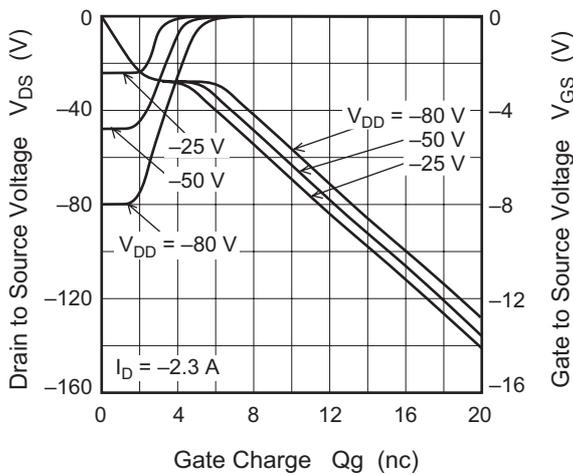
Body-Drain Diode Reverse Recovery Time



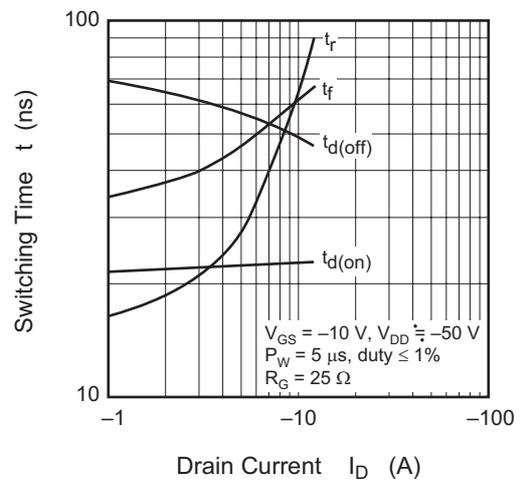
Typical Capacitance vs. Drain to Source Voltage



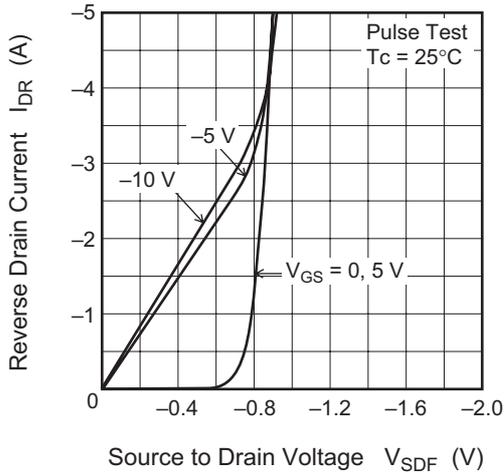
Dynamic Input Characteristics



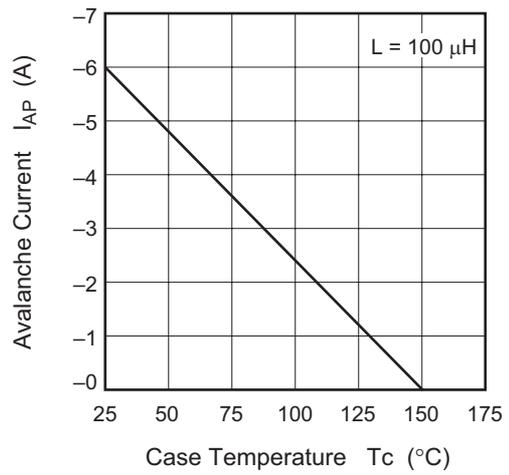
Switching Characteristics



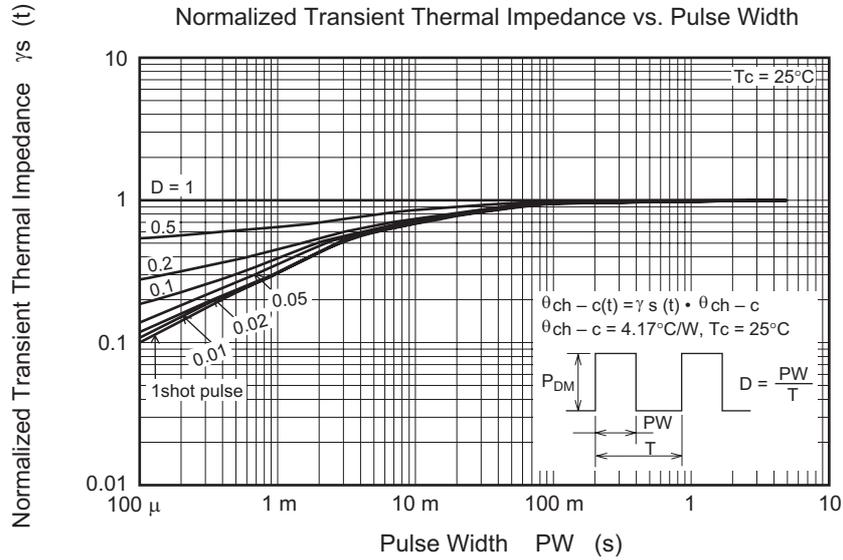
Reverse Drain Current vs. Source to Drain Voltage



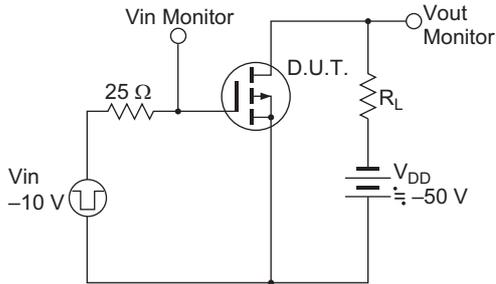
Avalanche Current vs. Case Temperature



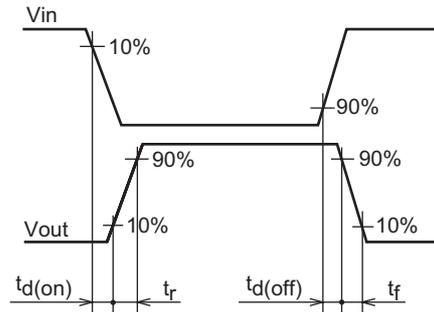
Normalized Transient Thermal Impedance vs. Pulse Width



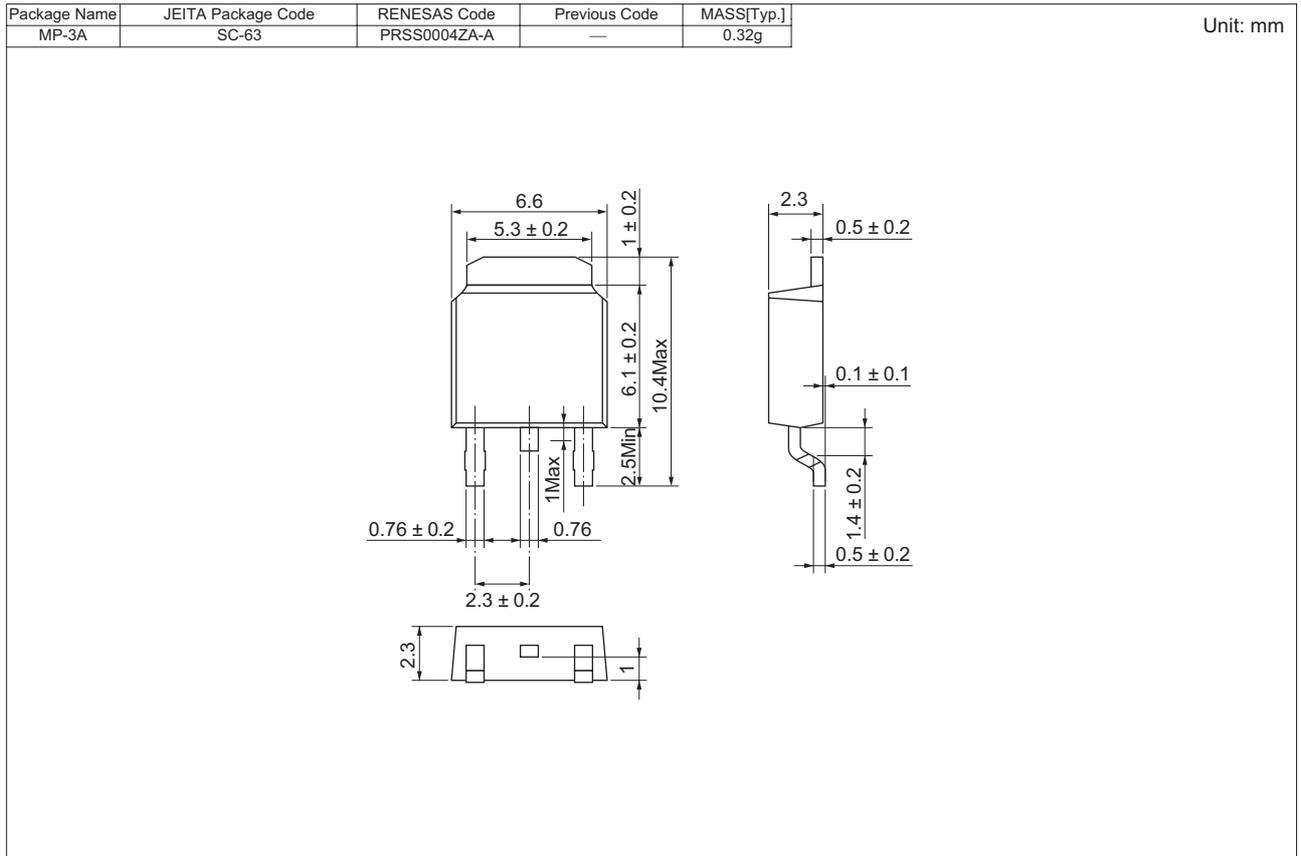
Switching Time Test Circuit



Switching Time Waveform



Package Dimensions



Ordering Information

Part No.	Quantity	Shipping Container
RJJ1011DPD-00-J2	3000 pcs	Taping

Notes:

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