

2SJ181(L), 2SJ181(S)

R07DS0395EJ0300
 (Previous: REJ03G0848-0200)
 Rev.3.00
 May 16, 2011

Silicon P Channel MOS FET

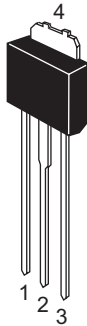
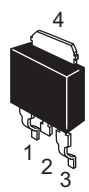
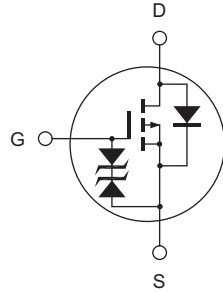
Description

High speed power switching

Features

- Low on-resistance
- High speed switching
- Low drive current
- No secondary breakdown
- Suitable for switching regulator and DC-DC converter

Outline

RENESAS Package code: PRSS0004ZD-A (Package name: DPAK (L)-(1))	RENESAS Package code: PRSS0004ZD-C (Package name: DPAK (S))
	
	
1. Gate 2. Drain 3. Source 4. Drain	

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Value	Unit
Drain to source voltage	V_{DSS}	-600	V
Gate to source voltage	V_{GSS}	± 15	V
Drain current	I_D	-0.5	A
Drain peak current	$I_{D(pulse)}$ ^{Note 1}	-1.0	A
Body to drain diode reverse drain current	I_{DR}	-0.5	A
Channel dissipation	P_{ch} ^{Note 2}	20	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

Notes: 1. $PW \leq 10 \mu s$, duty cycle $\leq 1\%$
 2. Value at $T_c = 25^\circ C$

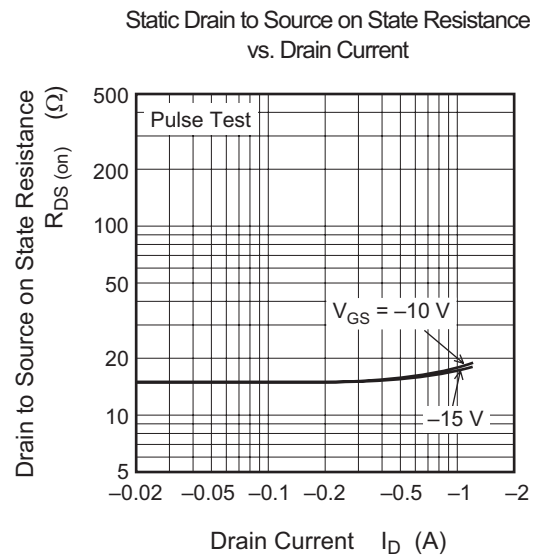
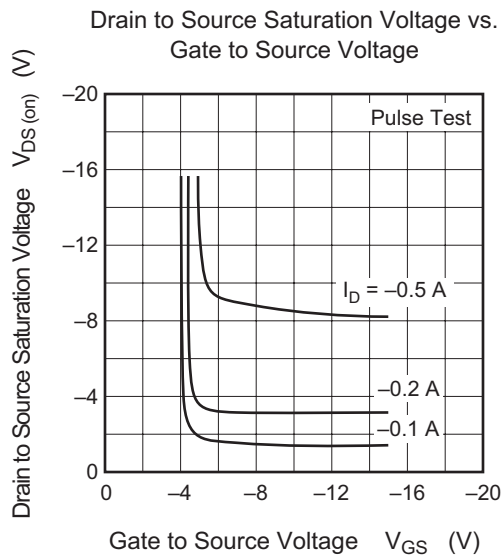
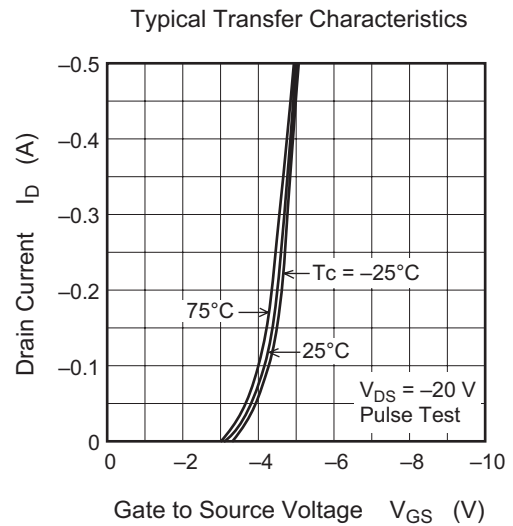
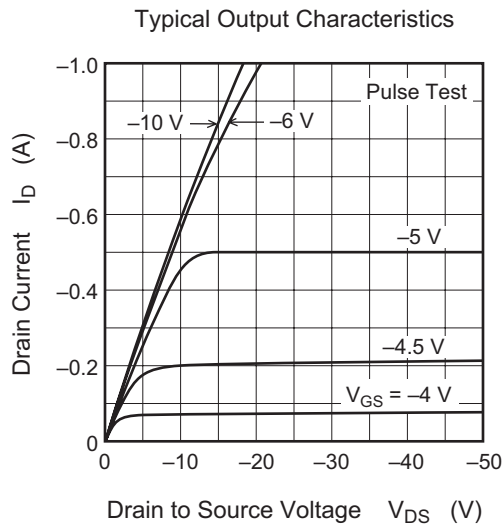
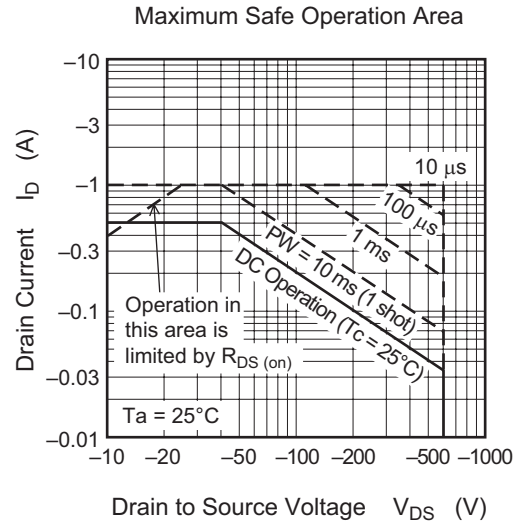
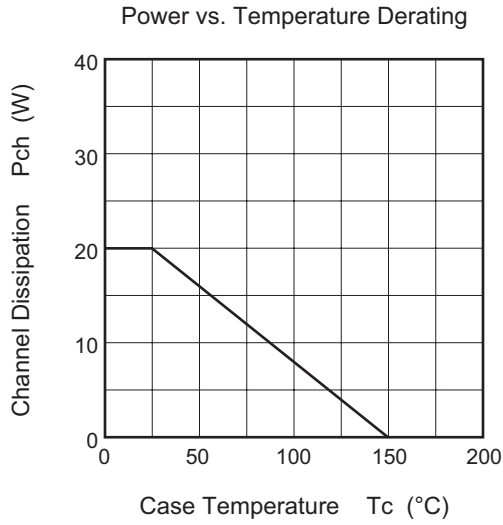
Electrical Characteristics

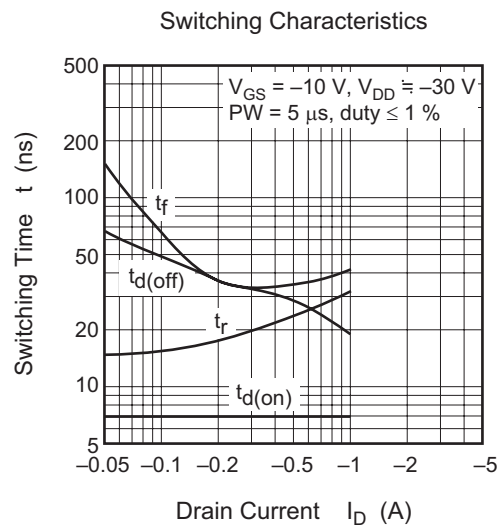
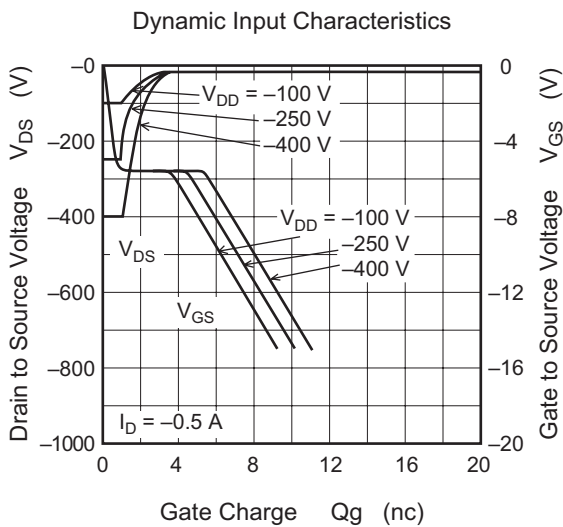
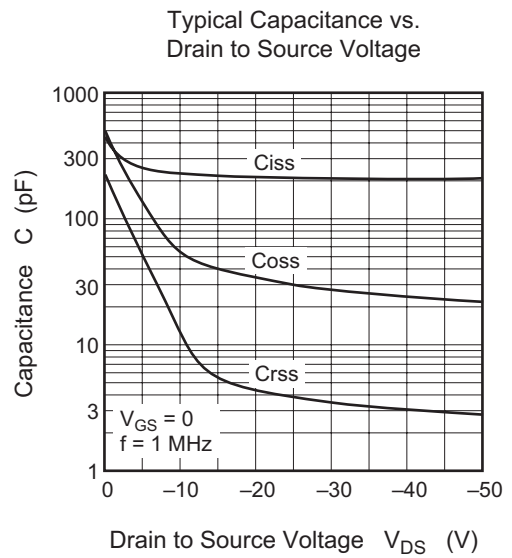
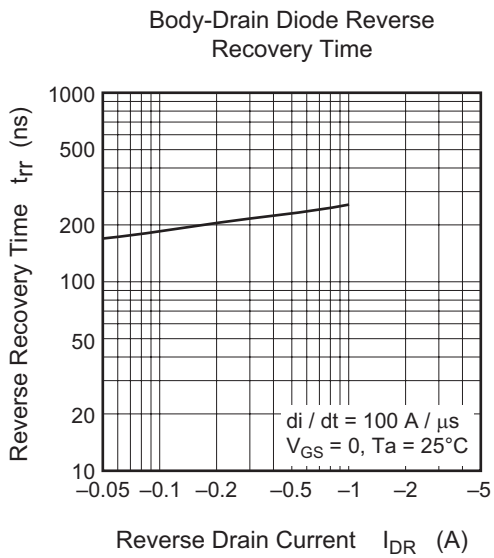
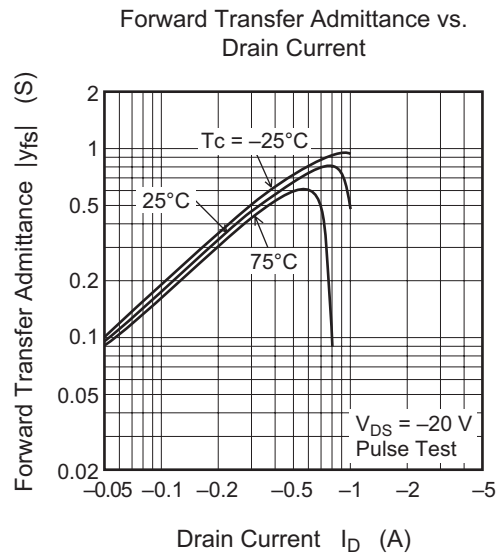
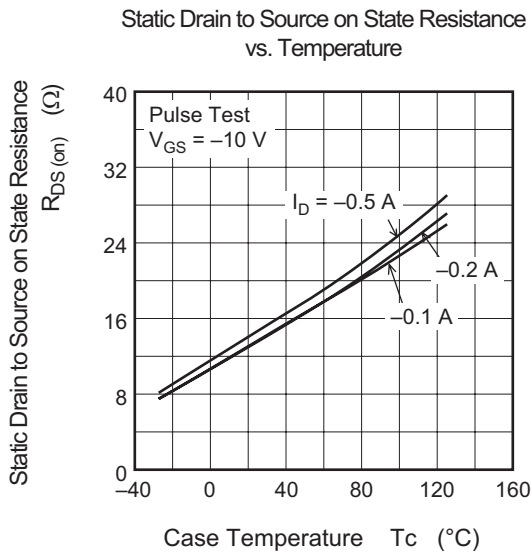
(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	-600	—	—	V	$I_D = -10 \text{ mA}$, $V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	± 15	—	—	V	$I_G = \pm 100 \text{ }\mu\text{A}$, $V_{DS} = 0$
Gate to source leak current	I_{GSS}	—	—	± 10	μA	$V_{GS} = \pm 12 \text{ V}$, $V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	-100	μA	$V_{DS} = -500 \text{ V}$, $V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	-2.0	—	-4.0	V	$I_D = -1 \text{ mA}$, $V_{DS} = -10 \text{ V}$
Static drain to source on state resistance	$R_{DS(on)}$	—	15	25	Ω	$I_D = -0.3 \text{ A}$, $V_{GS} = -10 \text{ V}$ ^{Note 3}
Forward transfer admittance	$ y_{fs} $	0.3	0.45	—	S	$I_D = -0.3 \text{ A}$, $V_{DS} = -20 \text{ V}$ ^{Note 3}
Input capacitance	C_{iss}	—	220	—	pF	$V_{DS} = -10 \text{ V}$
Output capacitance	C_{oss}	—	55	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	C_{rss}	—	13	—	pF	$f = 1 \text{ MHz}$
Turn-on delay time	$t_{d(on)}$	—	7	—	ns	$I_D = -0.3 \text{ A}$
Rise time	t_r	—	20	—	ns	$V_{GS} = -10 \text{ V}$
Turn-off delay time	$t_{d(off)}$	—	35	—	ns	$R_L = 100 \text{ }\Omega$
Fall time	t_f	—	35	—	ns	
Body to drain diode forward voltage	V_{DF}	—	-0.85	—	V	$I_F = -0.5 \text{ A}$, $V_{GS} = 0$
Body to drain diode reverse recovery time	t_{rr}	—	230	—	ns	$I_F = -0.5 \text{ A}$, $V_{GS} = 0$ $di_F/dt = 50 \text{ A}/\mu\text{s}$

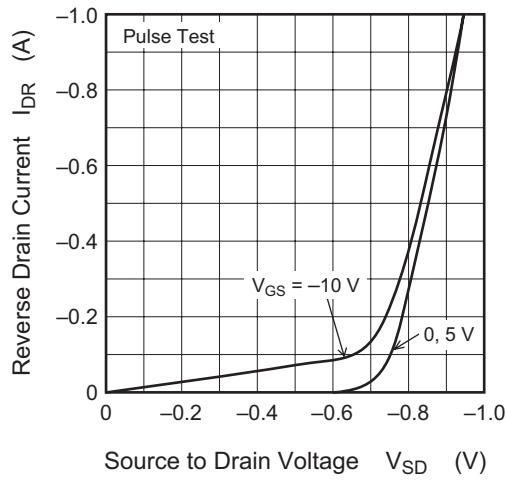
Note: 3. Pulse test

Main Characteristics

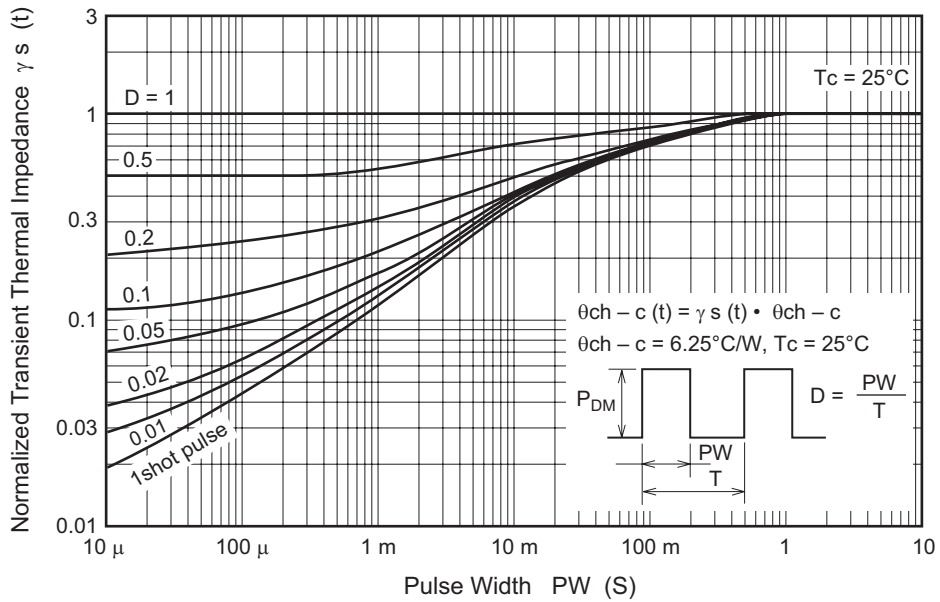




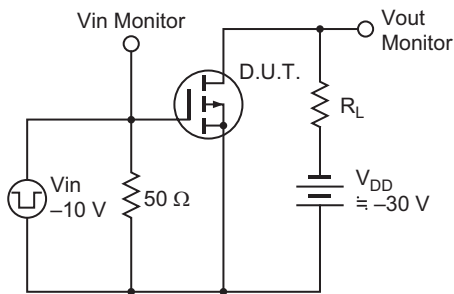
Reverse Drain Current vs. Source to Drain Voltage



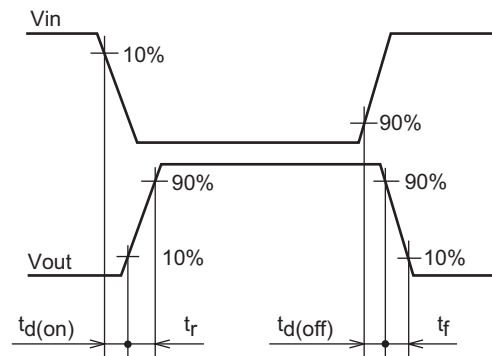
Normalized Transient Thermal Impedance vs. Pulse Width



Switching Time Test Circuit

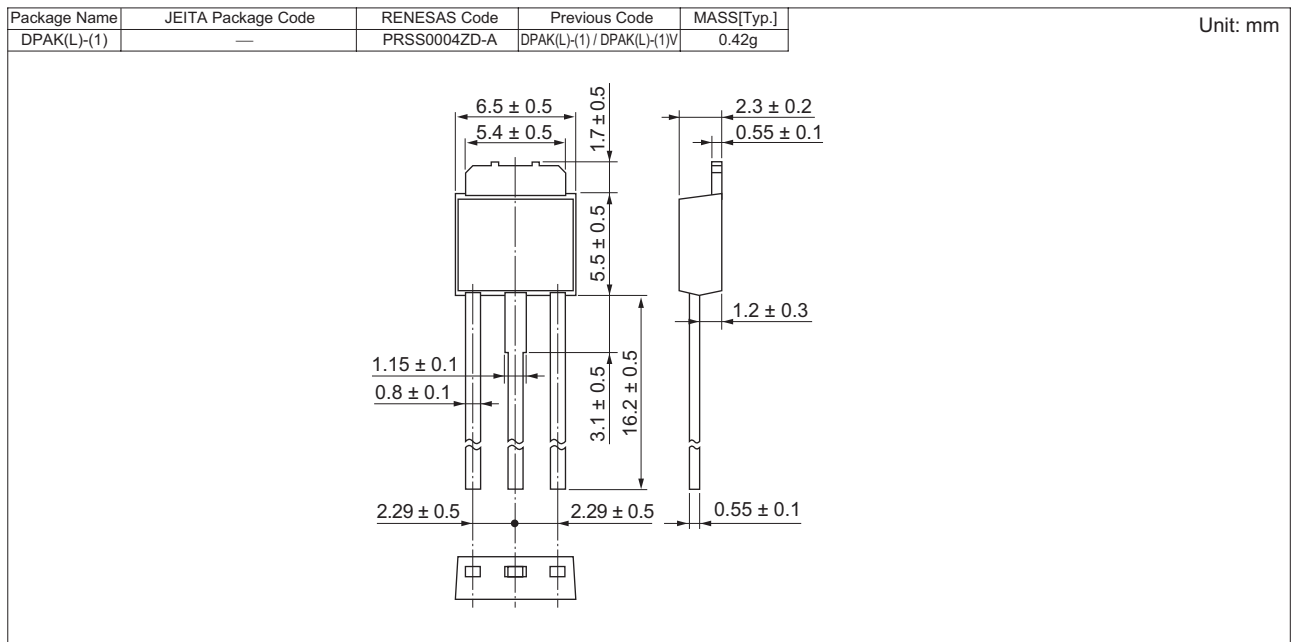


Waveform

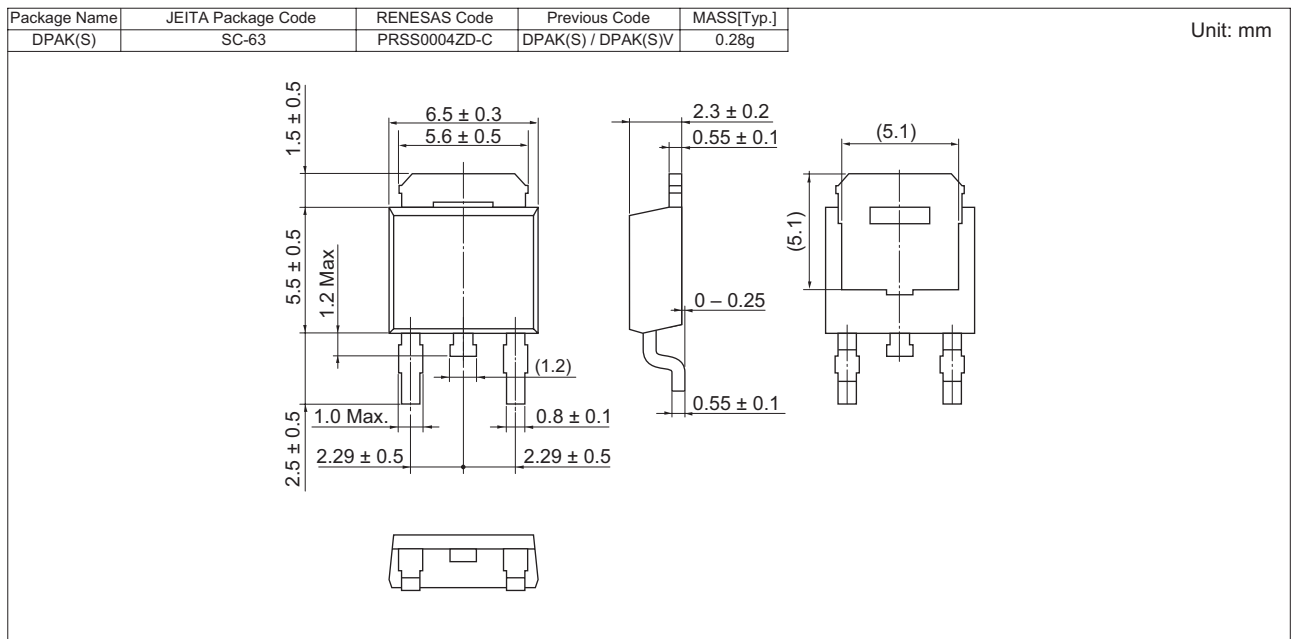


Package Dimensions

• 2SJ181(L)



• 2SJ181(S)



Ordering Information

Orderable Part Number	Quantity	Shipping Container
2SJ181L-E	2160 pcs	Box (Tube)
2SJ181STR-E	3000 pcs	Taping

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