2SJ130(L), 2SJ130(S)

Silicon P Channel MOS FET

REJ03G0846-0200
(Previous: ADE-208-1181)
Rev.2.00
Sep 07, 2005

Description

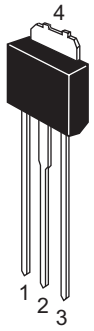
High speed power switching

Features

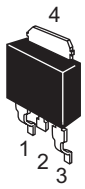
- Low on-resistance
- High speed switching
- Low drive current
- No secondary breakdown
- Suitable for switching regulator, DC-DC converter and ultrasonic power oscillators

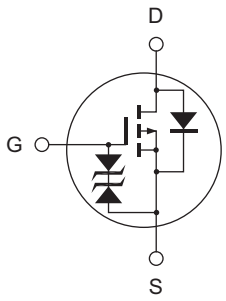
Outline

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}	–300	V
Gate to source voltage	V_{GSS}	±20	V
Drain current	I_D	–1	A
Drain peak current	$I_{D\ (pulse)}$	–2	A
Body to drain diode reverse drain current	I_{DR}	–1	A
Channel dissipation	Pch [Note 1]	20	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	–55 to +150	°C

Note: 1. Value at Tc = 25°C

Electrical Characteristics

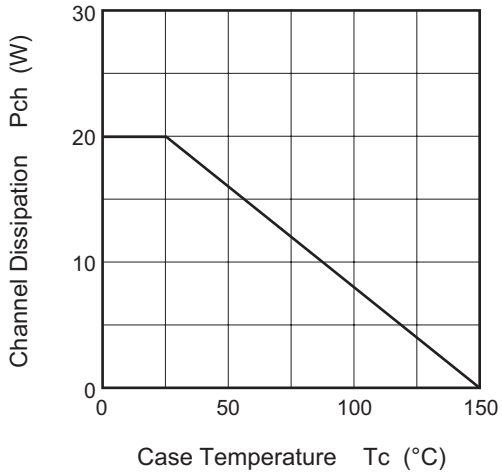
(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)\ DSS}$	–300	—	—	V	I_D = –10 mA, V_{GS} = 0
Gate to source breakdown voltage	$V_{(BR)\ GSS}$	±20	—	—	V	I_G = ±100 µA, V_{DS} = 0
Gate to source leak current	I_{GSS}	—	—	±10	µA	V_{GS} = ±16 V, V_{DS} = 0
Zero gate voltage drain current	I_{DSS}	—	—	–100	µA	V_{DS} = –240 V, V_{GS} = 0
Gate to source cutoff voltage	$V_{GS\ (off)}$	–2.0	—	–4.0	V	I_D = –1 mA, V_{DS} = –10 V
Static drain to source on state resistance	$R_{DS\ (on)}$	—	6.0	8.5	Ω	I_D = –0.5 A, V_{GS} = –10 V [Note 2]
Forward transfer admittance	$\|y_{fs}\|$	0.25	0.4	—	S	I_D = –0.5 A, V_{DS} = –20 V [Note 2]
Input capacitance	Ciss	—	235	—	pF	V_{DS} = –10 V
Output capacitance	Coss	—	65	—	pF	V_{GS} = 0
Reverse transfer capacitance	Crss	—	16	—	pF	f = 1 MHz
Turn-on delay time	$t_{d\ (on)}$	—	10	—	ns	I_D = –0.5 A
Rise time	t_r	—	25	—	ns	V_{GS} = –10 V
Turn-off delay time	$t_{d\ (off)}$	—	35	—	ns	R_L = 60 Ω
Fall time	t_f	—	45	—	ns	
Body to drain diode forward voltage	V_{DF}	—	–0.9	—	V	I_F = –1 A, V_{GS} = 0
Body to drain diode reverse recovery time	t_{rr}	—	200	—	ns	I_F = –1 A, V_{GS} = 0 di_F/dt = 50 A/µs

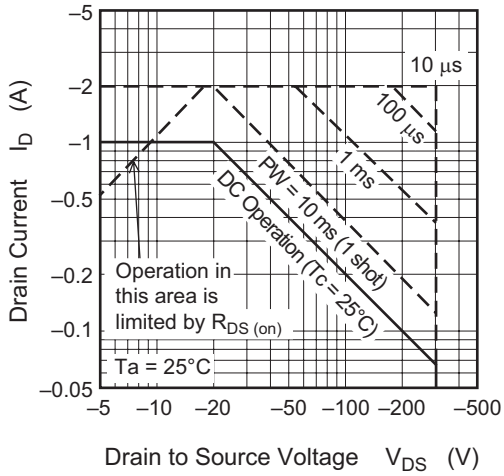
Note: 2. Pulse test

Main Characteristics

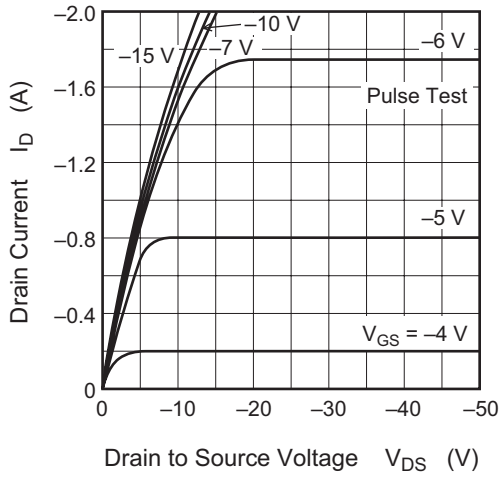
Power vs. Temperature Derating



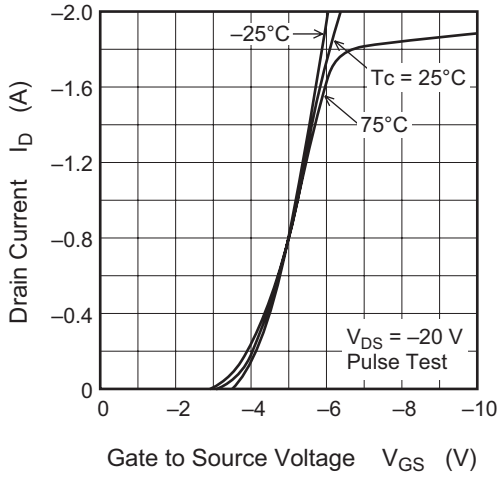
Maximum Safe Operation Area



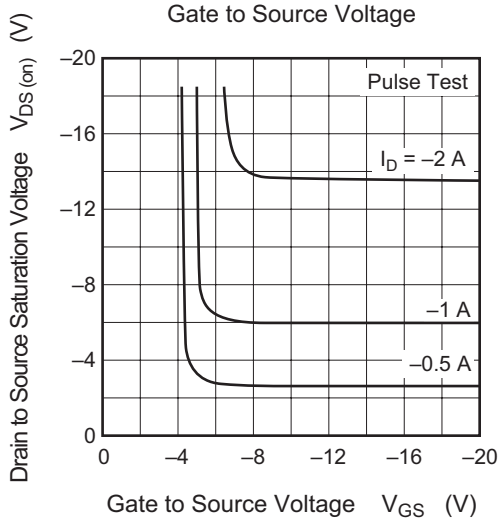
Typical Output Characteristics



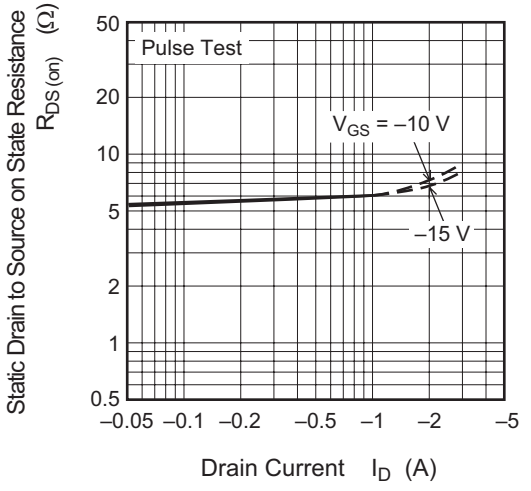
Typical Transfer Characteristics



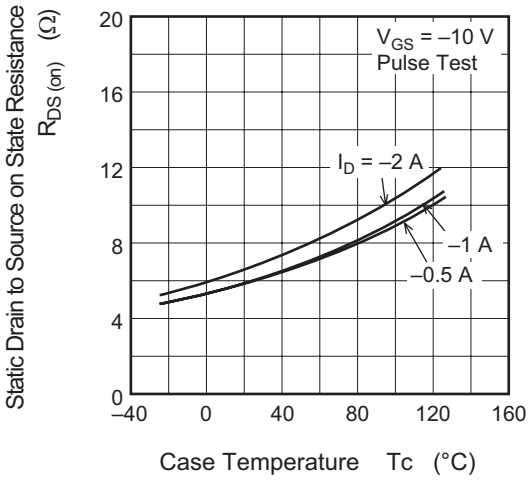
Drain to Source Saturation Voltage vs. Gate to Source Voltage



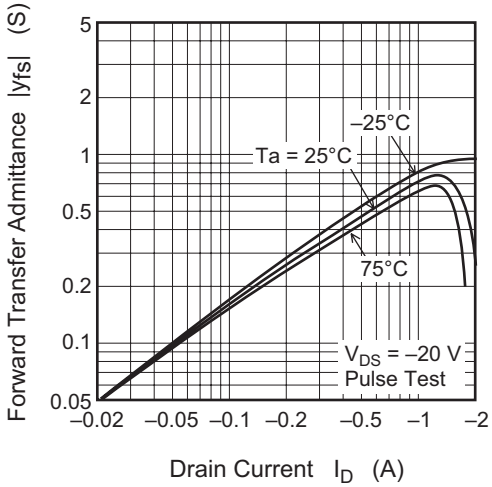
Static Drain to Source on State Resistance vs. Drain Current



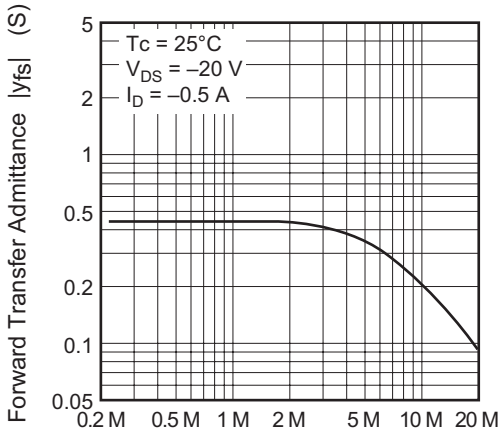
Static Drain to Source on State Resistance vs. Temperature



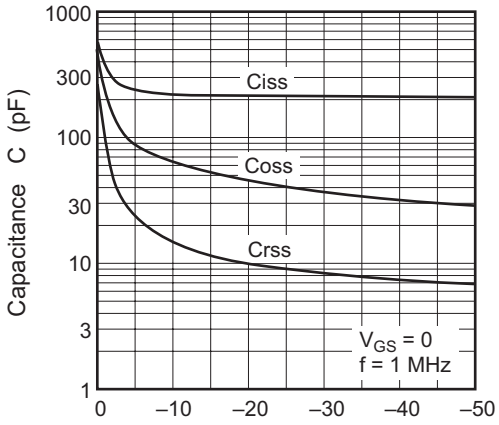
Forward Transfer Admittance vs. Drain Current



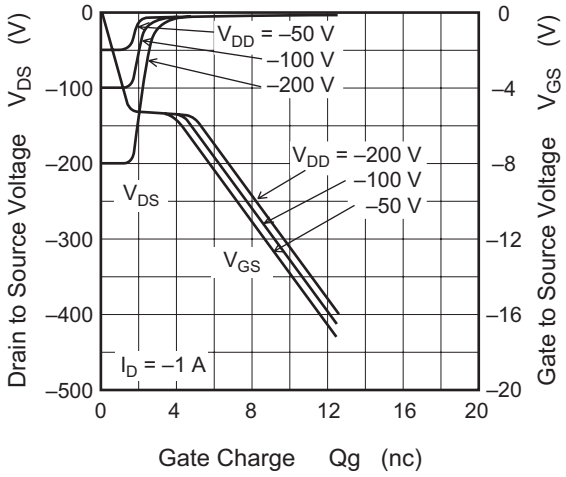
Forward Transfer Admittance vs. Frequency



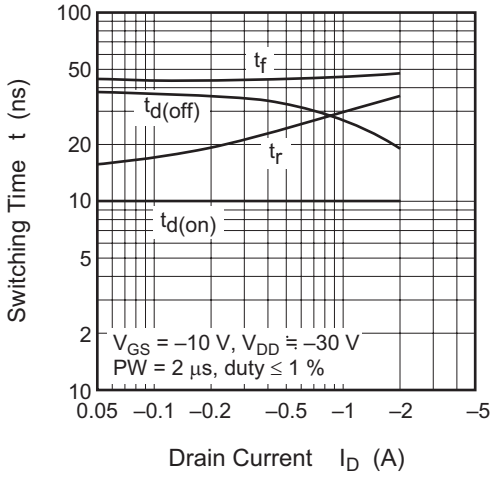
Typical Capacitance vs. Drain to Source Voltage



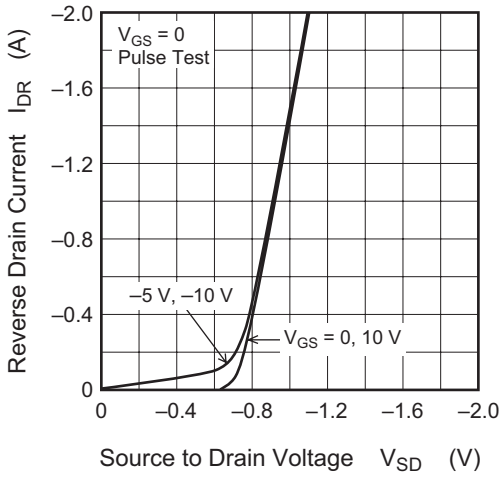
Dynamic Input Characteristics



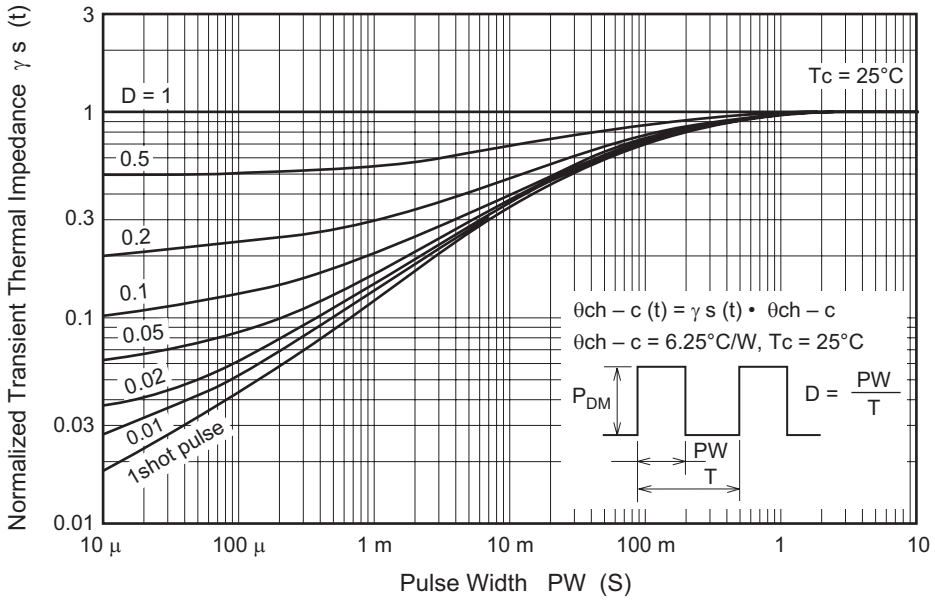
Switching Characteristics



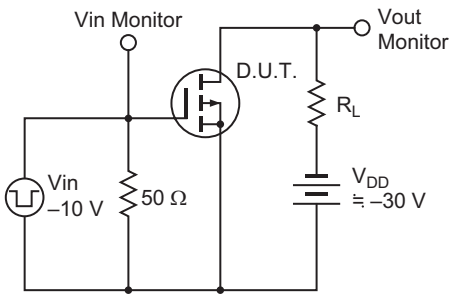
Reverse Drain Current vs.
Source to Drain Voltage



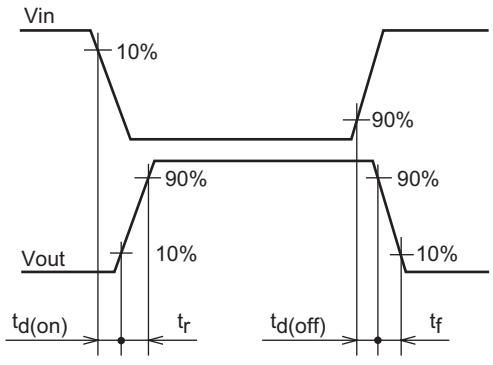
Normalized Transient Thermal Impedance vs. Pulse Width



Switching Time Test Circuit



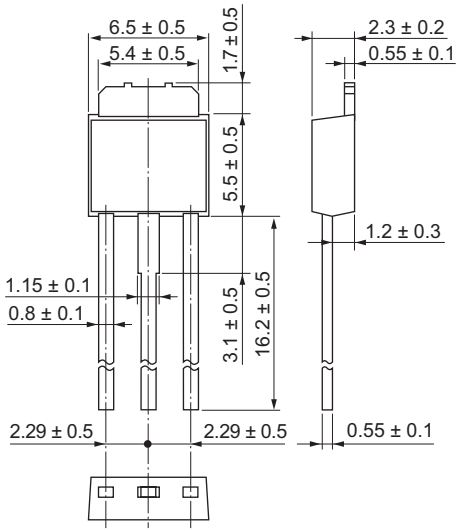
Waveform



Package Dimensions

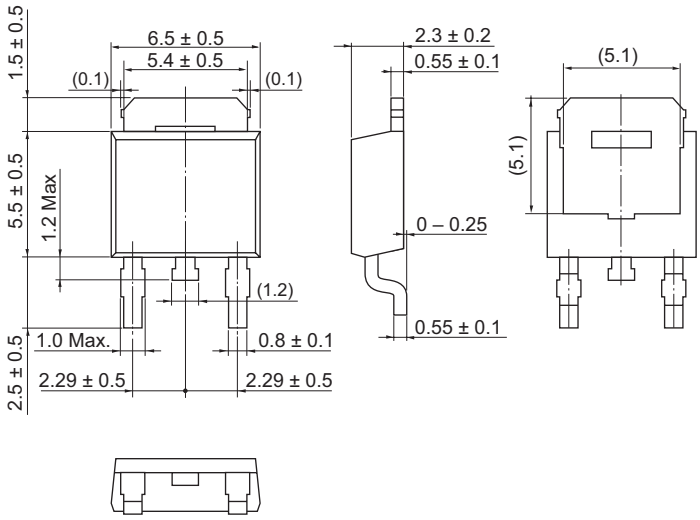
JEITA Package Code	RENESAS Code	Package Name	MASS[Typ.]
—	PRSS0004ZD-A	DPAK(L)-(1) / DPAK(L)-(1)V	0.42g

Unit: mm



JEITA Package Code	RENESAS Code	Package Name	MASS[Typ.]
SC-63	PRSS0004ZD-C	DPAK(S) / DPAK(S)V	0.28g

Unit: mm



Ordering Information

Part Name	Quantity	Shipping Container
2SJ130L-E	3200 pcs	Box (Sack)
2SJ130STL-E	3000 pcs	Taping

Note: For some grades, production may be terminated. Please contact the Renesas sales office to check the state of production before ordering the product.

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