

To our customers,

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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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2SK3211(L), 2SK3211(S)

Silicon N Channel MOS FET
High Speed Power Switching

REJ03G1091-0400

Rev.4.00

May 15, 2006

Features

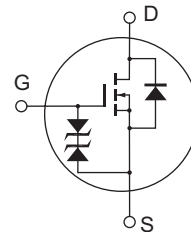
- Low on-resistance
 $R_{DS} = 60 \text{ m}\Omega$ typ.
- High speed switching
- 4 V gate drive device can be driven from 5 V source

Outline

RENESAS Package code: PRSS0004AE-A
(Package name: LPAK(L))



RENESAS Package code: PRSS0004AE-B
(Package name: LPAK(S)-(1))



1. Gate
2. Drain
3. Source
4. Drain

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V _{DSS}	200	V
Gate to source voltage	V _{GSS}	±20	V
Drain current	I _D	25	A
Drain peak current	I _{D(pulse)} ^{Note1}	100	A
Body-drain diode reverse drain current	I _{DR}	25	A
Avalanche current	I _{AP} ^{Note3}	25	A
Avalanche energy	E _{AR} ^{Note3}	41	mJ
Channel dissipation	P _{ch} ^{Note2}	100	W
Channel temperature	T _{ch}	150	°C
Storage temperature	T _{stg}	-55 to +150	°C

Notes: 1. PW ≤ 10 μs, duty cycle ≤ 1%
 2. Value at Tc = 25°C
 3. Value at Tch = 25°C, Rg ≥ 50 Ω

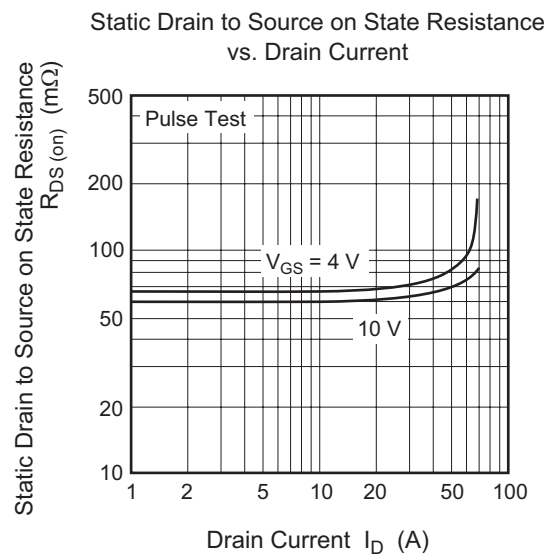
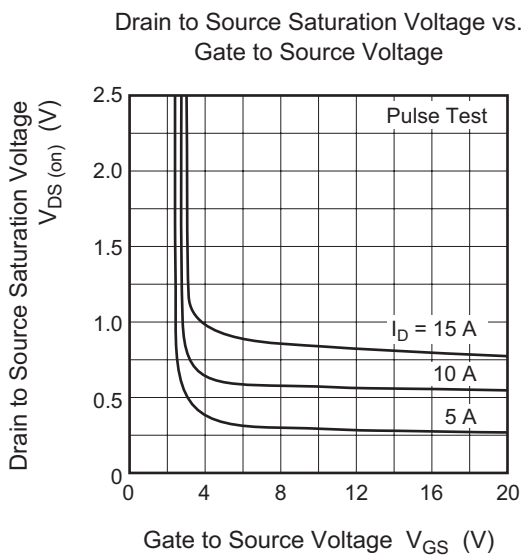
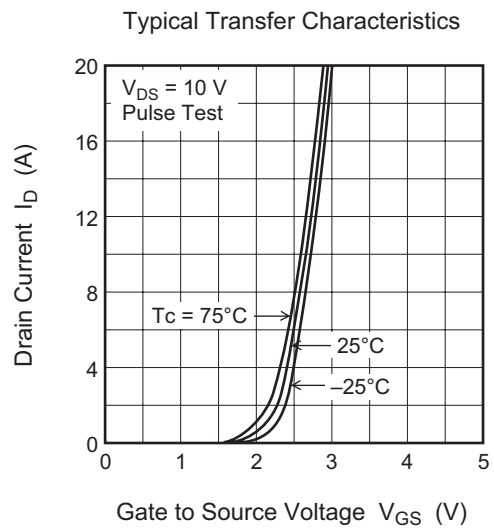
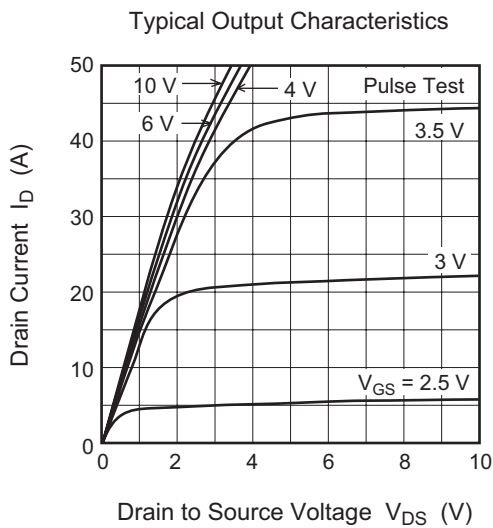
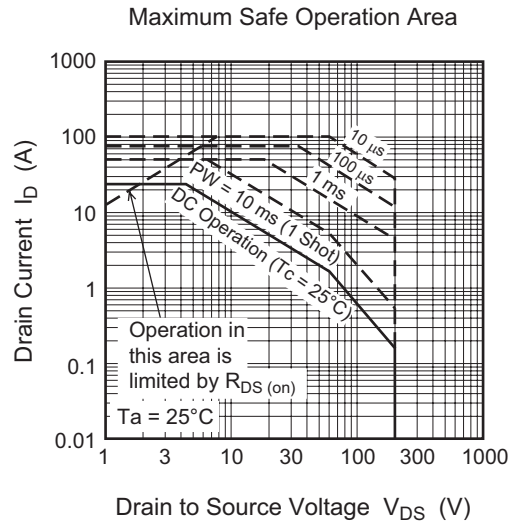
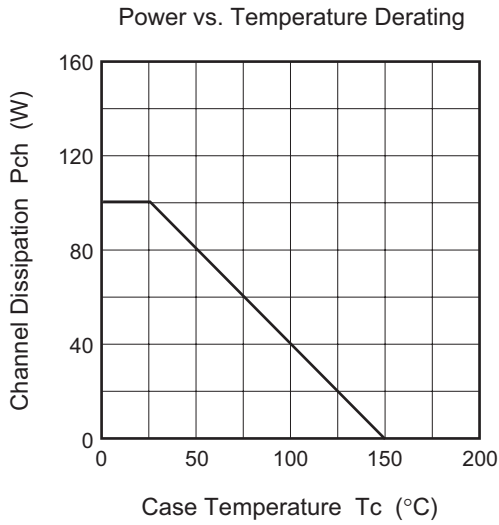
Electrical Characteristics

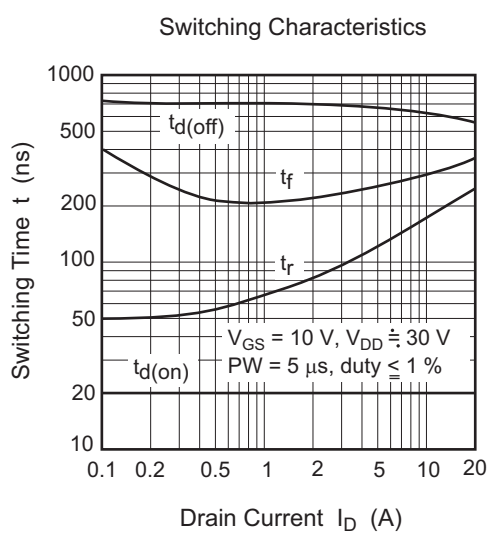
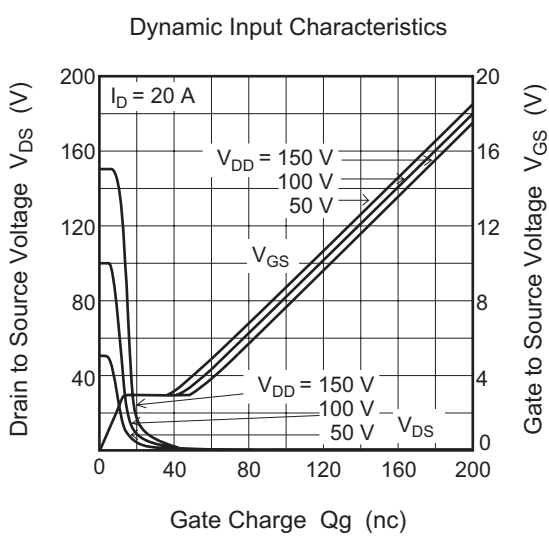
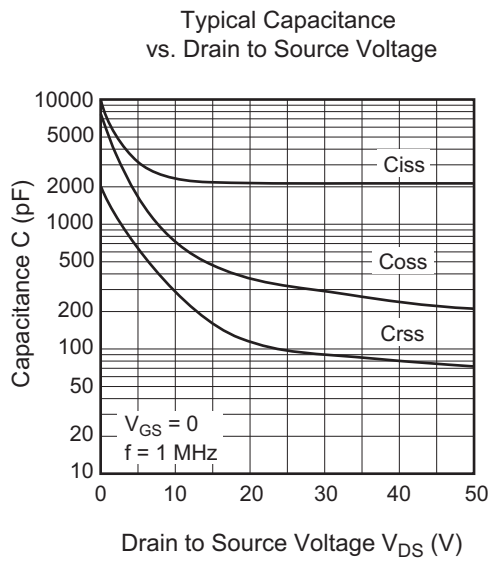
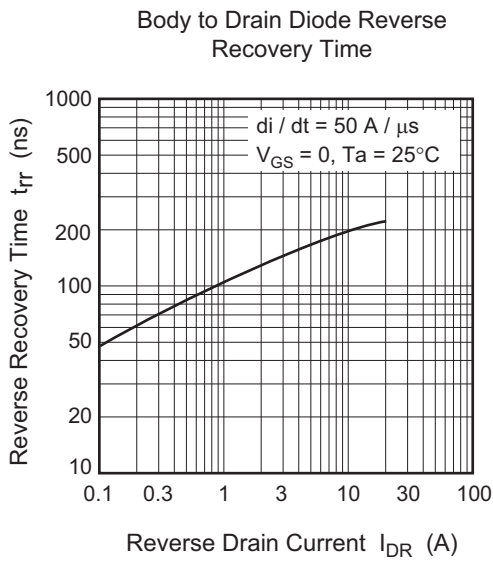
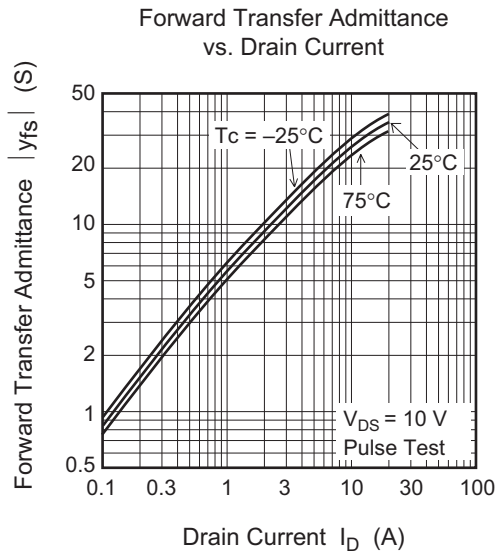
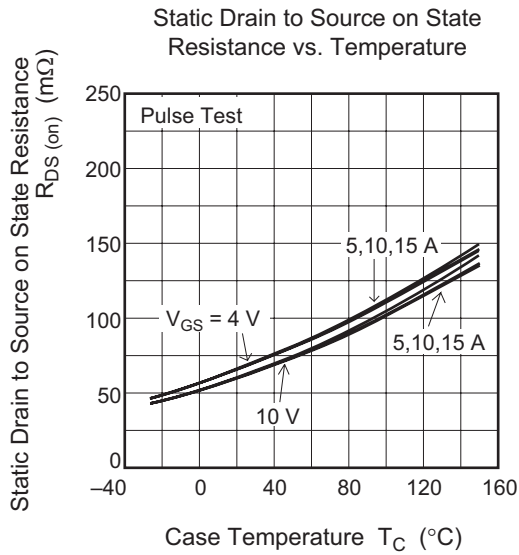
(Ta = 25°C)

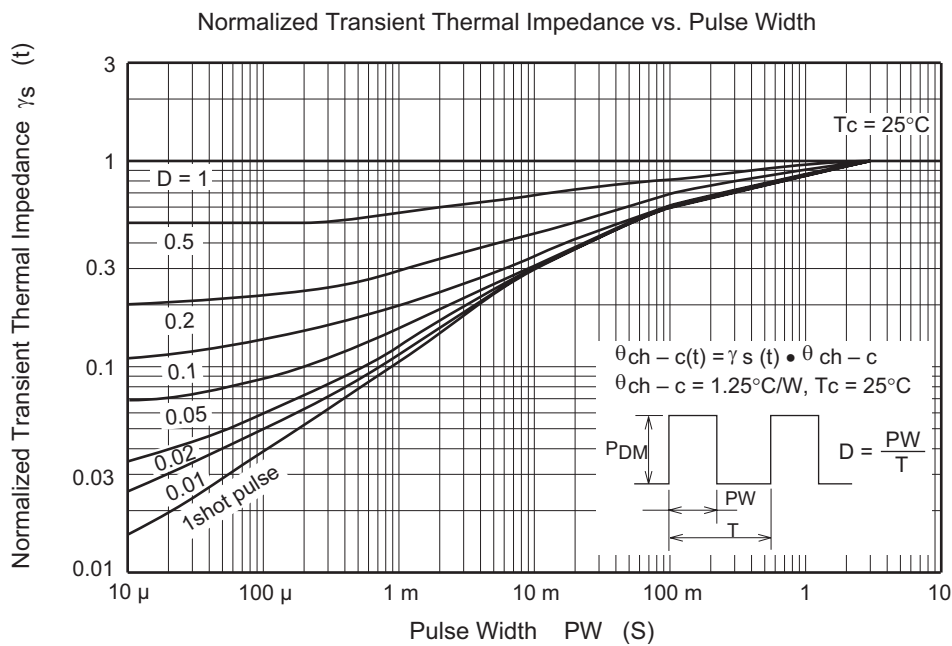
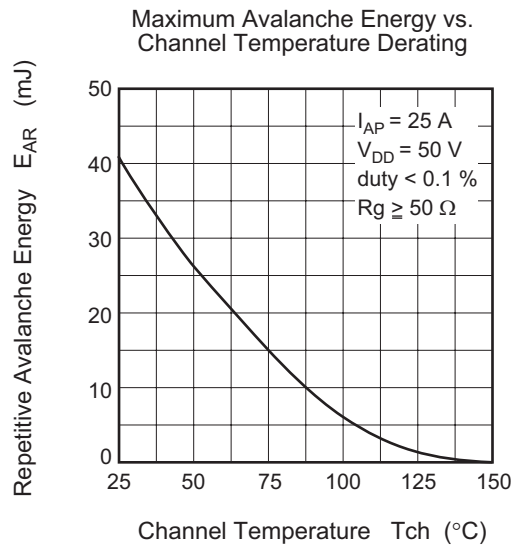
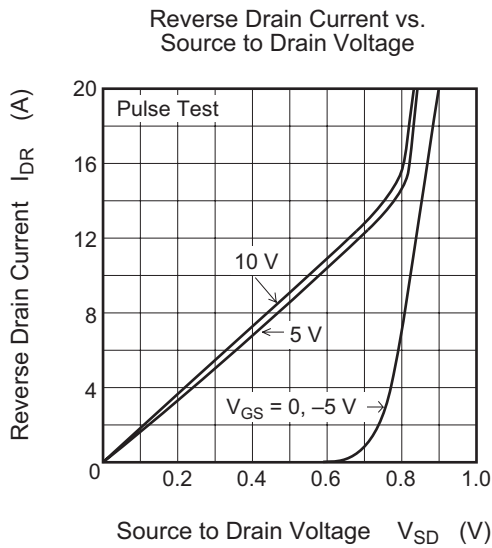
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	V _{(BR)DSS}	200	—	—	V	I _D = 10 mA, V _{GS} = 0
Gate to source breakdown voltage	V _{(BR)GSS}	±20	—	—	V	I _G = ±100 μA, V _{DS} = 0
Gate to source leak current	I _{GSS}	—	—	±10	μA	V _{GS} = ±16 V, V _{DS} = 0
Zero gate voltage drain current	I _{DSS}	—	—	10	μA	V _{DS} = 200 V, V _{GS} = 0
Gate to source cutoff voltage	V _{GS(off)}	1.0	—	2.5	V	I _D = 1 mA, V _{DS} = 10 V
Static drain to source on state resistance	R _{DS(on)}	—	60	75	mΩ	I _D = 15 A, V _{GS} = 10 V ^{Note4}
	R _{DS(on)}	—	65	85	mΩ	I _D = 15 A, V _{GS} = 4 V ^{Note4}
Forward transfer admittance	y _{fs}	18	30	—	S	I _D = 15 A, V _{DS} = 10 V ^{Note4}
Input capacitance	C _{iss}	—	2420	—	pF	V _{DS} = 10 V, V _{GS} = 0, f = 1 MHz
Output capacitance	C _{oss}	—	790	—	pF	
Reverse transfer capacitance	C _{rss}	—	340	—	pF	
Turn-on delay time	t _{d(on)}	—	20	—	ns	I _D = 15 A, V _{GS} = 10 V, R _L = 2 Ω
Rise time	t _r	—	230	—	ns	
Turn-off delay time	t _{d(off)}	—	590	—	ns	
Fall time	t _f	—	330	—	ns	
Body-drain diode forward voltage	V _{DF}	—	0.95	—	V	I _F = 25 A, V _{GS} = 0
Body-drain diode reverse recovery time	t _{rr}	—	230	—	ns	I _F = 25 A, V _{GS} = 0 di _F / dt = 50 A/ μs

Note: 4. Pulse test

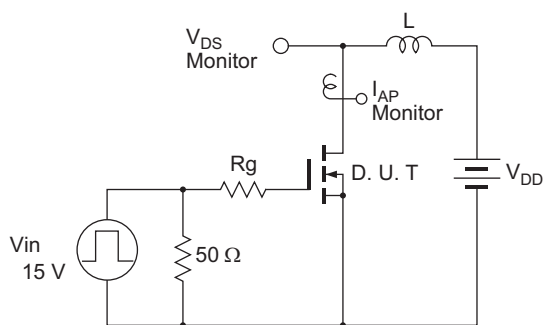
Main Characteristics



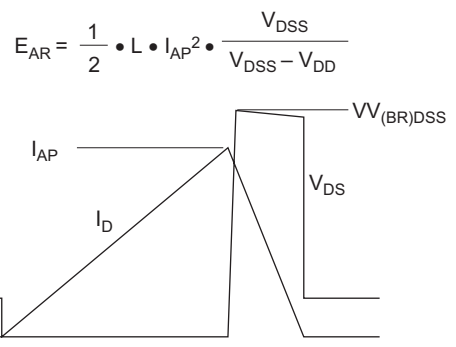


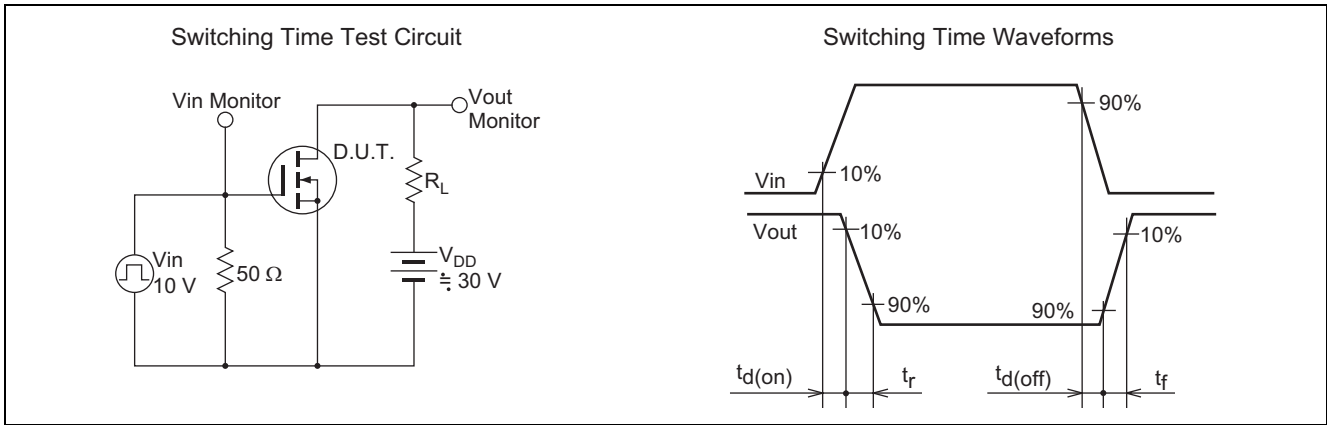


Avalanche Test Circuit



Avalanche Waveform

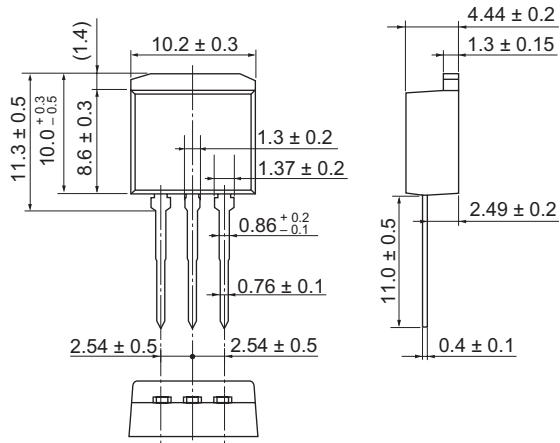




Package Dimensions

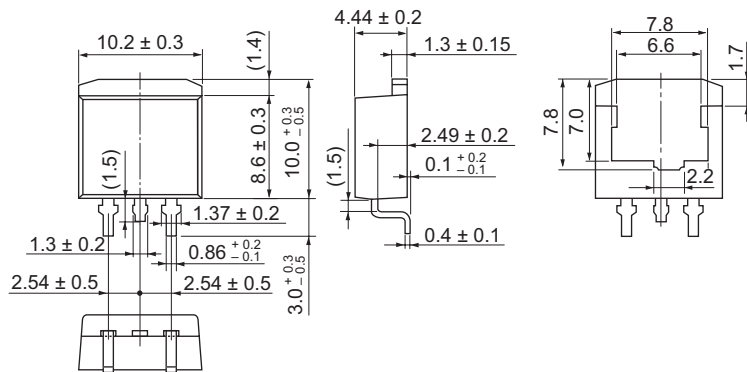
Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
LDBPAK(L)	—	PRSS0004AE-A	LDBPAK(L) / LDBPAK(L)V	1.40g

Unit: mm



Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
LDBPAK(S)-(1)	SC-83	PRSS0004AE-B	LDBPAK(S)-(1) / LDBPAK(S)-(1)V	1.30g

Unit: mm



Ordering Information

Part Name	Quantity	Shipping Container
2SK3211L-E	500 pcs	Box (Sack)
2SK3211STL-E	1000pcs	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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