To our customers,

Old Company Name in Catalogs and Other Documents

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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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Renesas Technology Corp.
Customer Support Dept.
April 1, 2003

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2SK1315(L)(S), 2SK1316(L)(S)

Silicon N-Channel MOS FET

ADE-208-1267 (Z)
1st. Edition
Mar. 2001

Application

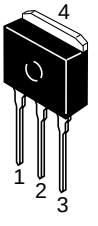
High speed power switching

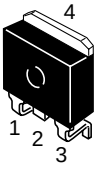
Features

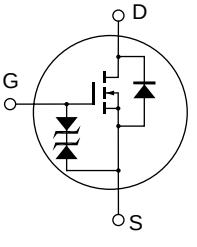
- Low on-resistance
- High speed switching
- Low drive current
- No secondary breakdown
- Suitable for switching regulator, DC-DC converter and motor driver

Outline

LDPAK







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

Absolute Maximum Ratings (Ta = 25°C)

Item		Symbol	Ratings	Unit
Drain to source voltage	2SK1315	V_{DSS}	450	V
	2SK1316		500	
Gate to source voltage		V_{GSS}	±30	V
Drain current		I_D	8	A
Drain peak current		$I_{D(pulse)}$*[1]	32	A
Body to drain diode reverse drain current		I_{DR}	8	A
Channel dissipation		Pch*[2]	60	W
Channel temperature		Tch	150	°C
Storage temperature		Tstg	–55 to +150	°C

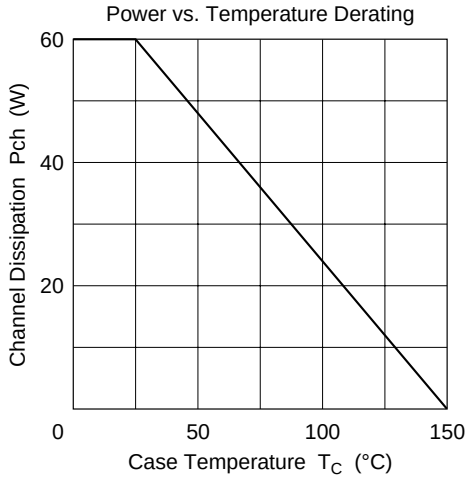
Notes: 1. PW ≤ 10 µs, duty cycle ≤ 1%
2. Value at T_C = 25°C

Electrical Characteristics (Ta = 25°C)

Item		Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	2SK1315	$V_{(BR)DSS}$	450	—	—	V	I_D = 10 mA, V_{GS} = 0
	2SK1316		500				
Gate to source breakdown voltage		$V_{(BR)GSS}$	±30	—	—	V	I_G = ±100 µA, V_{DS} = 0
Gate to source leak current		I_{GSS}	—	—	±10	µA	V_{GS} = ±25 V, V_{DS} = 0
Zero gate voltage drain current	2SK1315	I_{DSS}	—	—	250	µA	V_{DS} = 360 V, V_{GS} = 0
	2SK1316						V_{DS} = 400 V, V_{GS} = 0
Gate to source cutoff voltage		$V_{GS(off)}$	2.0	—	3.0	V	I_D = 1 mA, V_{DS} = 10 V
Static Drain to source on state resistance	2SK1315	$R_{DS(on)}$	—	0.55	0.7	Ω	I_D = 4 A, V_{GS} = 10 V *[1]
	2SK1316		—	0.60	0.8		
Forward transfer admittance		|yfs|	4.5	7.5	—	S	I_D = 4 A, V_{DS} = 10 V *[1]
Input capacitance		Ciss	—	1150	—	pF	V_{DS} = 10 V, V_{GS} = 0, f = 1 MHz
Output capacitance		Coss	—	340	—	pF	
Reverse transfer capacitance		Crss	—	55	—	pF	
Turn-on delay time		$t_{d(on)}$	—	17	—	ns	I_D = 4 A, V_{GS} = 10 V, R_L = 7.5 Ω
Rise time		t_r	—	55	—	ns	
Turn-off delay time		$t_{d(off)}$	—	100	—	ns	
Fall time		t_f	—	45	—	ns	
Body to drain diode forward voltage		V_{DF}	—	0.9	—	V	I_F = 8 A, V_{GS} = 0
Body to drain diode reverse recovery time		t_{rr}	—	350	—	ns	I_F = 8 A, V_{GS} = 0, di_F/dt = 100 A/µs

Note: 1. Pulse test

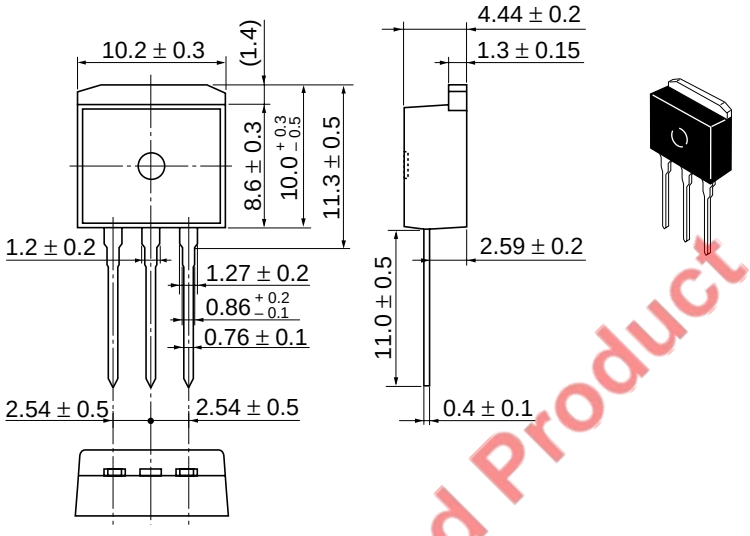
See characteristic curves of 2SK1159, 2SK1160.



Package Dimensions

As of January, 2001

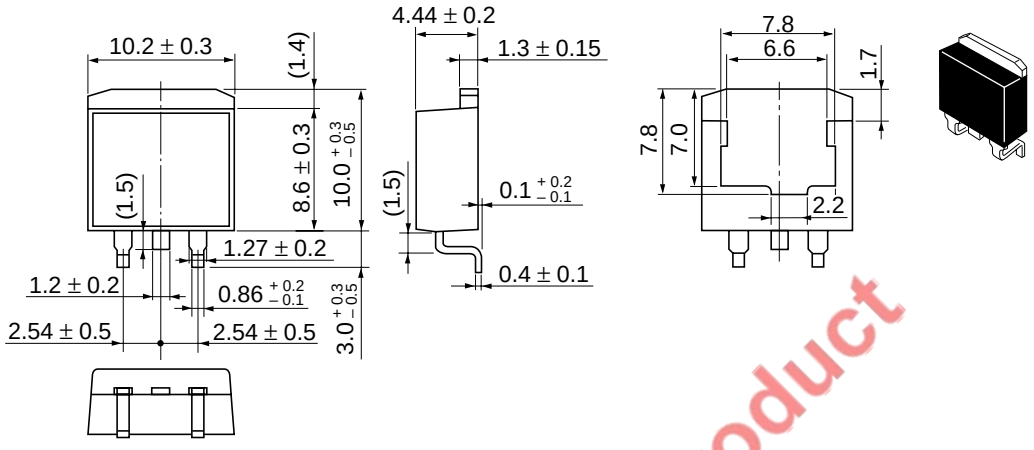
Unit: mm



Hitachi Code	LDPAK (L)
JEDEC	—
EIAJ	—
Mass (reference value)	1.4 g

As of January, 2001

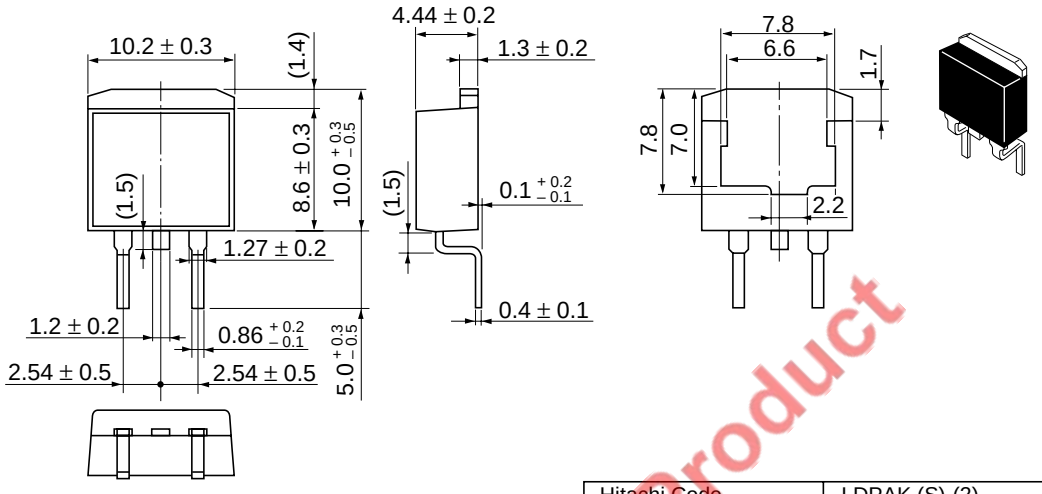
Unit: mm



Hitachi Code	LDPAK (S)-(1)
JEDEC	—
EIAJ	—
Mass (reference value)	1.3 g

As of January, 2001

Unit: mm



Hitachi Code	LDPAK (S)-(2)
JEDEC	—
EIAJ	—
Mass (reference value)	1.35 g

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