2SJ486

Silicon P Channel MOS FET

REJ03G0869-0300
(Previous: ADE-208-512A)
Rev.3.00
Sep 07, 2005

Description

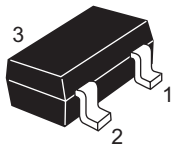
Low frequency power switching

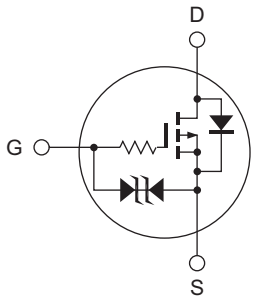
Features

- Low on-resistance
  $R_{DS\ (on)}$ = 0.5 Ω typ. (at V_{GS} = –4 V, I_D = –100 mA)
- 2.5 V gate drive devices.
- Small package (MPAK).

Outline

RENESAS Package code: PLSP0003ZB-A
(Package name: MPAK)





1. Source
2. Gate
3. Drain

Note: Marking is “ZU–”.

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Value	Unit
Drain to source voltage	V_{DSS}	–30	V
Gate to source voltage	V_{GSS}	±10	V
Drain current	I_D	–0.3	A
Drain peak current	$I_{D\ (pulse)}$ Note 1	–0.6	A
Channel dissipation	Pch	150	mW
Channel temperature	Tch	150	°C
Storage temperature	Tstg	–55 to +150	°C

Note: 1. PW ≤ 100 µs, duty cycle ≤ 10%

Electrical Characteristics

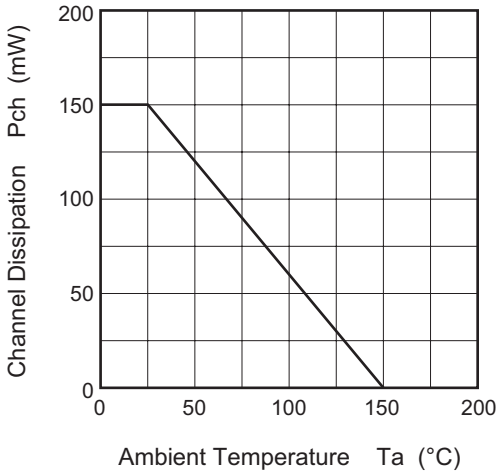
(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)\ DSS}$	–30	—	—	V	I_D = –10 µA, V_{GS} = 0
Gate to source breakdown voltage	$V_{(BR)\ GSS}$	±10	—	—	V	I_G = ±100 µA, V_{DS} = 0
Zero gate voltage drain current	I_{DSS}	—	—	–1.0	µA	V_{DS} = –30 V, V_{GS} = 0
Gate to source leak current	I_{GSS}	—	—	±5.0	µA	V_{GS} = ±6.5 V, V_{DS} = 0
Gate to source cutoff voltage	$V_{GS\ (off)}$	–0.5	—	–1.5	V	I_D = –10 µA, V_{DS} = –5 V
Static drain to source on state resistance	$R_{DS\ (on)}$	—	0.5	0.65	Ω	I_D = –100 mA, V_{GS} = –4 V Note 2
	$R_{DS\ (on)}$	—	0.7	1.2	Ω	I_D = –100 mA, V_{GS} = –2.5 V Note 2
Forward transfer admittance	$\|y_{fs}\|$	0.4	0.65	—	S	I_D = –100 mA, V_{DS} = –10 V Note 2
Input capacitance	Ciss	—	45	—	pF	V_{DS} = –10 V
Output capacitance	Coss	—	76	—	pF	V_{GS} = 0
Reverse transfer capacitance	Crss	—	5.4	—	pF	f = 1 MHz
Turn-on delay time	$t_{d\ (on)}$	—	120	—	ns	V_{GS} = –4 V
Rise time	t_r	—	340	—	ns	I_D = –150 mA
Turn-off delay time	$t_{d\ (off)}$	—	850	—	ns	R_L = 66.6 Ω
Fall time	t_f	—	550	—	ns	

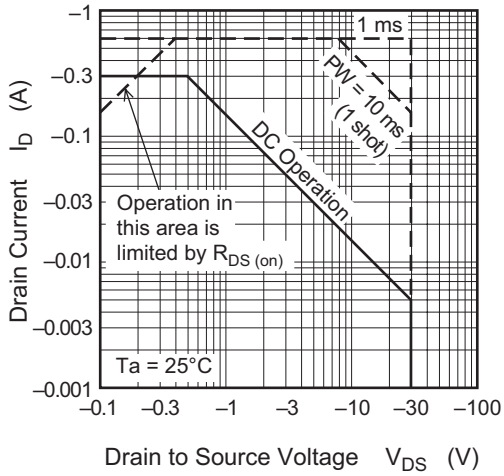
Note: 2. Pulse test

Main Characteristics

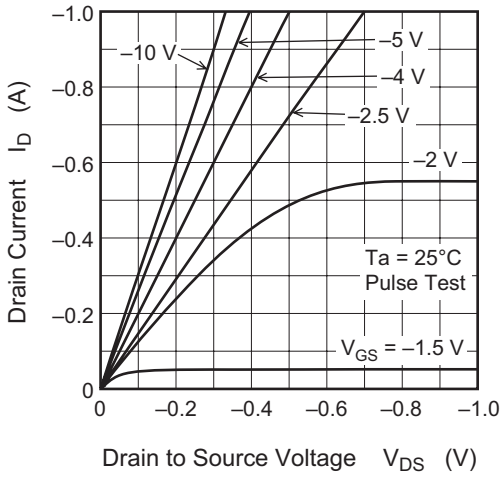
Power vs. Temperature Derating



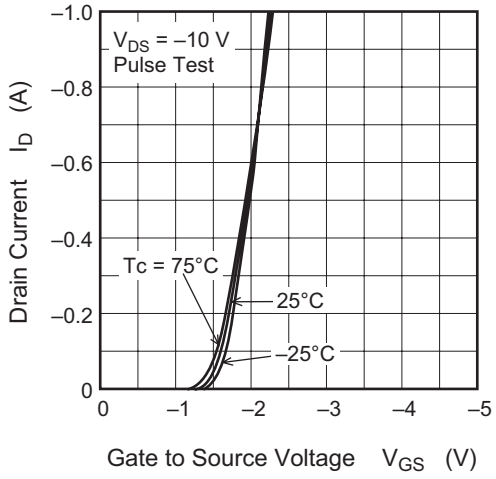
Maximum Safe Operation Area



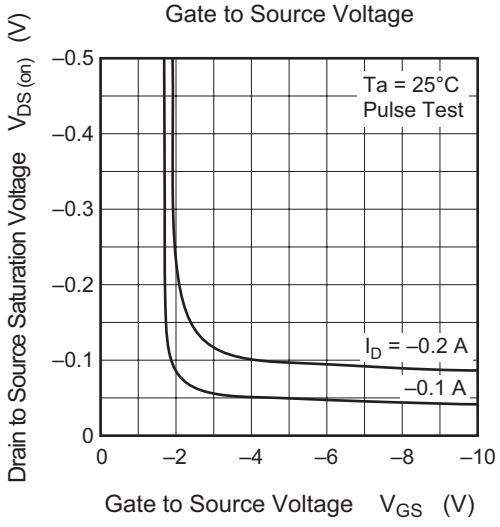
Typical Output Characteristics



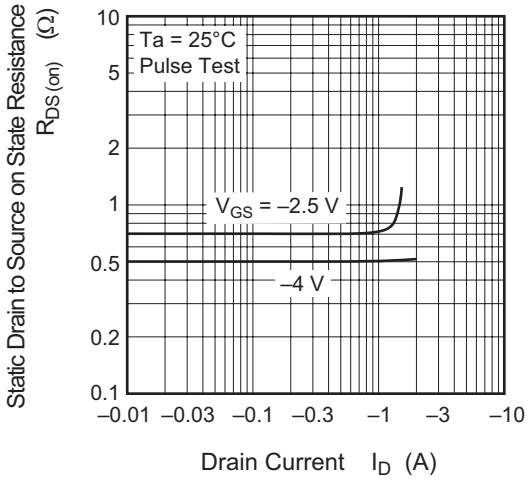
Typical Transfer Characteristics



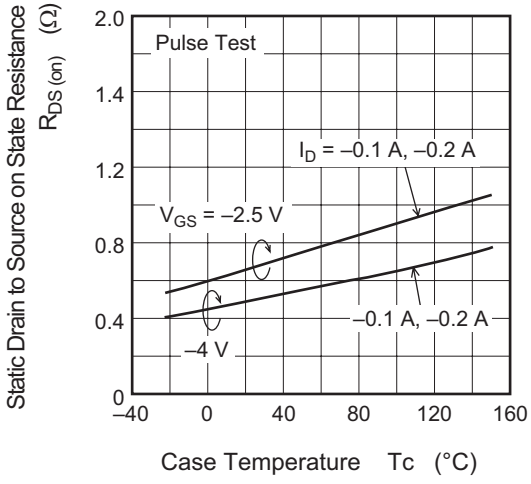
Drain to Source Saturation Voltage vs.
Gate to Source Voltage



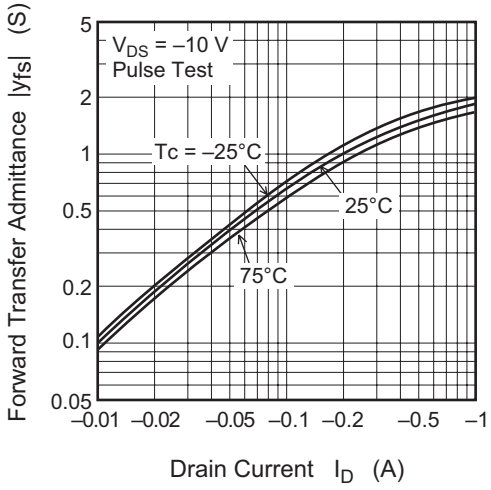
Static Drain to Source on State Resistance
vs. Drain Current



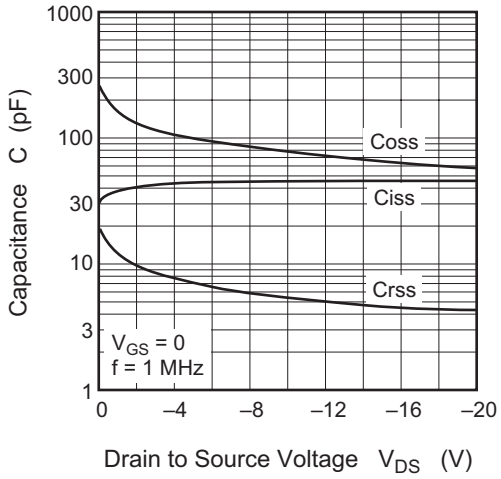
Static Drain to Source on State Resistance vs. Temperature



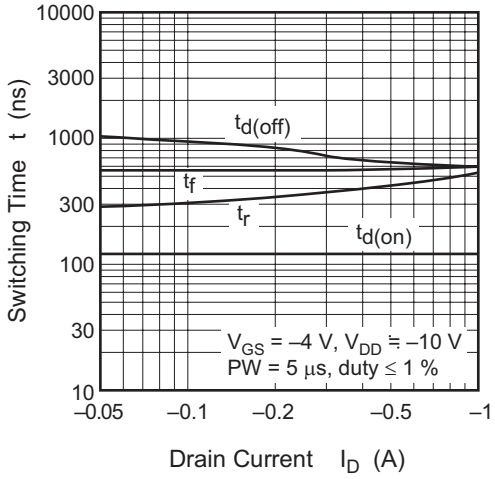
Forward Transfer Admittance vs. Drain Current



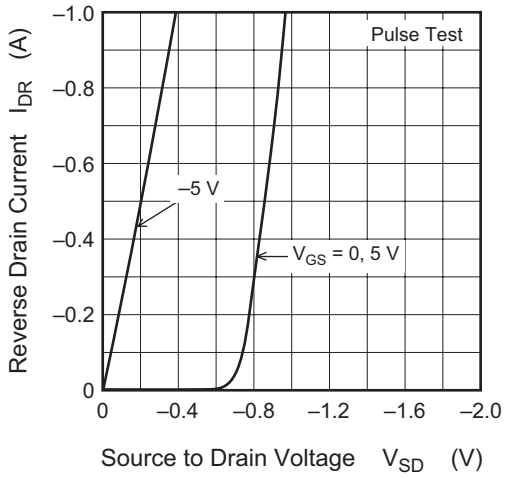
Typical Capacitance vs. Drain to Source Voltage



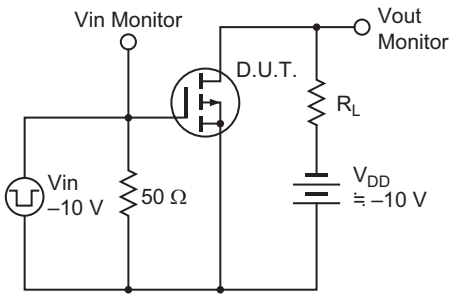
Switching Characteristics



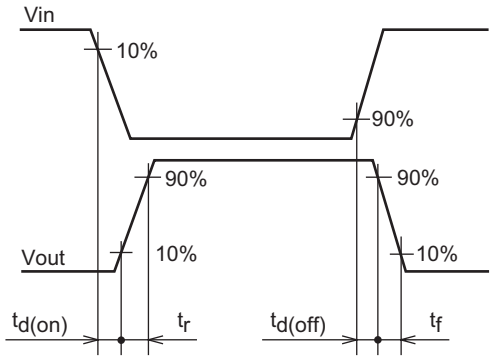
Reverse Drain Current vs. Source to Drain Voltage



Switching Time Test Circuit

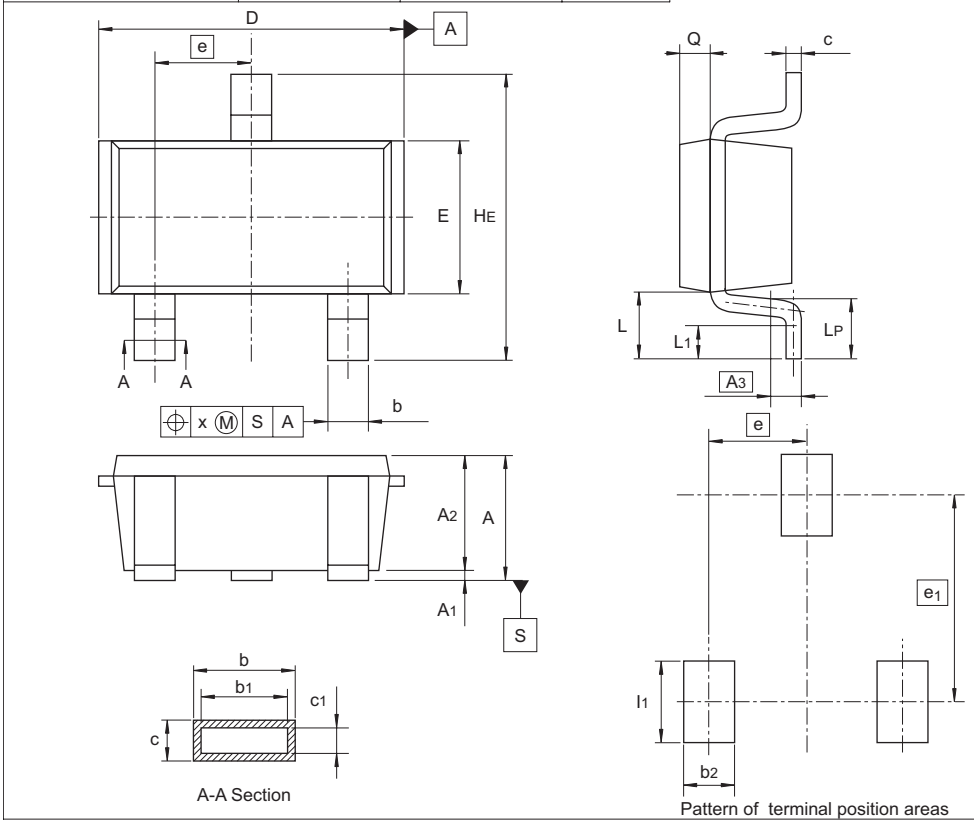


Waveform



Package Dimensions

JEITA Package Code	RENESAS Code	Package Name	MASS[Typ.]
SC-59A	PLSP0003ZB-A	MPAK(T) / MPAK(T)V, MPAK / MPAKV	0.011g



Reference Symbol	Dimension in Millimeters		
	Min	Nom	Max
A	1.0	—	1.3
A_1	0	—	0.1
A_2	1.0	1.1	1.2
A_3	—	0.25	—
b	0.35	0.42	0.5
b_1	—	0.4	—
c	0.1	0.13	0.15
c_1	—	0.11	—
D	2.7	—	3.1
E	1.35	1.5	1.65
e	—	0.95	—
H_E	2.2	2.8	3.0
L	0.35	—	0.75
L_1	0.15	—	0.55
L_P	0.25	—	0.65
x	—	—	0.05
b_2	—	—	0.55
e_1	—	1.95	—
l_1	—	—	1.05
Q	—	0.3	—

Ordering Information

Part Name	Quantity	Shipping Container
2SJ486ZU-TL-E	3000 pcs	Taping
2SJ486ZU-TR-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.

Renesas Technology Corp. Sales Strategic Planning Div. Nippon Bldg., 2-6-2, Ohte-machi, Chiyoda-ku, Tokyo 100-0004, Japan

RENESAS SALES OFFICES

http://www.renesas.com

Refer to "**http://www.renesas.com/en/network**" for the latest and detailed information.

Renesas Technology America, Inc.
450 Holger Way, San Jose, CA 95134-1368, U.S.A
Tel: <1> (408) 382-7500, Fax: <1> (408) 382-7501

Renesas Technology Europe Limited
Dukes Meadow, Millboard Road, Bourne End, Buckinghamshire, SL8 5FH, U.K.
Tel: <44> (1628) 585-100, Fax: <44> (1628) 585-900

Renesas Technology Hong Kong Ltd.
7th Floor, North Tower, World Finance Centre, Harbour City, 1 Canton Road, Tsimshatsui, Kowloon, Hong Kong
Tel: <852> 2265-6688, Fax: <852> 2730-6071

Renesas Technology Taiwan Co., Ltd.
10th Floor, No.99, Fushing North Road, Taipei, Taiwan
Tel: <886> (2) 2715-2888, Fax: <886> (2) 2713-2999

Renesas Technology (Shanghai) Co., Ltd.
Unit2607 Ruijing Building, No.205 Maoming Road (S), Shanghai 200020, China
Tel: <86> (21) 6472-1001, Fax: <86> (21) 6415-2952

Renesas Technology Singapore Pte. Ltd.
1 Harbour Front Avenue, #06-10, Keppel Bay Tower, Singapore 098632
Tel: <65> 6213-0200, Fax: <65> 6278-8001

Renesas Technology Korea Co., Ltd.
Kukje Center Bldg. 18th Fl., 191, 2-ka, Hangang-ro, Yongsan-ku, Seoul 140-702, Korea
Tel: <82> 2-796-3115, Fax: <82> 2-796-2145

Renesas Technology Malaysia Sdn. Bhd.
Unit 906, Block B, Menara Amcorp, Amcorp Trade Centre, No.18, Jalan Persiaran Barat, 46050 Petaling Jaya, Selangor Darul Ehsan, Malaysia
Tel: <603> 7955-9390, Fax: <603> 7955-9510

Colophon .3.0