
2SJ506(L), 2SJ506(S)

Silicon P Channel MOS FET
High Speed Power Switching

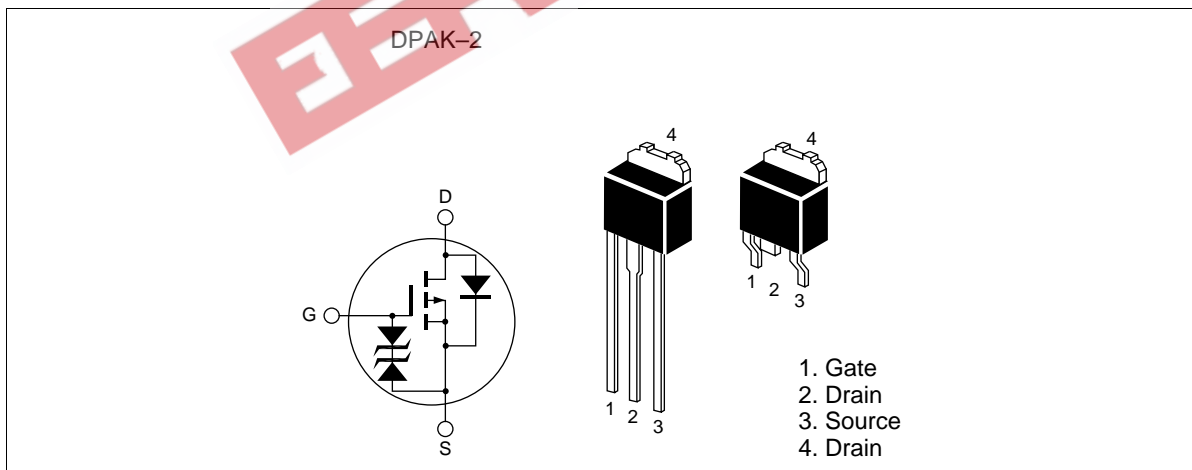
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ADE-208-548
Target Specification 1st. Edition

Features

- Low on-resistance
 $R_{DS(on)} = 0.065 \Omega$ typ. (at $V_{GS} = -10V$, $I_D = -5A$)
- Low drive current
- High speed switching
- 4V gate drive devices.

Outline



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Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V _{DSS}	-30	V
Gate to source voltage	V _{GSS}	±20	V
Drain current	I _D	-10	A
Drain peak current	I _{D(pulse)} ^{Note1}	-40	A
Body to drain diode reverse drain current	I _{DR}	-10	A
Channel dissipation	Pch ^{Note2}	20	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

Notes: 1. PW ≤ 10μs, duty cycle ≤ 1 %

2. Value at Tc = 25°C

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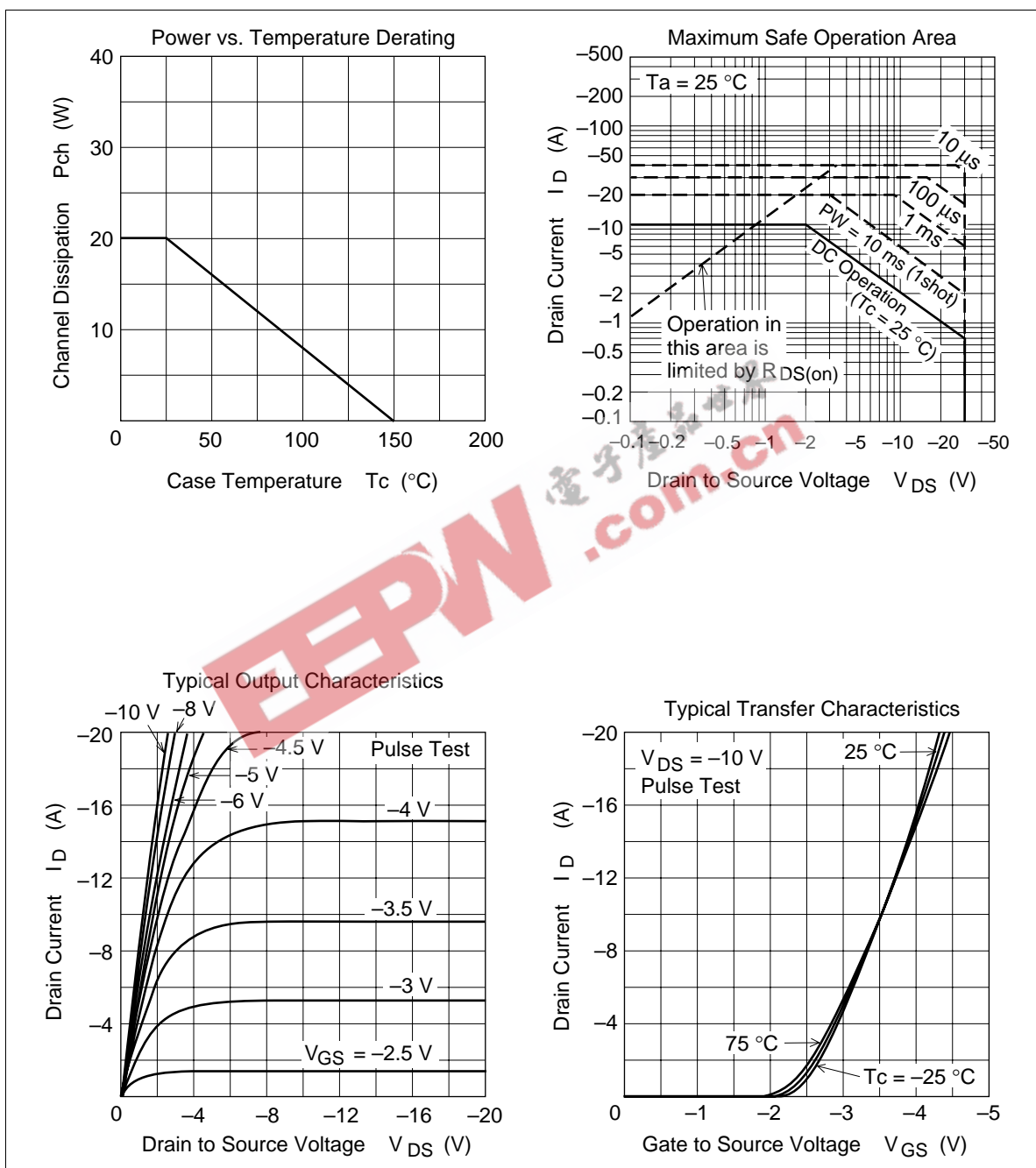
Electrical Characteristics (T_a = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	-30	—	—	V	$I_D = -10\text{mA}, V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	±20	—	—	V	$I_G = \pm 100\mu\text{A}, V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	-10	μA	$V_{DS} = -30\text{V}, V_{GS} = 0$
Gate to source leak current	I_{GSS}	—	—	±10	μA	$V_{GS} = \pm 16\text{V}, V_{DS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	-1.0	—	-2.0	V	$I_D = -1\text{mA}, V_{DS} = -10\text{V}$
Static drain to source on state resistance	$R_{DS(on)}$	—	65	85	mΩ	$I_D = -5\text{A}, V_{GS} = -10\text{V}^{\text{Note3}}$
	$R_{DS(on)}$	—	110	180	mΩ	$I_D = -5\text{A}, V_{GS} = -4\text{V}^{\text{Note3}}$
Forward transfer admittance	$ y_{fs} $	10	16	—	S	$I_D = -5\text{A}, V_{DS} = -10\text{V}^{\text{Note3}}$
Input capacitance	C_{iss}	—	660	—	pF	$V_{DS} = -10\text{V}$
Output capacitance	C_{oss}	—	440	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	C_{rss}	—	140	—	pF	$f = 1\text{MHz}$
Turn-on delay time	$t_{d(on)}$	—	12	—	ns	$I_D = -5\text{A}, R_L = 2\Omega$
Rise time	t_r	—	65	—	ns	$V_{GS} = -10\text{V}$
Turn-off delay time	$t_{d(off)}$	—	85	—	ns	
Fall time	t_f	—	65	—	ns	
Body to drain diode forward voltage	V_{DF}	—	-1.05	—	V	$I_F = -10\text{A}, V_{GS} = 0$
Body to drain diode reverse recovery time	t_{rr}	—	65	—	ns	$I_F = -10\text{A}, V_{GS} = 0$ $di_F/dt = 50\text{A}/\mu\text{s}$

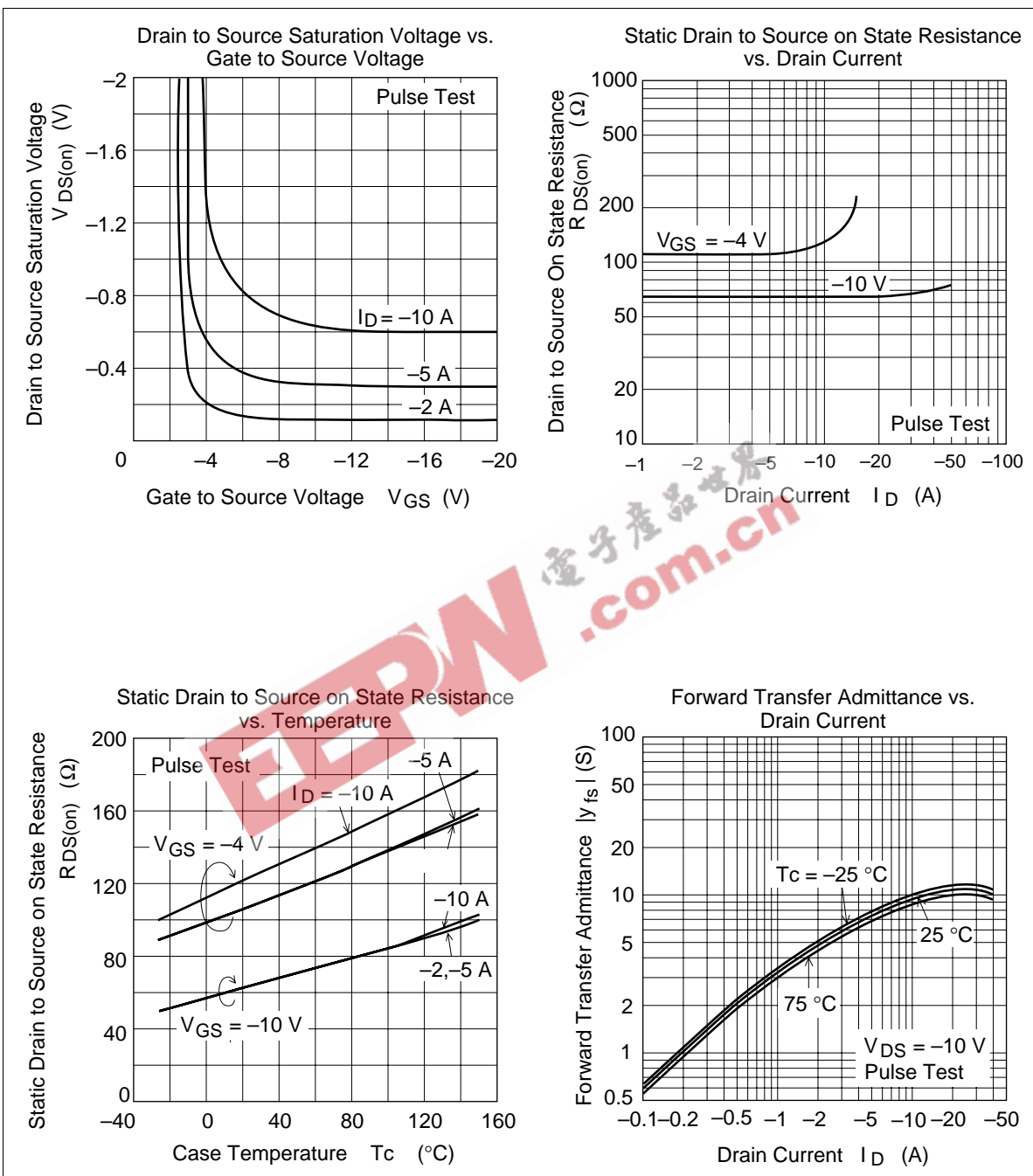
Note: 3. Pulse test

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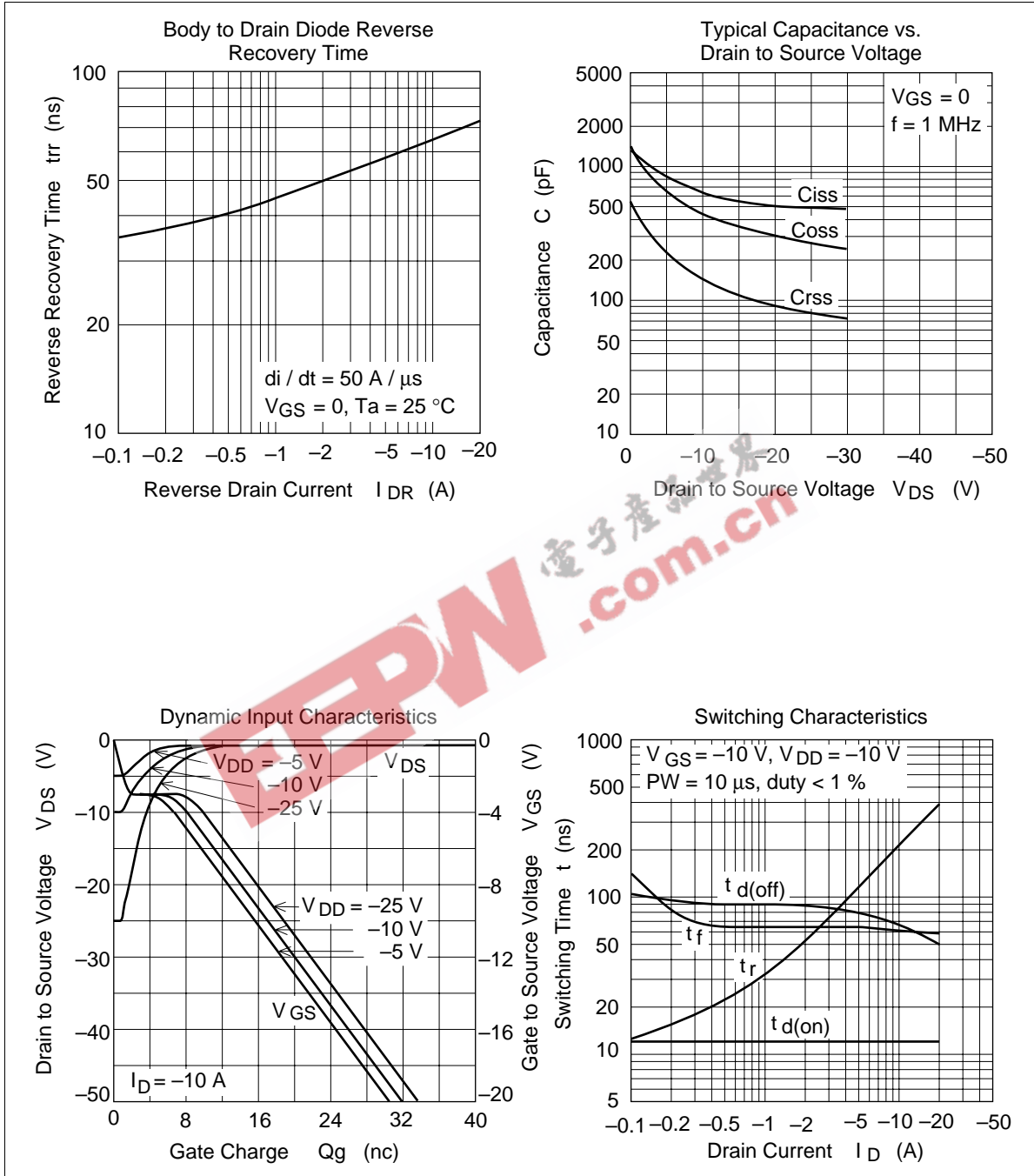
Main Characteristics

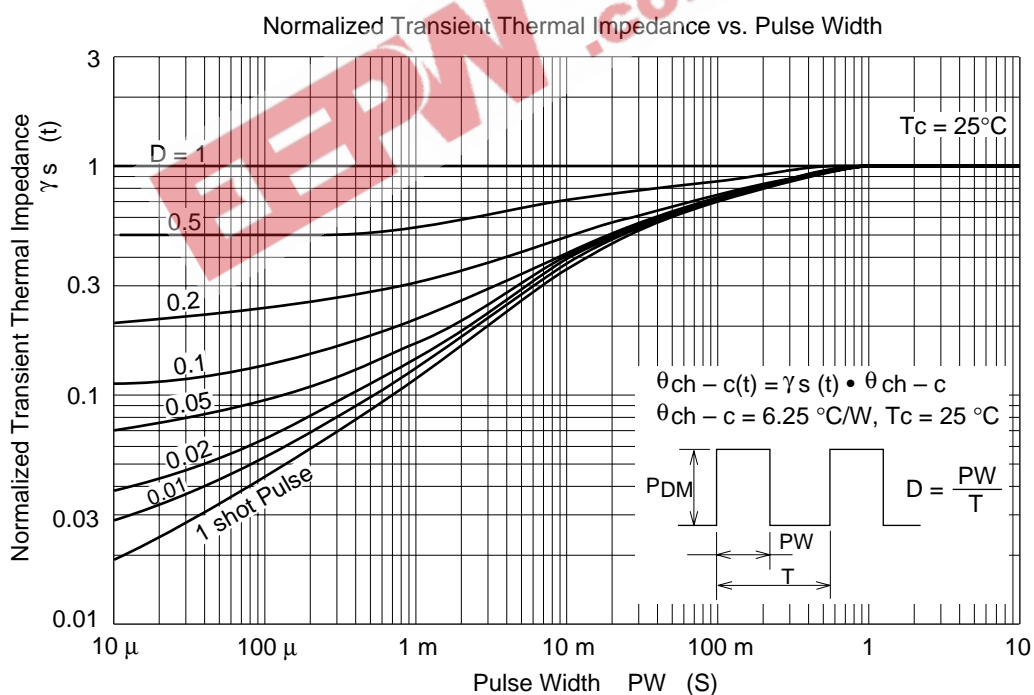
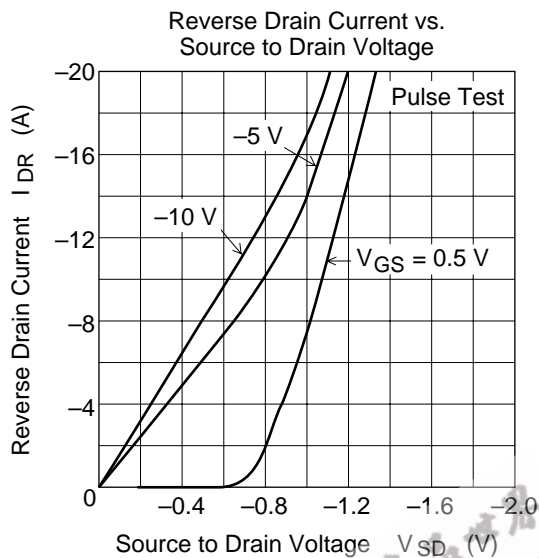


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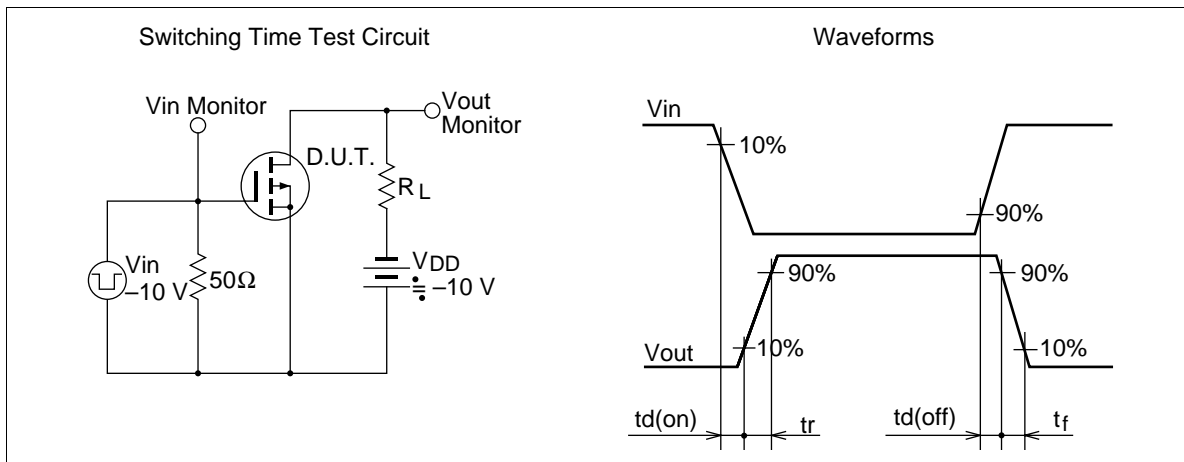


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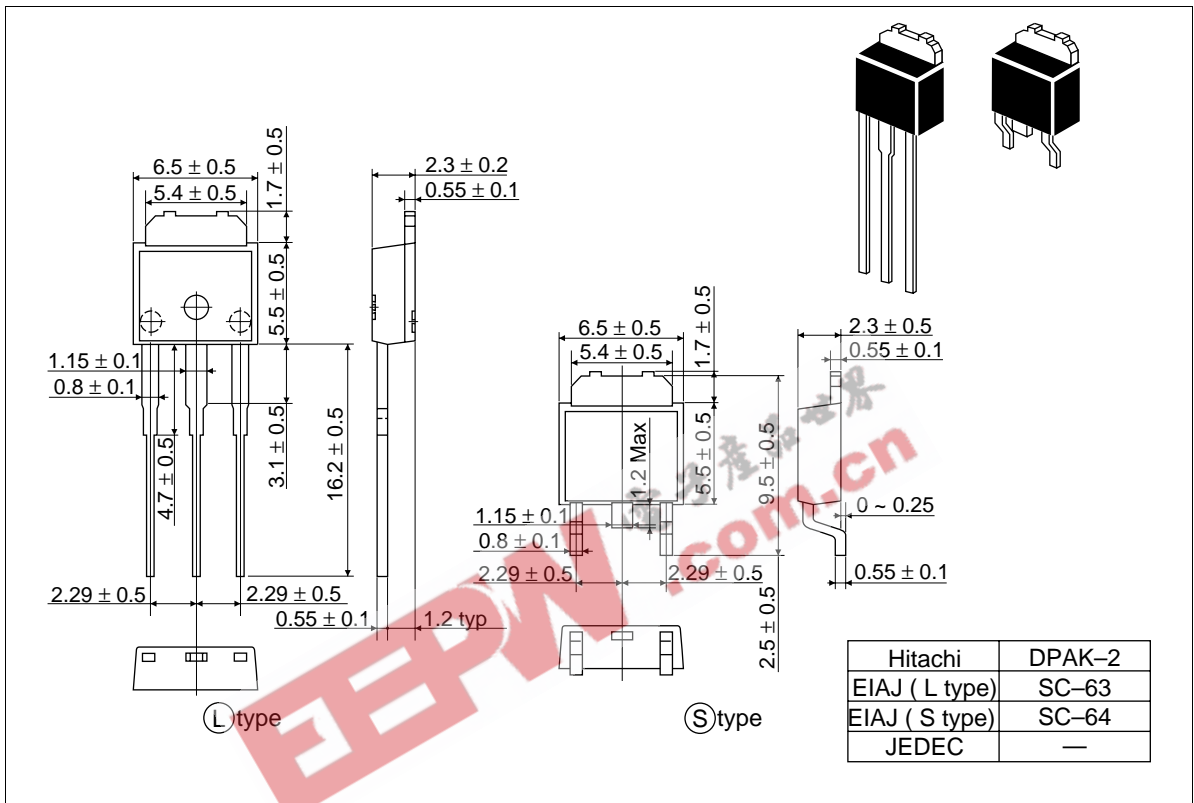


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2SJ506(L), 2SJ506(S)

Package Dimensions

Unit: mm



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Hitachi, Ltd.

Semiconductor & Integrated Circuits.
Nippon Bldg., 2-6-2, Ohte-machi, Chiyoda-ku, Tokyo 100-0004, Japan
Tel: Tokyo (03) 3270-2111 Fax: (03) 3270-5109

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For further information write to:

Hitachi Semiconductor
(America) Inc.
179 East Tasman Drive,
San Jose, CA 95134
Tel: <1> (408) 433-1990
Fax: <1> (408) 433-0223

Hitachi Europe GmbH
Electronic components Group
Dornacher StraÙe 3
D-85622 Feldkirchen, Munich
Germany
Tel: <49> (89) 9 9180-0
Fax: <49> (89) 9 29 30 00

Hitachi Europe Ltd.
Electronic Components Group.
Whitebrook Park
Lower Cookham Road
Maidenhead
Berkshire SL6 8YA, United Kingdom
Tel: <44> (1628) 585000
Fax: <44> (1628) 778322

Hitachi Asia Pte. Ltd.
16 Collyer Quay #20-00
Hitachi Tower
Singapore 049318
Tel: 535-2100
Fax: 535-1533

Hitachi Asia Ltd.
Taipei Branch Office
3F, Hung Kuo Building, No.167,
Tun-Hwa North Road, Taipei (105)
Tel: <886> (2) 2718-3666
Fax: <886> (2) 2718-8180

Hitachi Asia (Hong Kong) Ltd.
Group III (Electronic Components)
7/F., North Tower, World Finance Centre,
Harbour City, Canton Road, Tsim Sha Tsui,
Kowloon, Hong Kong
Tel: <852> (2) 735 9218
Fax: <852> (2) 730 0281
Telex: 40815 HITEC HX

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