2SJ479(L), 2SJ479(S)

Silicon P Channel DV–L MOS FET
High Speed Power Switching

HITACHI

ADE-208-541
1st. Edition

Features

- Low on-resistance
  $R_{DS(on)}$ = 25 mΩ typ.
- 4V gate drive devices.
- High speed switching

Outline

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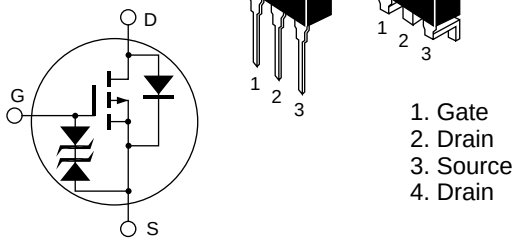

1. Gate
2. Drain
3. Source
4. Drain

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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	–30	A
Drain peak current	$I_{D(pulse)}$ Note1	–120	A
Body to drain diode reverse drain current	I_{DR}	–30	A
Channel dissipation	Pch Note2	50	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

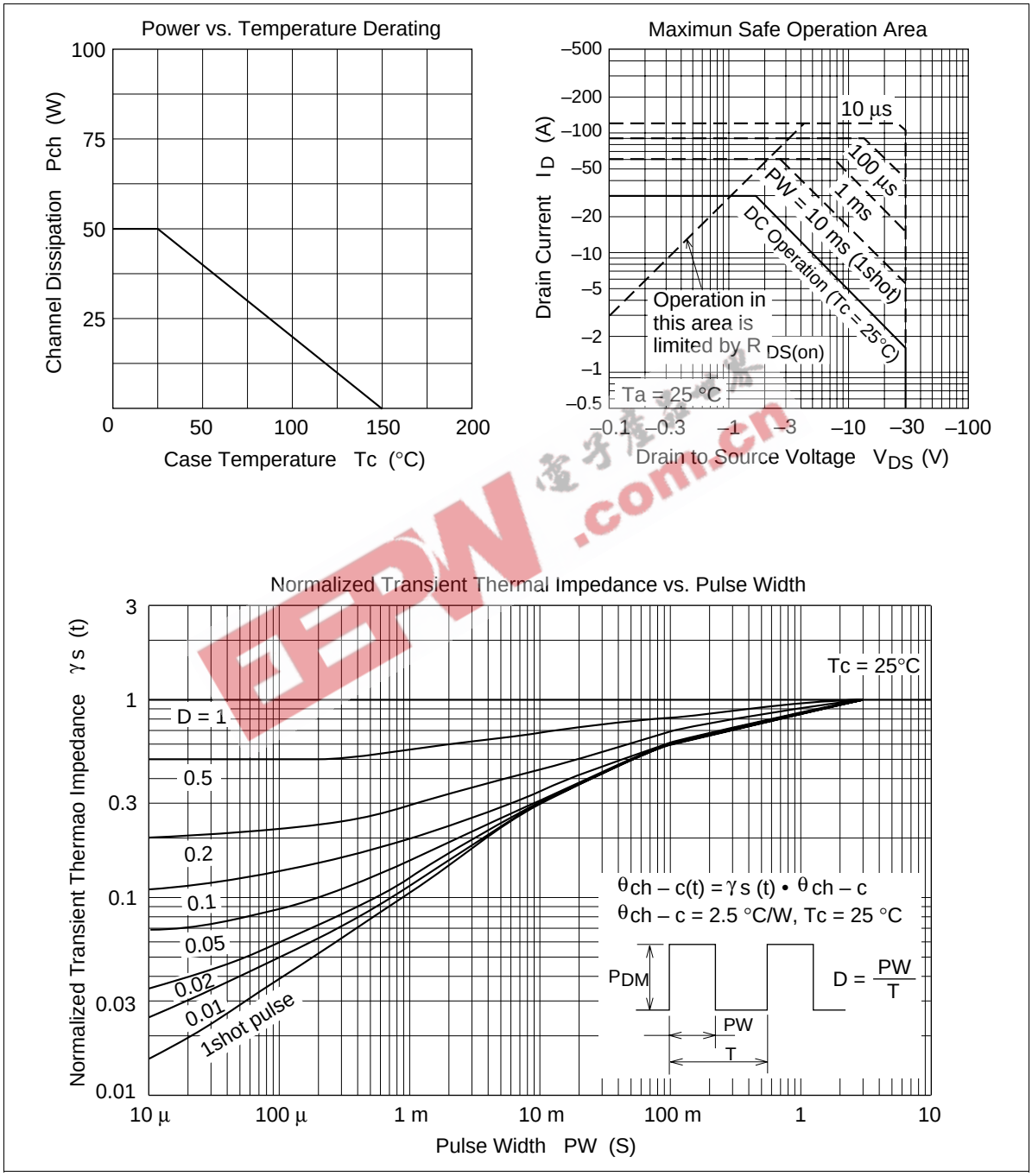
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	–30	—	—	V	I_D = –10mA, V_{GS} = 0
Gate to source breakdown voltage	$V_{(BR)GSS}$	±20	—	—	V	I_G = ±100µA, V_{DS} = 0
Zero gate voltege drain current	I_{DSS}	—	—	–10	µA	V_{DS} = –30 V, V_{GS} = 0
Gate to source leak current	I_{GSS}	—	—	±10	µA	V_{GS} = ±16V, V_{DS} = 0
Gate to source cutoff voltage	$V_{GS(off)}$	–1.0	—	–2.0	V	I_D = –1mA, V_{DS} = –10V
Static drain to source on state resistance	$R_{DS(on)}$	—	25	35	mΩ	I_D = –15A, V_{GS} = –10V Note3
	$R_{DS(on)}$	—	40	60	mΩ	I_D = –15A, V_{GS} = –4V Note3
Forward transfer admittance	$\|y_{fs}\|$	12	20	—	S	I_D = –15A, V_{DS} = –10V Note3
Input capacitance	Ciss	—	1700	—	pF	V_{DS} = –10V
Output capacitance	Coss	—	950	—	pF	V_{GS} = 0
Reverse transfer capacitance	Crss	—	260	—	pF	f = 1MHz
Turn-on delay time	$t_{d(on)}$	—	20	—	ns	V_{GS} = –10V, I_D = –15A
Rise time	t_r	—	290	—	ns	R_L = 0.67Ω
Turn-off delay time	$t_{d(off)}$	—	170	—	ns	
Fall time	t_f	—	130	—	ns	
Body to drain diode forward voltage	V_{DF}	—	–1.1	—	V	I_F = –30A, V_{GS} = 0
Body to drain diode reverse recovery time	t_{rr}	—	70	—	ns	I_F = –30A, V_{GS} = 0 diF/ dt = 50A/µs

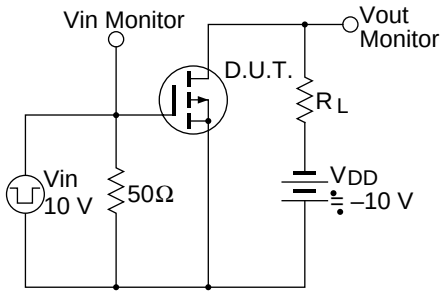
Note: 3. Pulse test

See characteristic curves of 2SJ471

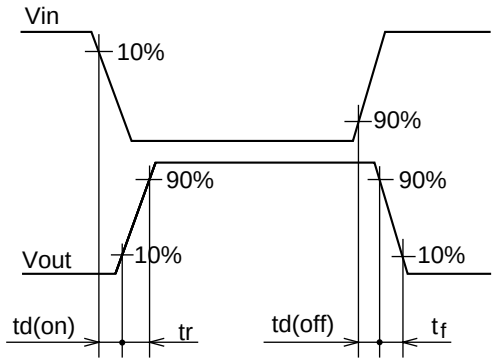
Main Characteristics



Switching Timen Test Circuit

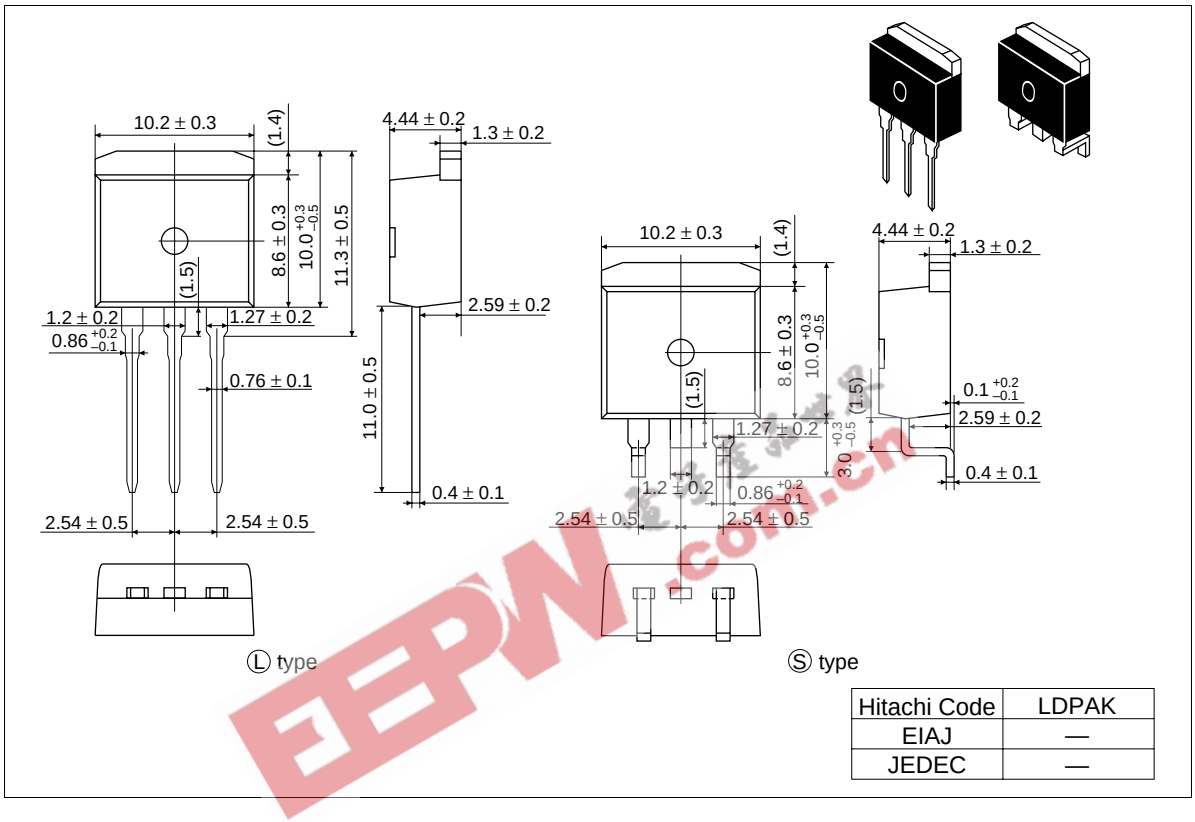


Waveform



Package Dimensions

Unit: mm



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