

2SJ479(L), 2SJ479(S)

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

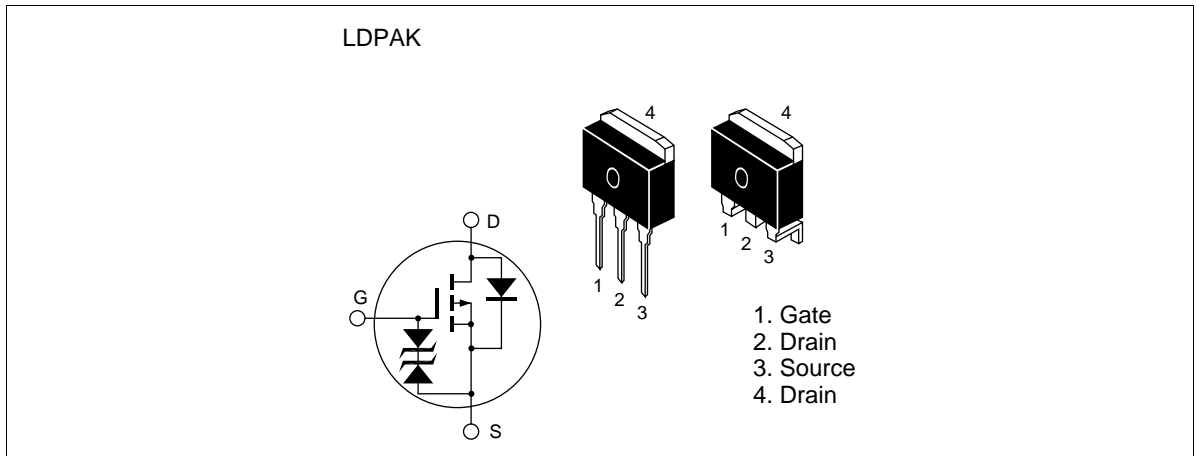
HITACHI

ADE-208-541 (Z)
1st. Edition
Sep. 1997

Features

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

Outline



2SJ479(L), 2SJ479(S)

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	P _{ch} ^{Note2}	50	W
Channel temperature	T _{ch}	150	°C
Storage temperature	T _{stg}	-55 to +150	°C

Notes: 1. PW ≤ 10μs, duty cycle ≤ 1 %

2. Value at Tc = 25°C

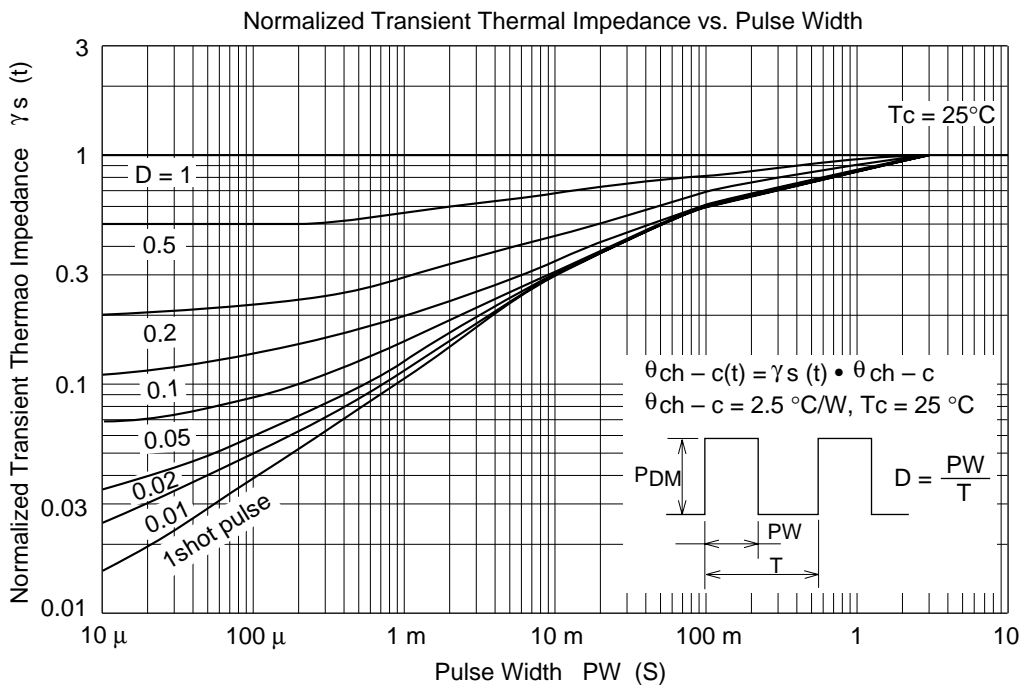
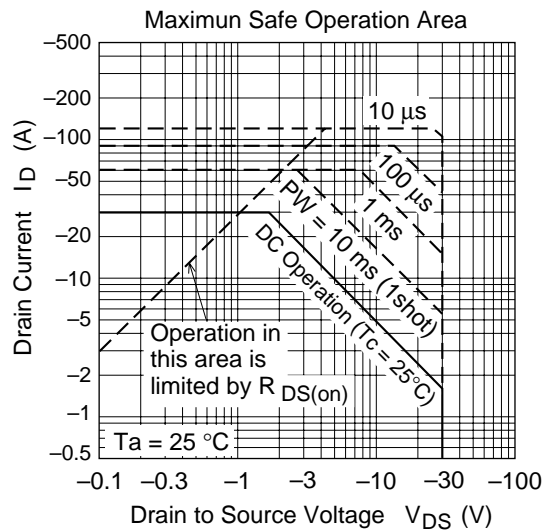
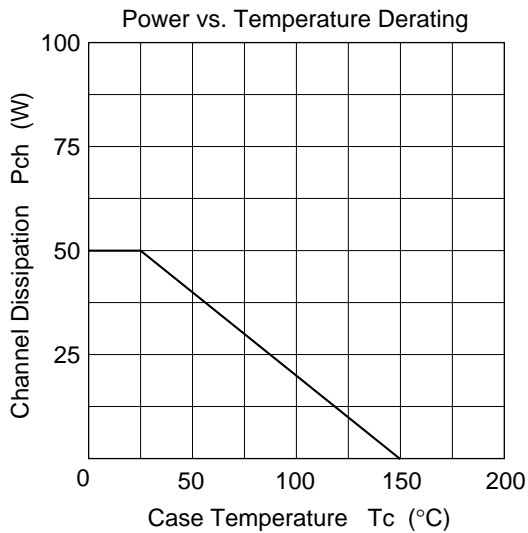
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	-30	—	—	V	$I_D = -10\text{mA}$, $V_{GS} = 0$
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	$R_{DS(on)}$	—	25	35	mΩ	$I_D = -15\text{A}$, $V_{GS} = -10\text{V}$ ^{Note3}
	$R_{DS(on)}$	—	40	60	mΩ	$I_D = -15\text{A}$, $V_{GS} = -4\text{V}$ ^{Note3}
Forward transfer admittance	$ y_{fs} $	12	20	—	S	$I_D = -15\text{A}$, $V_{DS} = -10\text{V}$ ^{Note3}
Input capacitance	C_{iss}	—	1700	—	pF	$V_{DS} = -10\text{V}$
Output capacitance	C_{oss}	—	950	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	C_{rss}	—	260	—	pF	$f = 1\text{MHz}$
Turn-on delay time	$t_{d(on)}$	—	20	—	ns	$V_{GS} = -10\text{V}$, $I_D = -15\text{A}$
Rise time	t_r	—	290	—	ns	$R_L = 0.67\Omega$
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	$I_F = -30\text{A}$, $V_{GS} = 0$
Body to drain diode reverse recovery time	t_{rr}	—	70	—	ns	$I_F = -30\text{A}$, $V_{GS} = 0$ $di_F/dt = 50\text{A}/\mu\text{s}$

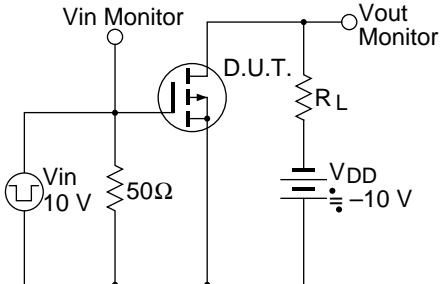
Note: 3. Pulse test

See characteristic curves of 2SJ471

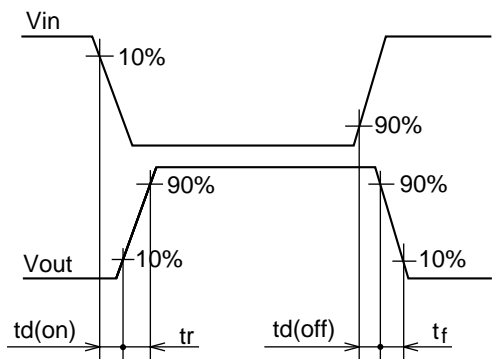
Main Characteristics



Switching Timen Test Circuit



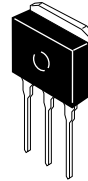
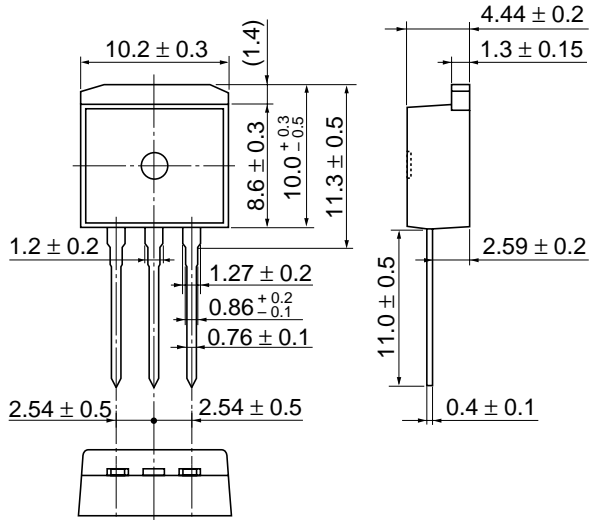
Waveform



2SJ479(L), 2SJ479(S)

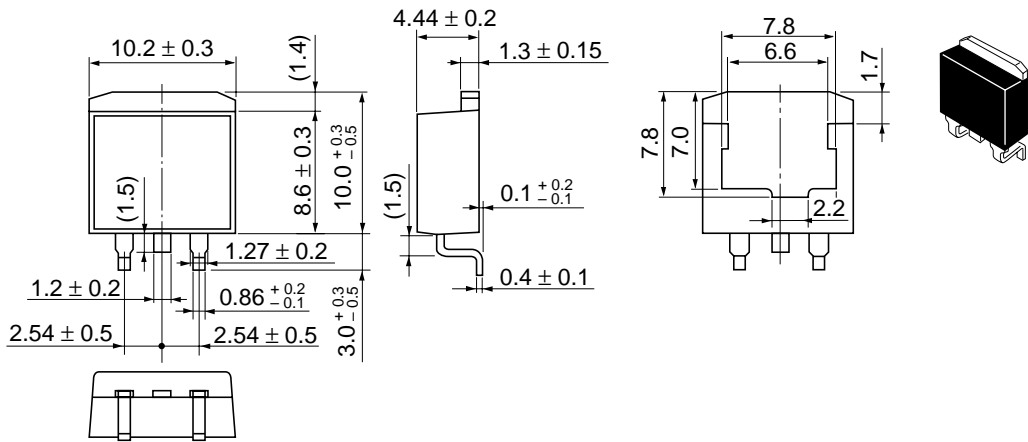
Package Dimensions

As of January, 2001
Unit: mm



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

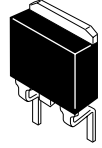
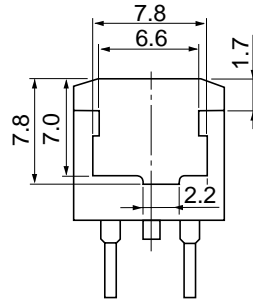
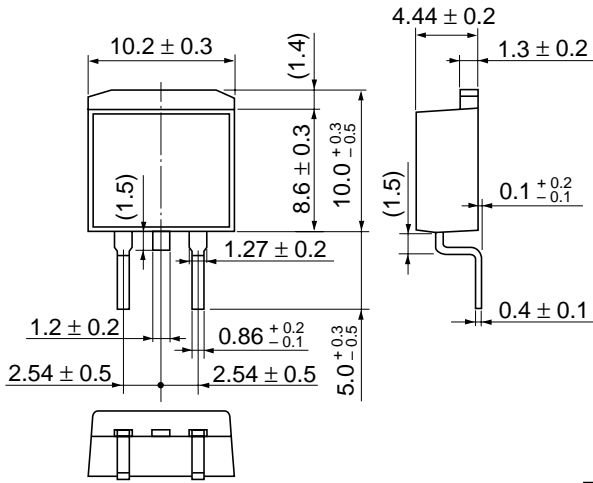
As of January, 2001
Unit: mm



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

2SJ479(L), 2SJ479(S)

As of January, 2001
Unit: mm



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

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