

H5N2510DL, H5N2510DS

Silicon N Channel MOS FET
High Speed Power Switching

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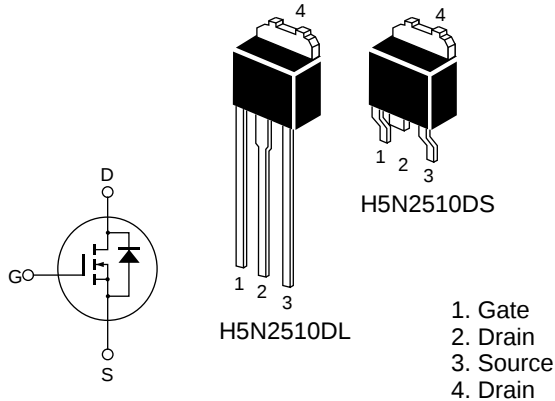
ADE-208-1379 (Z)
Target Specification 1st. Edition
Mar. 2001

Features

- Low on-resistance
- Low drive current
- High speed switching

Outline

DPAK-2



Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V _{DSS}	250	V
Gate to source voltage	V _{GSS}	±20	V
Drain current	I _D	(5)	A
Drain peak current	I _{D (pulse)} ^{Note1}	(20)	A
Body-drain diode reverse drain current	I _{DR}	(5)	A
Body-drain diode reverse drain peak current	I _{DR (pulse)} ^{Note1}	(20)	A
Channel dissipation	Pch ^{Note2}	25	W
Channel to case Thermal Impedance	θ ch-c	5	°C/W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	–55 to +150	°C

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

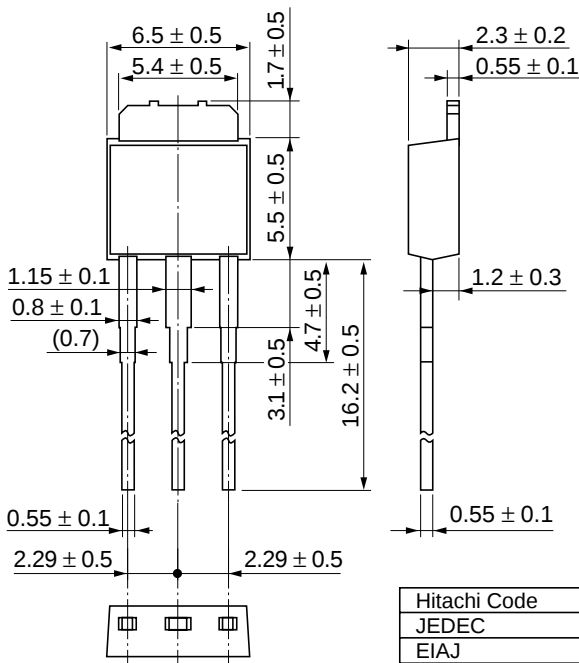
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	250	—	—	V	$I_D = 10 \text{ mA}$, $V_{GS} = 0$
Gate to source leak current	I_{GSS}	—	—	± 0.1	μA	$V_{GS} = \pm 20 \text{ V}$, $V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	1	μA	$V_{DS} = 250 \text{ V}$, $V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	(1.0)	—	(2.5)	V	$V_{DS} = 10 \text{ V}$, $I_D = 1 \text{ mA}$
Static drain to source on state resistance	$R_{DS(on)}$	—	(0.68)	(0.89)		$I_D = 2.5 \text{ A}$, $V_{GS} = 10 \text{ V}$ ^{Note4}
	$R_{DS(on)}$	—	(0.72)	(0.97)		$I_D = 2.5 \text{ A}$, $V_{GS} = 10 \text{ V}$ ^{Note4}
Forward transfer admittance	$ y_{fs} $	(3.2)	(5.3)	—	S	$I_D = 2.5 \text{ A}$, $V_{DS} = 4 \text{ V}$ ^{Note4}
Input capacitance	C_{iss}	—	(390)	—	pF	$V_{DS} = 25 \text{ V}$
Output capacitance	C_{oss}	—	(45)	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	C_{rss}	—	(13)	—	pF	$f = 1 \text{ MHz}$
Total gate charge	Q_g	—	(15.2)	—	nC	$V_{DD} = 200 \text{ V}$
Gate to source charge	Q_{gs}	—	(1.3)	—	nC	$V_{GS} = 10 \text{ V}$
Gate to drain charge	Q_{gd}	—	(5.1)	—	nC	$I_D = 5 \text{ A}$
Turn-on delay time	$t_{d(on)}$	—	(12)	—	ns	$I_D = 2.5 \text{ A}$
Rise time	t_r	—	(14)	—	ns	$V_{GS} = 10 \text{ V}$
Turn-off delay time	$t_{d(off)}$	—	(66)	—	ns	$R_L = 50$
Fall time	t_f	—	(11)	—	ns	$R_g = 10$
Body-drain diode forward voltage	V_{DF}	—	(1.0)	(1.5)	V	$I_F = 5 \text{ A}$, $V_{GS} = 0$
Body-drain diode reverse recovery time	t_{rr}	—	(100)	—	ns	$I_F = 5 \text{ A}$, $V_{GS} = 0$
Body-drain diode reverse recovery charge	Q_{rr}	—	(320)	—	nC	$diF/dt = 100 \text{ A}/\mu\text{s}$

Note: 4. Pulse test

Package Dimensions

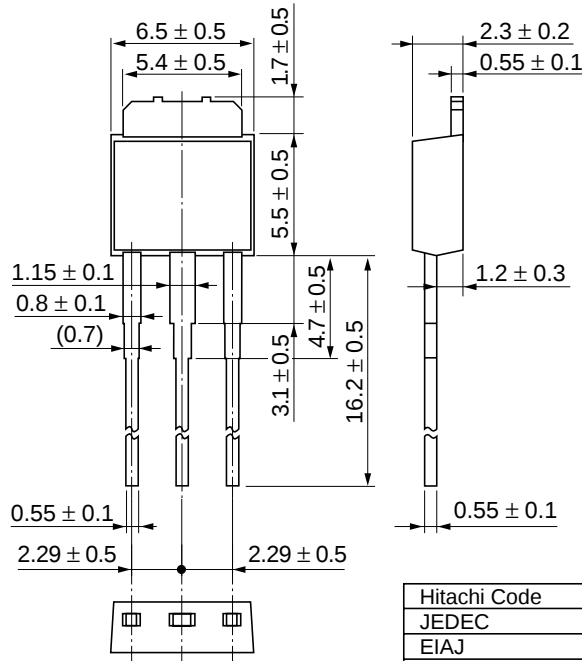
As of January, 2001
Unit: mm



Hitachi Code	DPAK (L)-(2)
JEDEC	—
EIAJ	—
Mass (reference value)	0.42 g

As of January, 2001

Unit: mm

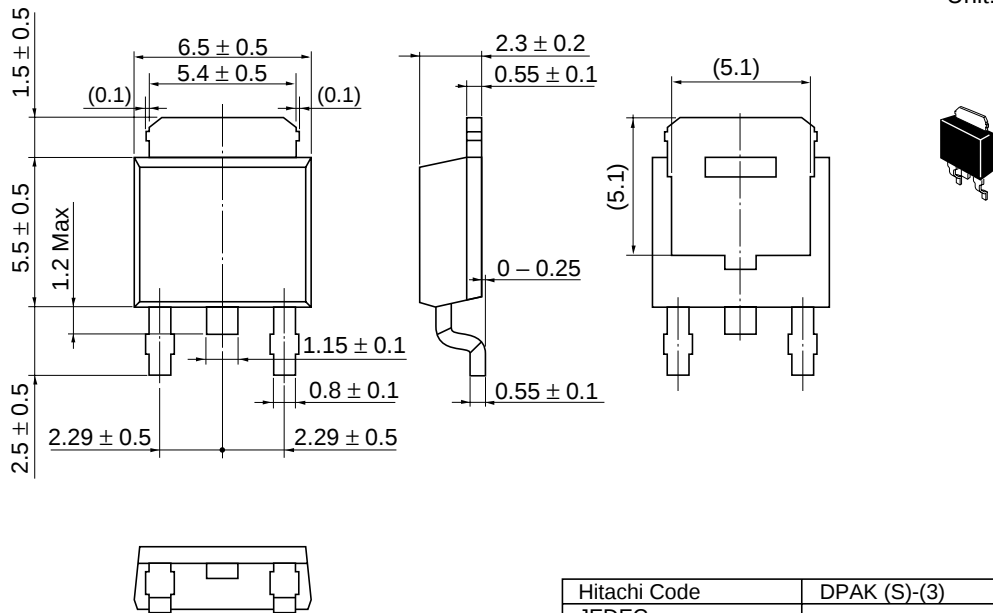


Hitachi Code	DPAK (L)-(2)
JEDEC	—
EIAJ	—
Mass (reference value)	0.42 g

H5N2510DL, H5N2510DS

As of January, 2001

Unit: mm



Hitachi Code	DPAK (S)-(3)
JEDEC	—
EIAJ	Conforms
Mass (reference value)	0.28 g

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