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# 2SJ387(L), 2SJ387(S)

Silicon P-Channel MOS FET

# HITACHI

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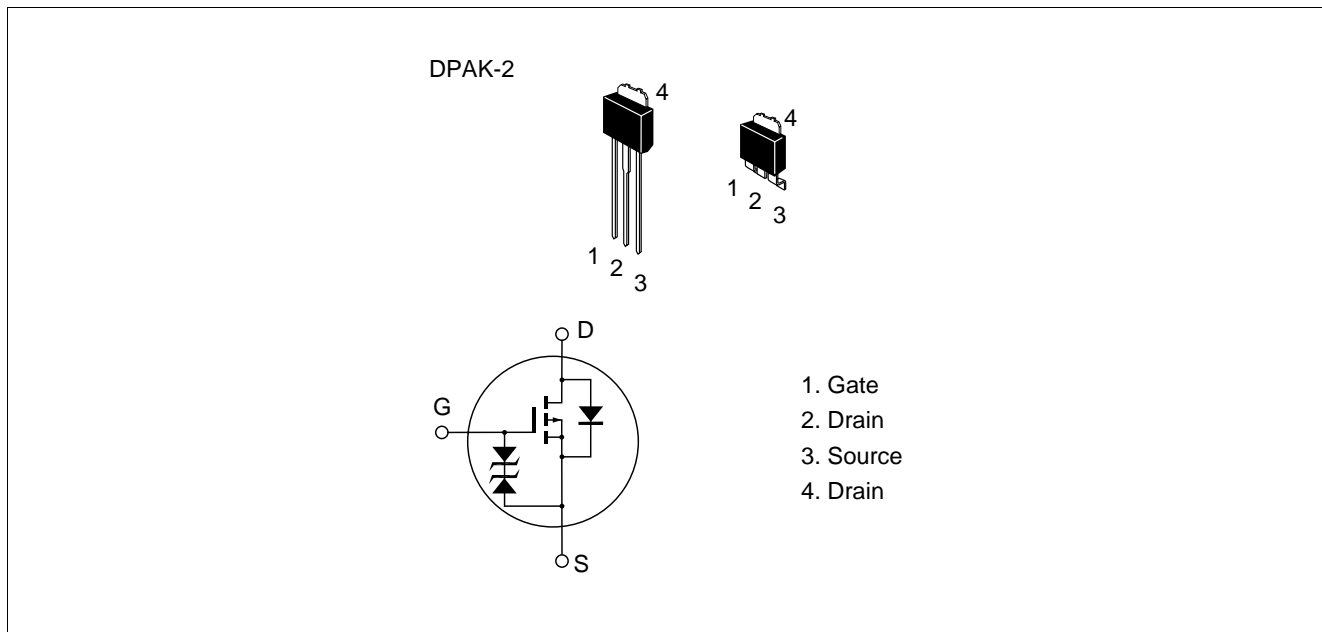
## Application

High speed power switching

## Features

- Low on-resistance
- Low drive current
- 2.5 V Gate drive device can be driven from 3 V Source
- Suitable for Switching regulator, DC - DC converter

## Outline



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## 2SJ387(L), 2SJ387(S)

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### Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	$V_{DSS}$	-20	V
Gate to source voltage	$V_{GSS}$	±10	V
Drain current	$I_D$	-10	A
Drain peak current	$I_{D(pulse)}^{*1}$	-40	A
Body to drain diode reverse drain current	$I_{DR}$	-10	A
Channel dissipation	$P_{ch}^{*2}$	20	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

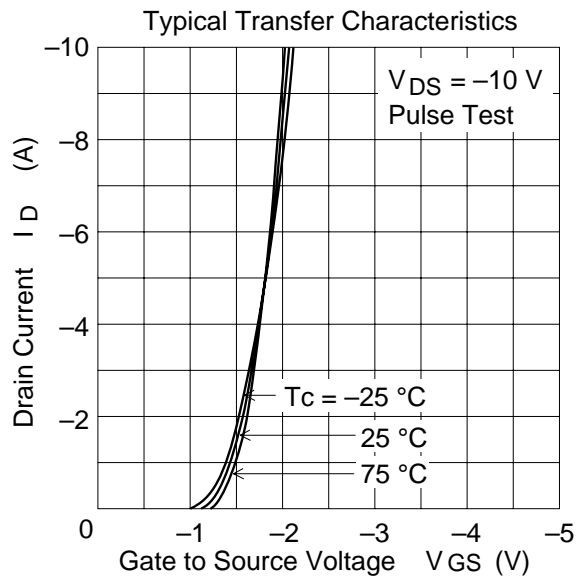
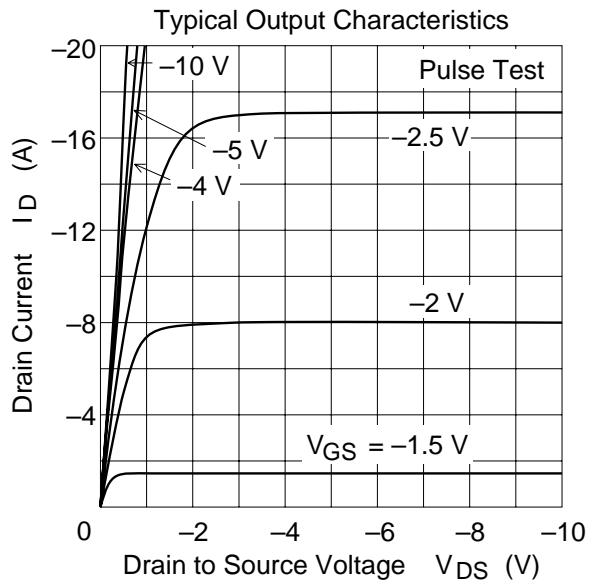
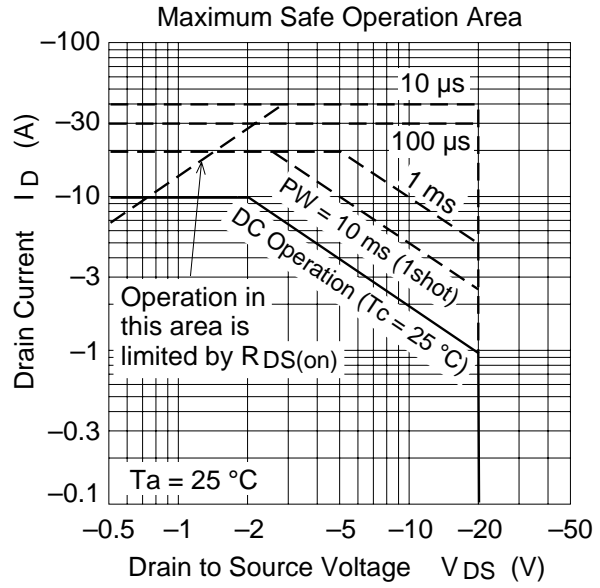
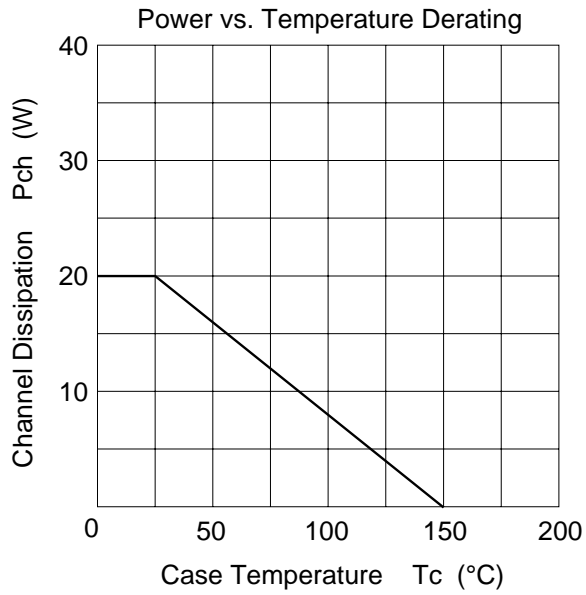
Notes: 1.  $PW \leq 10 \mu s$ , duty cycle  $\leq 1 \%$

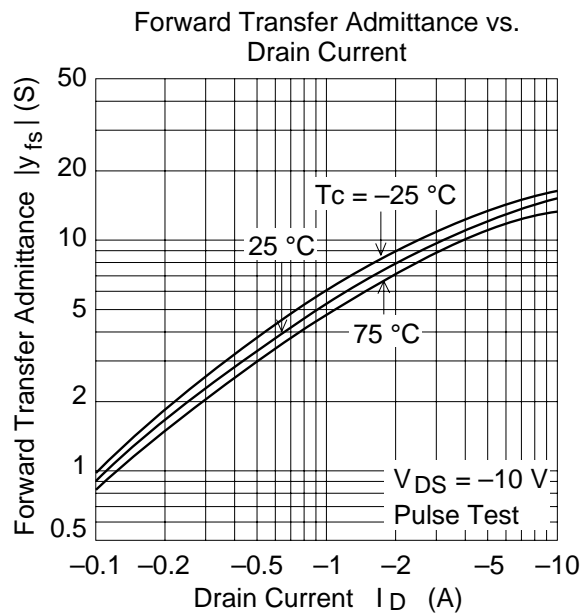
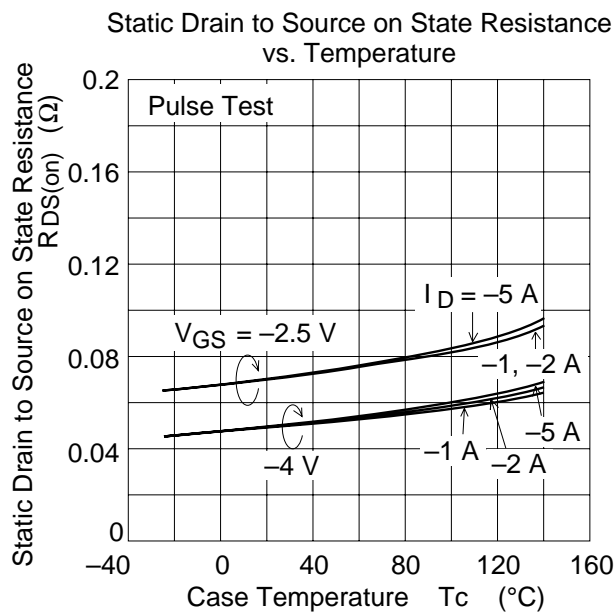
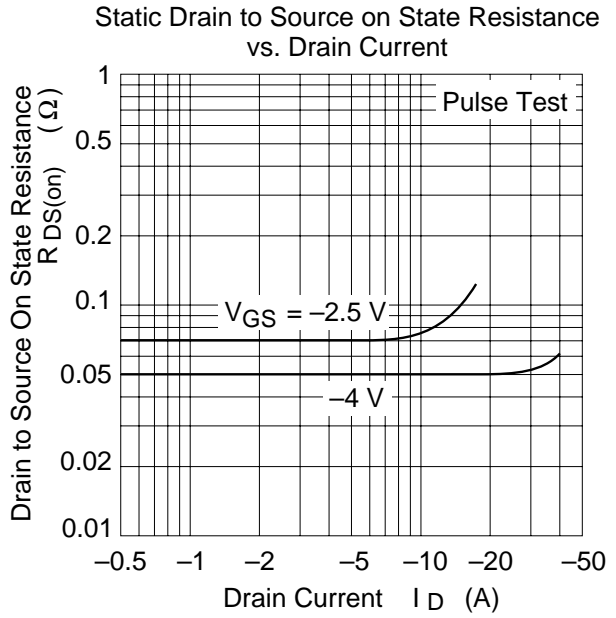
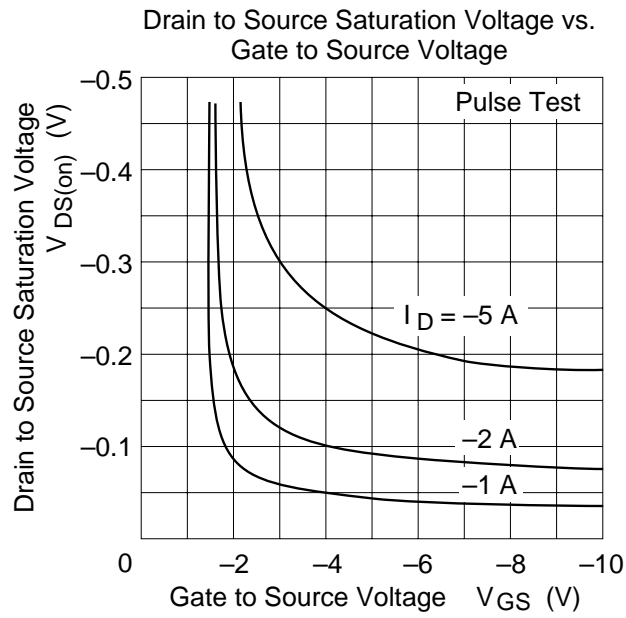
2. Value at  $T_c = 25^\circ C$

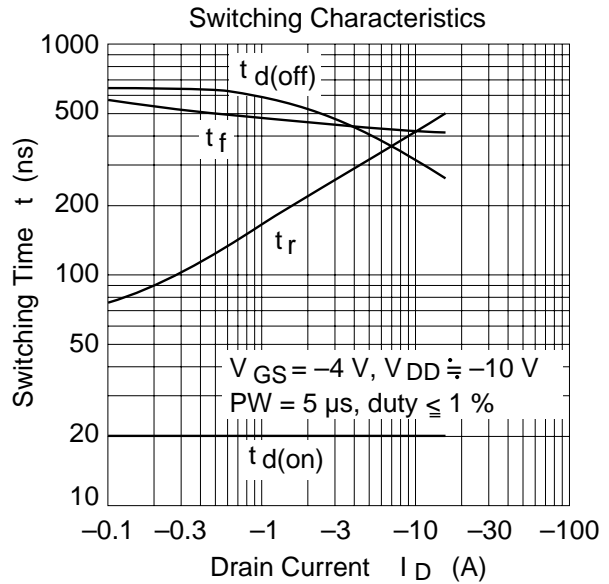
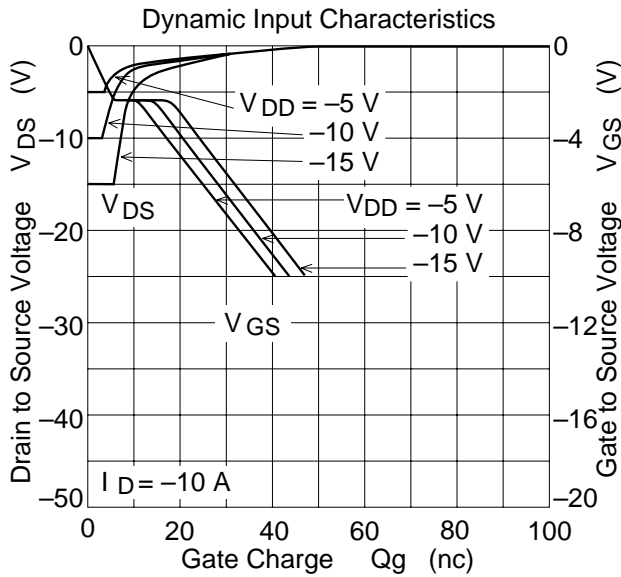
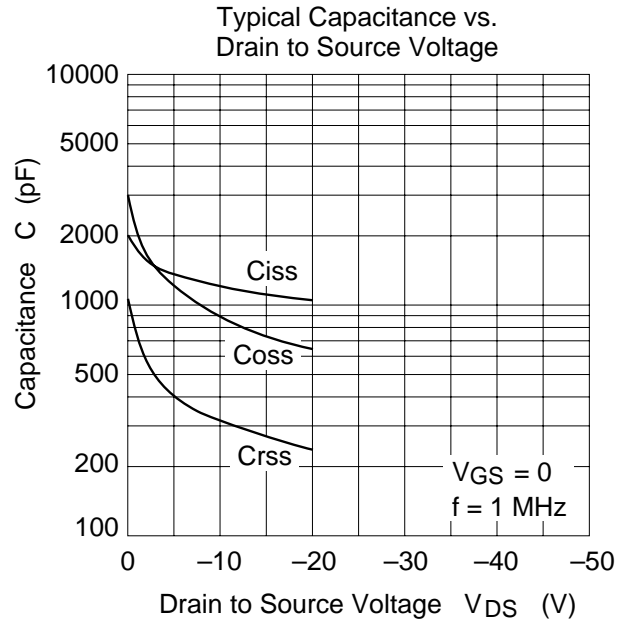
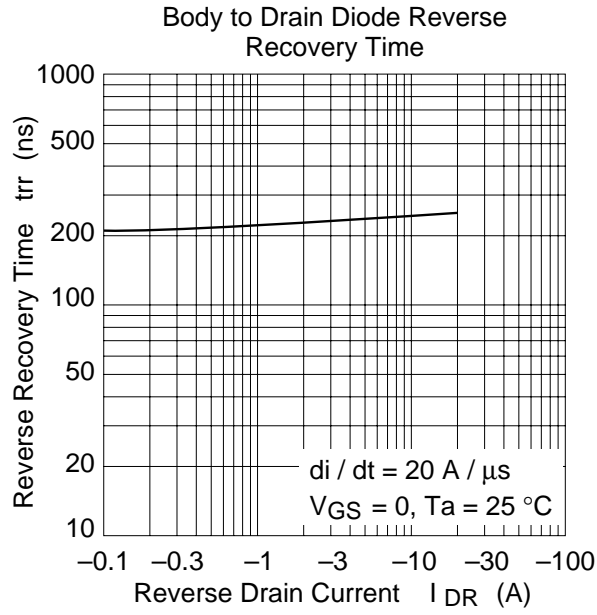
**Electrical Characteristics (Ta = 25°C)**

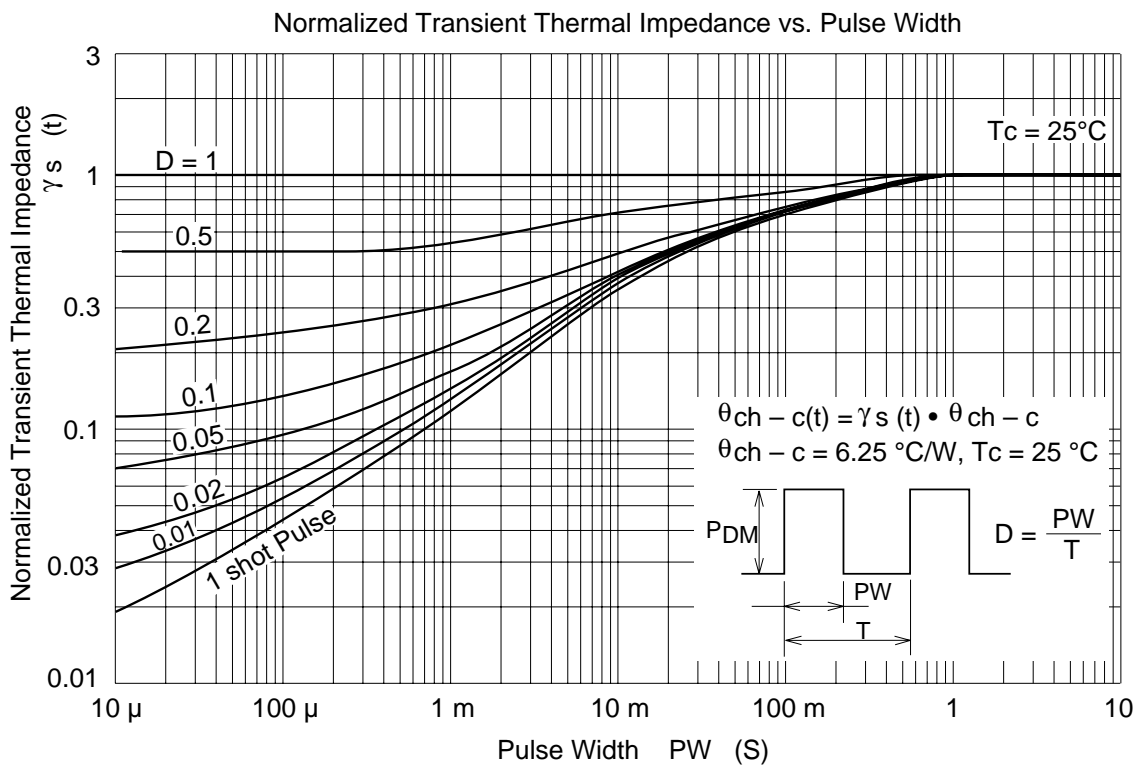
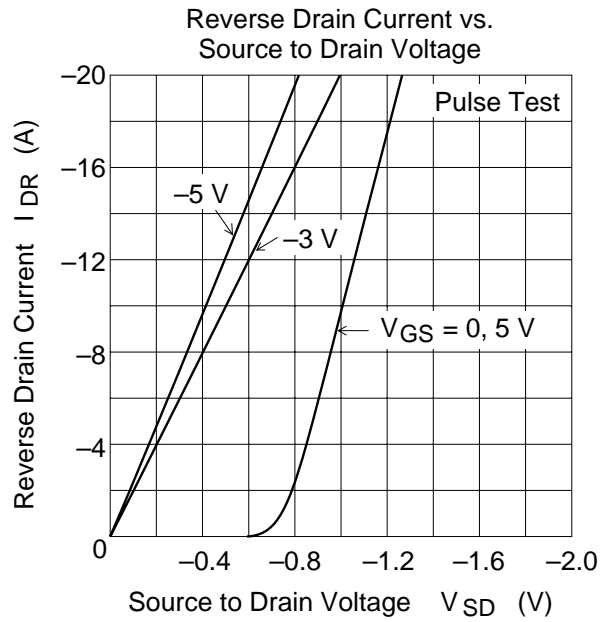
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	-20	—	—	V	$I_D = -10 \text{ mA}, V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	$\pm 10$	—	—	V	$I_G = \pm 200 \text{ }\mu\text{A}, V_{DS} = 0$
Gate to source leak current	$I_{GSS}$	—	—	$\pm 10$	$\mu\text{A}$	$V_{GS} = \pm 6.5 \text{ V}, V_{DS} = 0$
Zero gate voltage drain current	$I_{DSS}$	—	—	-100	$\mu\text{A}$	$V_{DS} = -16 \text{ V}, V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	-0.5	—	-1.5	V	$I_D = -1 \text{ mA}, V_{DS} = -10 \text{ V}$
Static drain to source on state resistance	$R_{DS(on)}$	—	0.05	0.07	$\Omega$	$I_D = -5 \text{ A}$ $V_{GS} = -4 \text{ V}^{*1}$
		—	0.07	0.1	$\Omega$	$I_D = -5 \text{ A}$ $V_{GS} = -2.5 \text{ V}^{*1}$
Forward transfer admittance	$ y_{fs} $	7	12	—	S	$I_D = -5 \text{ A}$ $V_{DS} = -10 \text{ V}^{*1}$
Input capacitance	$C_{iss}$	—	1170	—	pF	$V_{DS} = -10 \text{ V}$
Output capacitance	$C_{oss}$	—	860	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	$C_{rss}$	—	310	—	pF	$f = 1 \text{ MHz}$
Turn-on delay time	$t_{d(on)}$	—	20	—	ns	$I_D = -5 \text{ A}$
Rise time	$t_r$	—	325	—	ns	$V_{GS} = -4 \text{ V}$
Turn-off delay time	$t_{d(off)}$	—	350	—	ns	$R_L = 2 \text{ }\Omega$
Fall time	$t_f$	—	425	—	ns	
Body to drain diode forward voltage	$V_{DF}$	—	-1.0	—	V	$I_F = -10 \text{ A}, V_{GS} = 0$
Body to drain diode reverse recovery time	$t_{rr}$	—	240	—	ns	$I_F = -10 \text{ A}, V_{GS} = 0,$ $diF/dt = 20 \text{ A}/\mu\text{s}$

Note: 1. Pulse Test

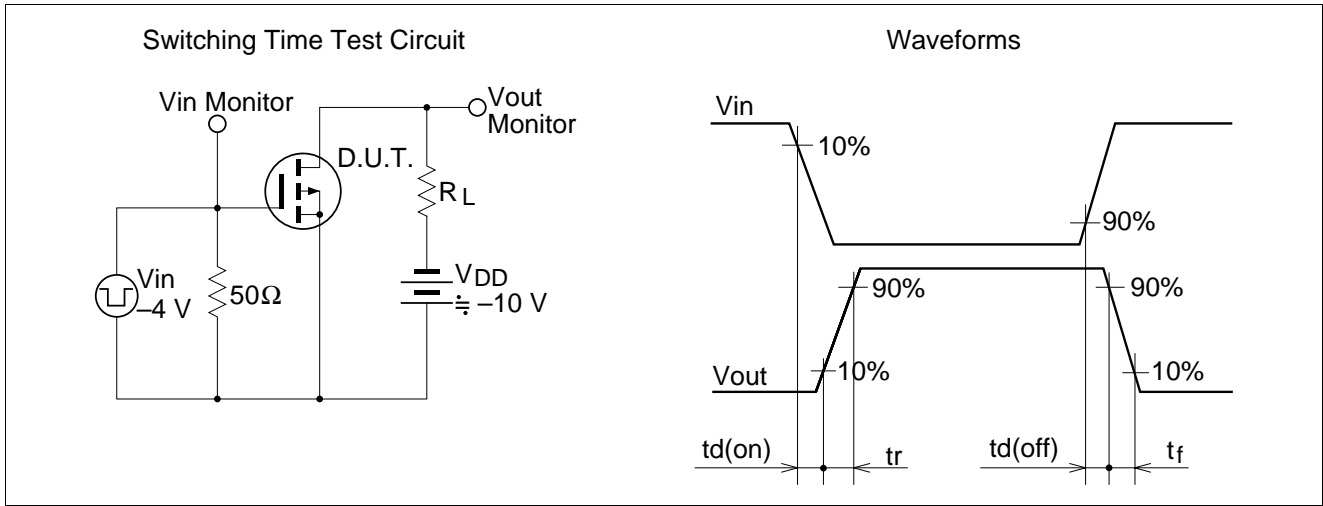








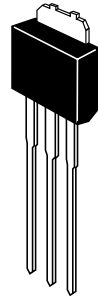
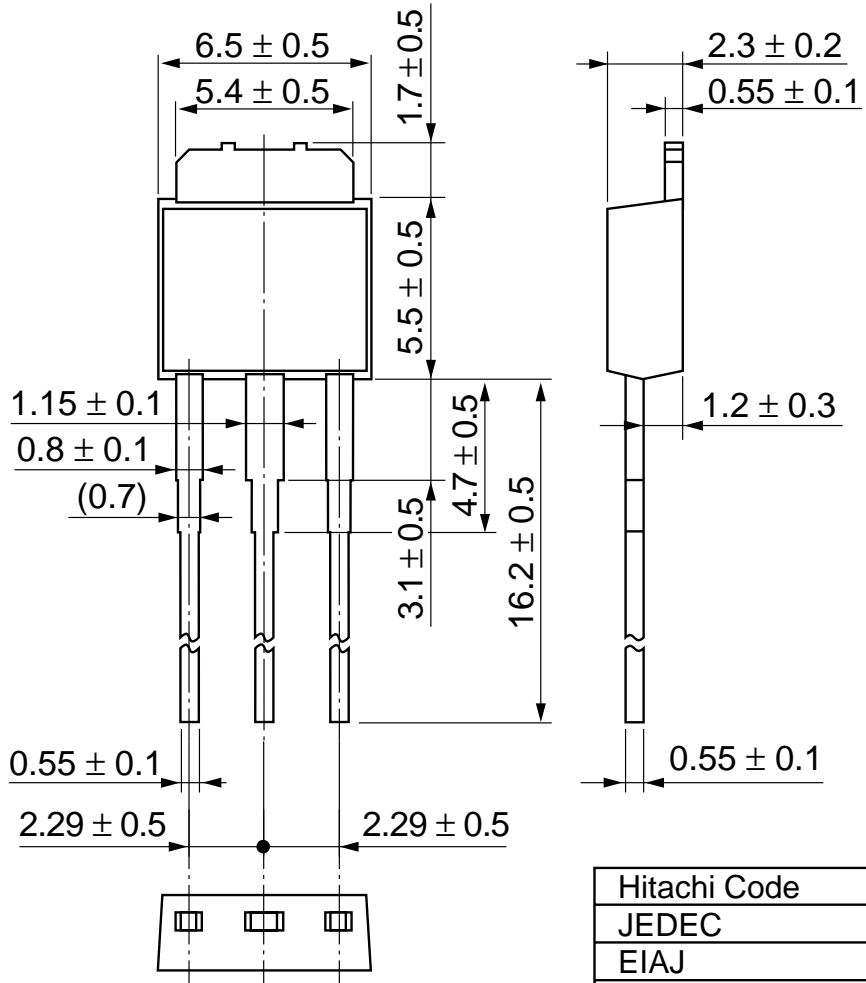
# 2SJ387(L), 2SJ387(S)



HITACHI



Unit: mm



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

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