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# 2SK3076(L),2SK3076(S)

Silicon N Channel MOS FET  
High Speed Power Switching

# HITACHI

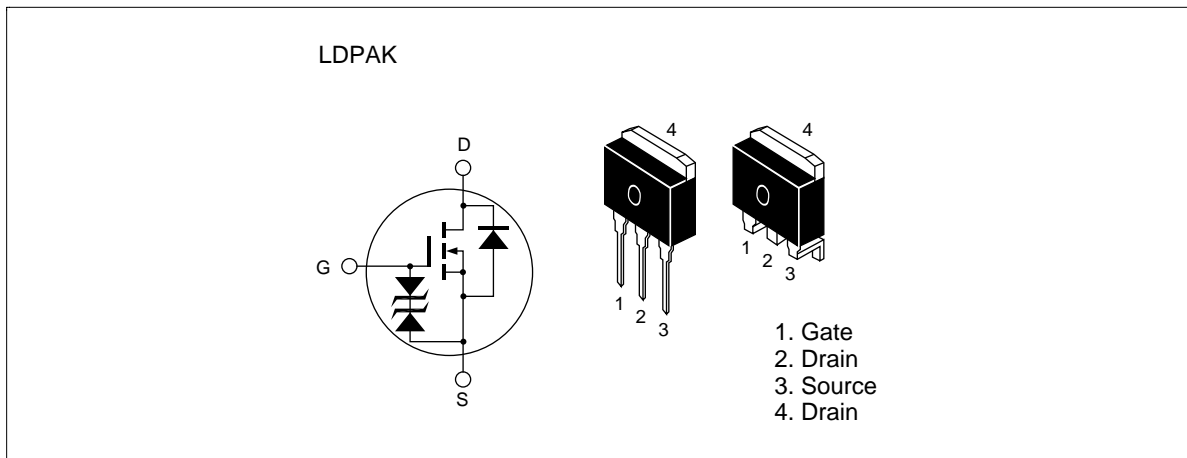
ADE-208-656 (Z)  
1st. Edition  
Jun 1998

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## Features

- Low on-resistance
- High speed switching
- Low drive current.
- Built-in fast recovery diode ( $t_{rr}=120$  ns)

## Outline



## 2SK3076(L),2SK3076(S)

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

| Item                                   | Symbol                          | Ratings     | Unit |
|--|---------------------------------|-------------|------|
| Drain to source voltage                | $V_{DSS}$                       | 500         | V    |
| Gate to source voltage                 | $V_{GSS}$                       | ±30         | V    |
| Drain current                          | $I_D$                           | 7           | A    |
| Drain peak current                     | $I_{D(pulse)}$ <sup>Note1</sup> | 28          | A    |
| Body-drain diode reverse drain current | $I_{DR}$                        | 7           | A    |
| Channel dissipation                    | $P_{ch}$ <sup>Note2</sup>       | 60          | W    |
| Channel temperature                    | $T_{ch}$                        | 150         | °C   |
| Storage temperature                    | $T_{stg}$                       | -55 to +150 | °C   |

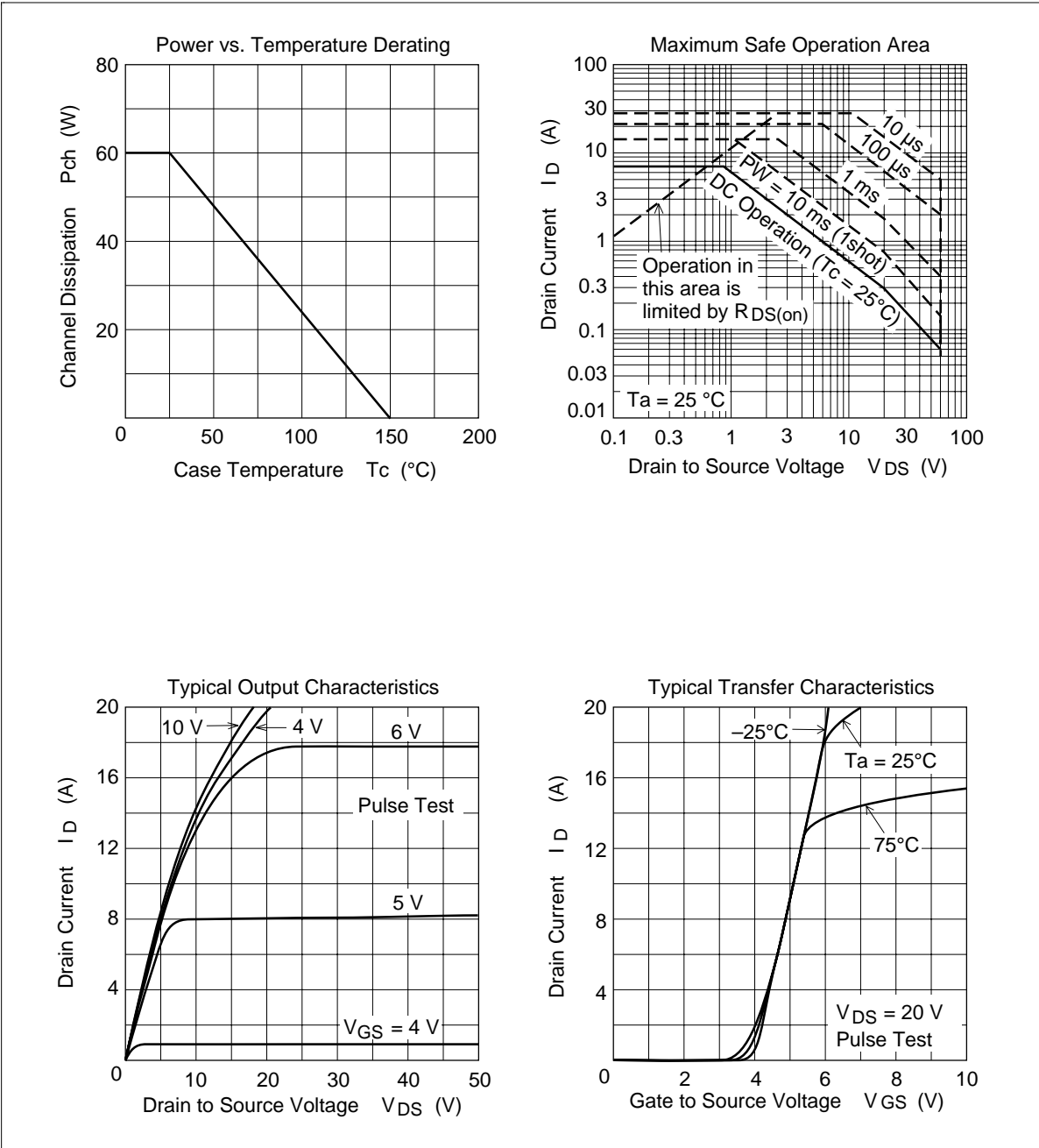
Note: 1.  $PW \leq 10\mu s$ , duty cycle  $\leq 1\%$   
 2. Value at  $T_c = 25^\circ C$

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

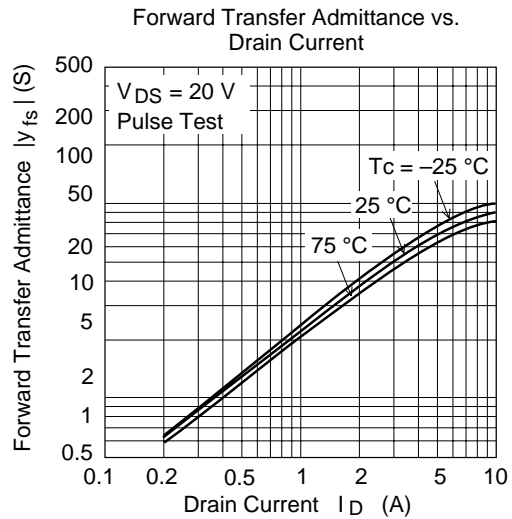
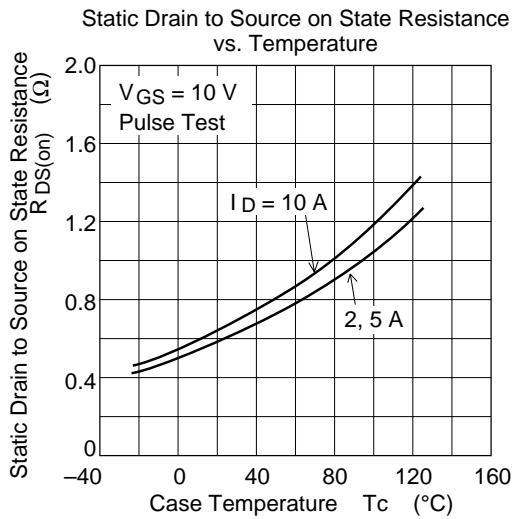
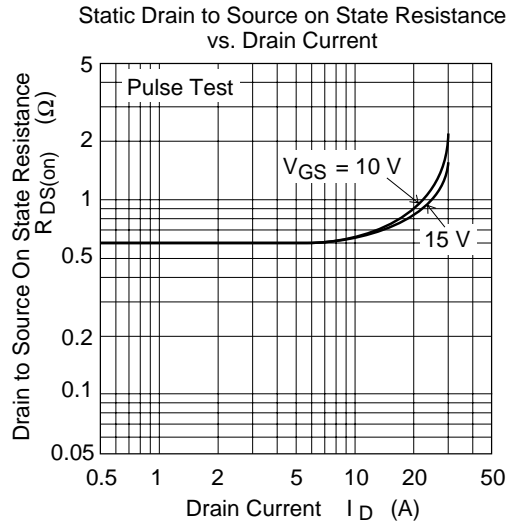
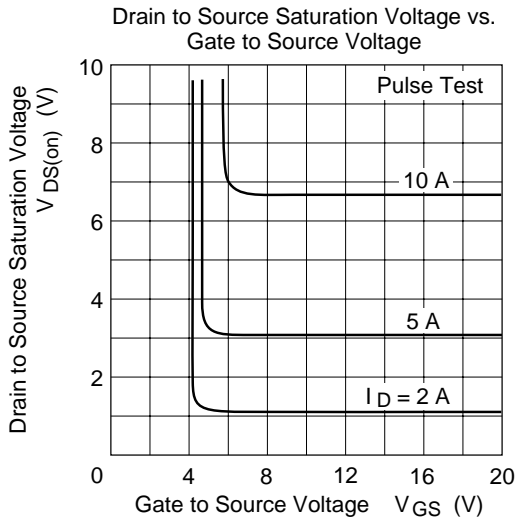
| Item                                       | Symbol        | Min | Typ  | Max | Unit | Test Conditions                                    |
|--|---------------|-----|------|-----|------|--|
| Drain to source breakdown voltage          | $V_{(BR)DSS}$ | 500 | —    | —   | V    | $I_D = 10mA$ , $V_{GS} = 0$                        |
| Gate to source breakdown voltage           | $V_{(BR)GSS}$ | ±30 | —    | —   | V    | $I_G = \pm 100\mu A$ , $V_{DS} = 0$                |
| Gate to source leak current                | $I_{GSS}$     | —   | —    | ±10 | μA   | $V_{GS} = \pm 25V$ , $V_{DS} = 0$                  |
| Zero gate voltage drain current            | $I_{DSS}$     | —   | —    | 250 | μA   | $V_{DS} = 400V$ , $V_{GS} = 0$                     |
| Gate to source cutoff voltage              | $V_{GS(off)}$ | 2.0 | —    | 3.0 | V    | $I_D = 1mA$ , $V_{DS} = 10V$                       |
| Static drain to source on state resistance | $R_{DS(on)}$  | —   | 0.7  | 0.9 | Ω    | $I_D = 4A$ , $V_{GS} = 10V$ <sup>Note4</sup>       |
| Forward transfer admittance                | $ y_{fs} $    | 3.5 | 6.0  | —   | S    | $I_D = 4A$ , $V_{DS} = 10V$ <sup>Note4</sup>       |
| Input capacitance                          | $C_{iss}$     | —   | 1100 | —   | pF   | $V_{DS} = 10V$                                     |
| Output capacitance                         | $C_{oss}$     | —   | 310  | —   | pF   | $V_{GS} = 0$                                       |
| Reverse transfer capacitance               | $C_{rss}$     | —   | 50   | —   | pF   | $f = 1MHz$   |
| Turn-on delay time                         | $t_{d(on)}$   | —   | 15   | —   | ns   | $I_D = 4A$ , $V_{GS} = 10V$                        |
| Rise time                                  | $t_r$         | —   | 55   | —   | ns   | $R_L = 7.5\Omega$                                  |
| Turn-off delay time                        | $t_{d(off)}$  | —   | 100  | —   | ns   |  |
| Fall time                                  | $t_f$         | —   | 48   | —   | ns   |  |
| Body-drain diode forward voltage           | $V_{DF}$      | —   | 0.9  | —   | V    | $I_F = 7A$ , $V_{GS} = 0$                          |
| Body-drain diode reverse recovery time     | $t_{rr}$      | —   | 120  | —   | ns   | $I_F = 7A$ , $V_{GS} = 0$<br>$diF/dt = 100A/\mu s$ |

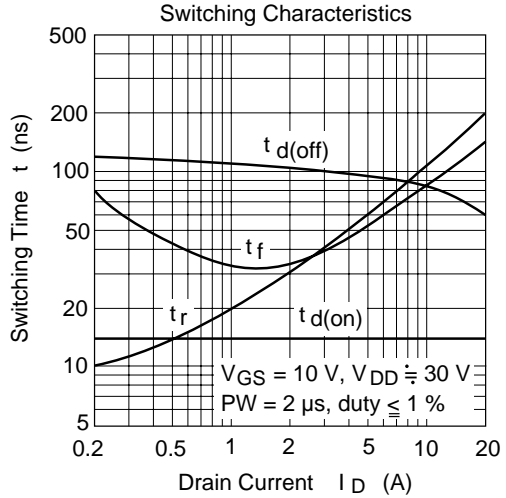
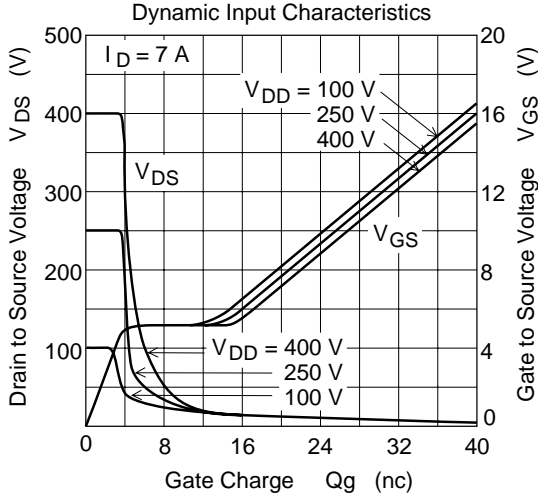
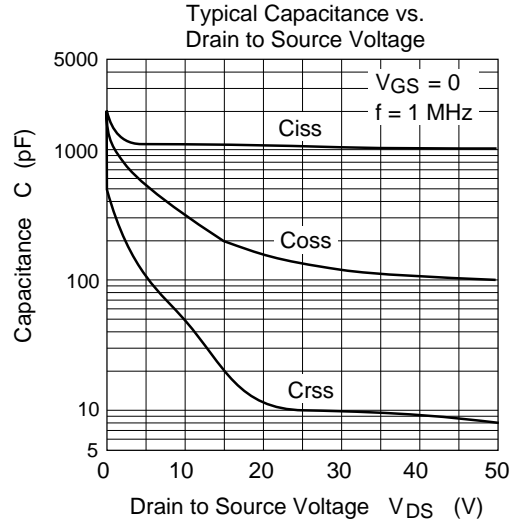
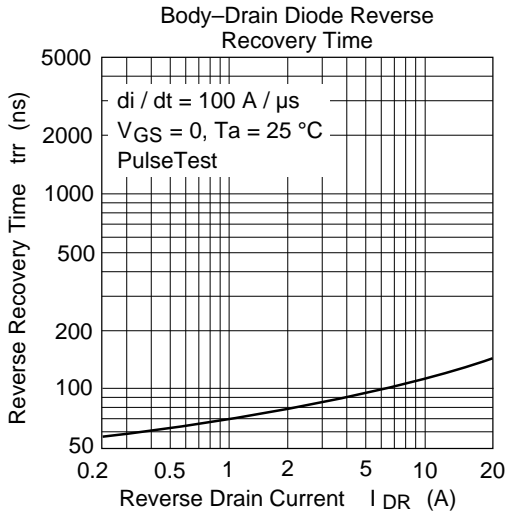
Note: 4. Pulse test

Main Characteristics

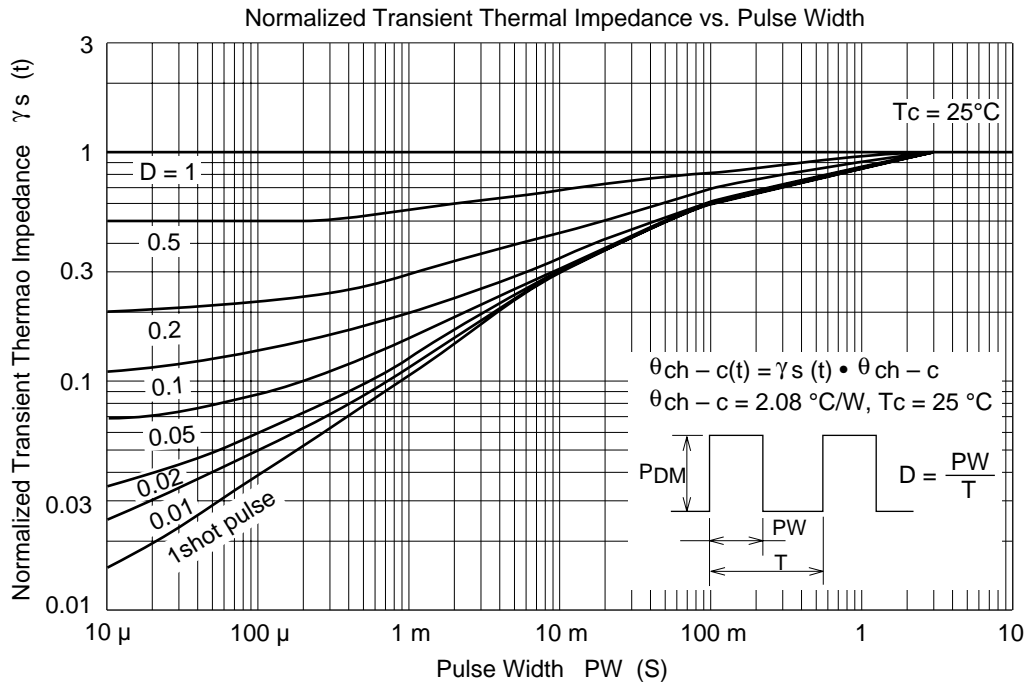
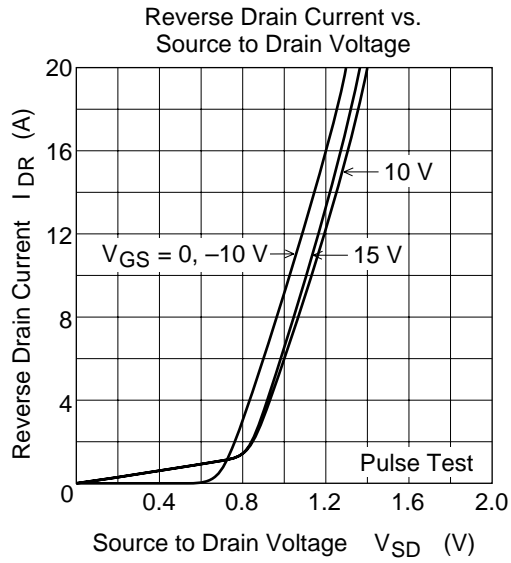


# 2SK3076(L), 2SK3076(S)

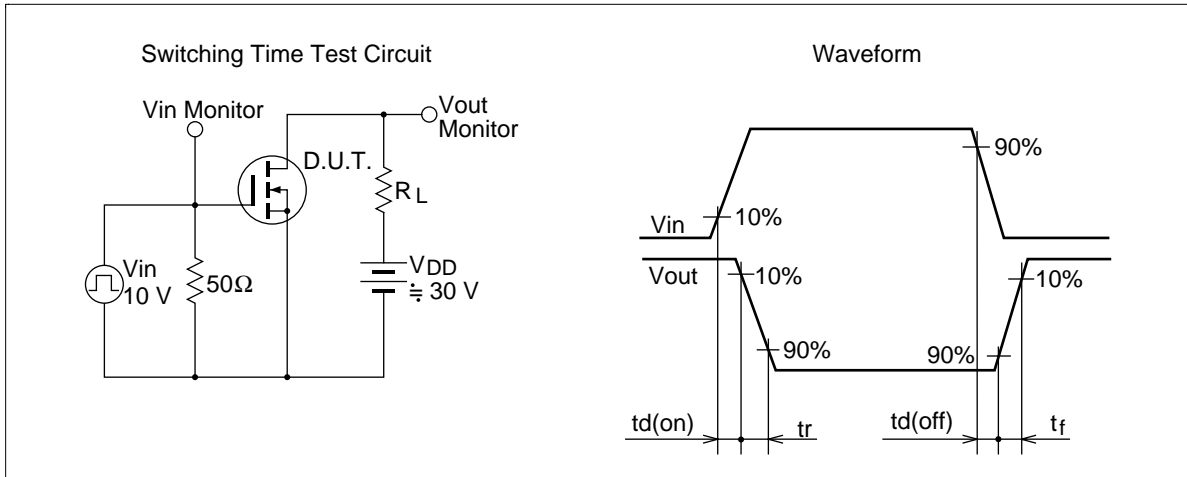




## 2SK3076(L), 2SK3076(S)



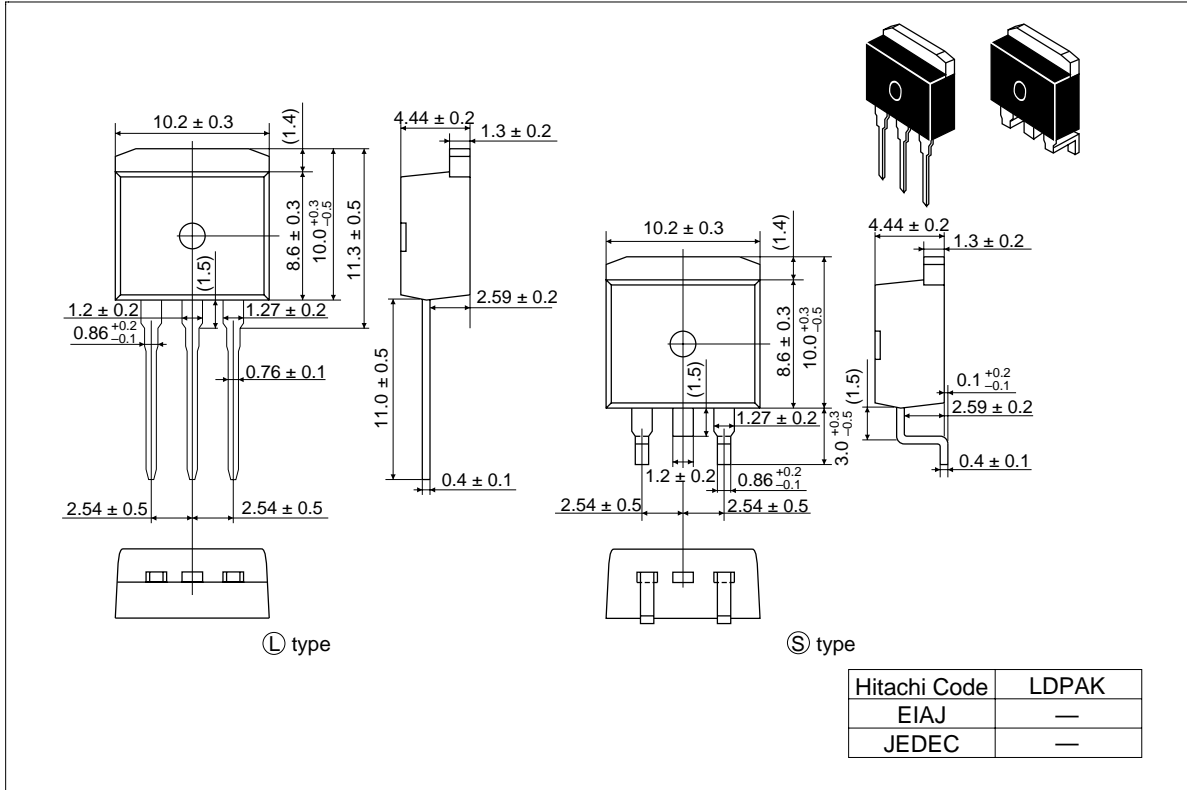
**2SK3076(L),2SK3076(S)**



# 2SK3076(L),2SK3076(S)

## Package Dimensions

Unit: mm





## Cautions

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