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# 2SK2684(L), 2SK2684(S)

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

# HITACHI

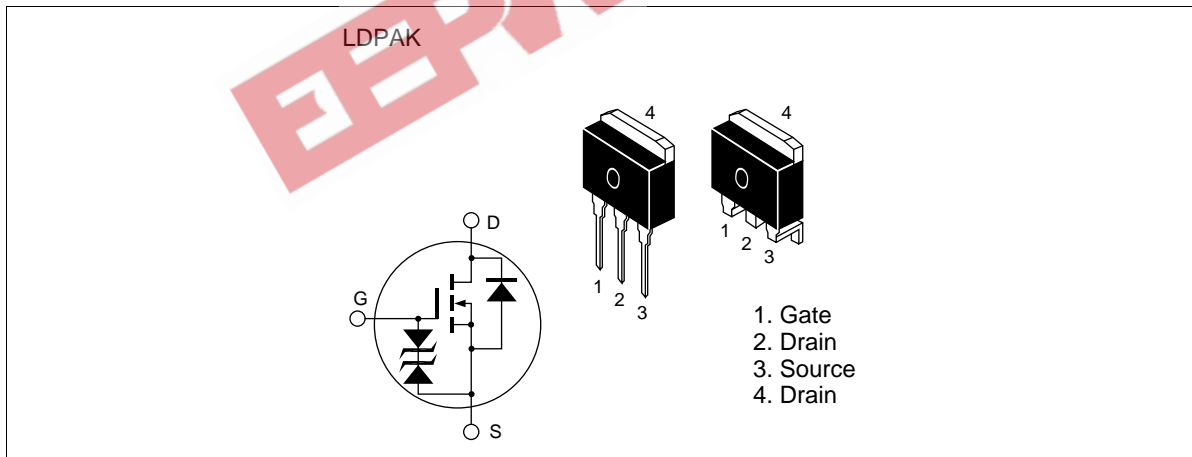
ADE-208-542  
1st. Edition

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## Features

- Low on-resistance  
 $R_{DS(on)} = 20 \text{ m}\Omega$  typ. ( $V_{GS} = 10\text{V}$ ,  $I_D = 15 \text{ A}$ )
- 4V gate drive devices.
- High speed switching

## Outline



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## 2SK2684(L), 2SK2684(S)

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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	$I_{D(pulse)}^{*1}$	120	A
Body to drain diode reverse drain current	$I_{DR}$	30	A
Channel dissipation	$P_{ch}^{*2}$	50	W
Channel temperature	$T_{ch}$	150	°C
Storage temperature	$T_{stg}$	-55 to +150	°C

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

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

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## 2SK2684(L), 2SK2684(S)

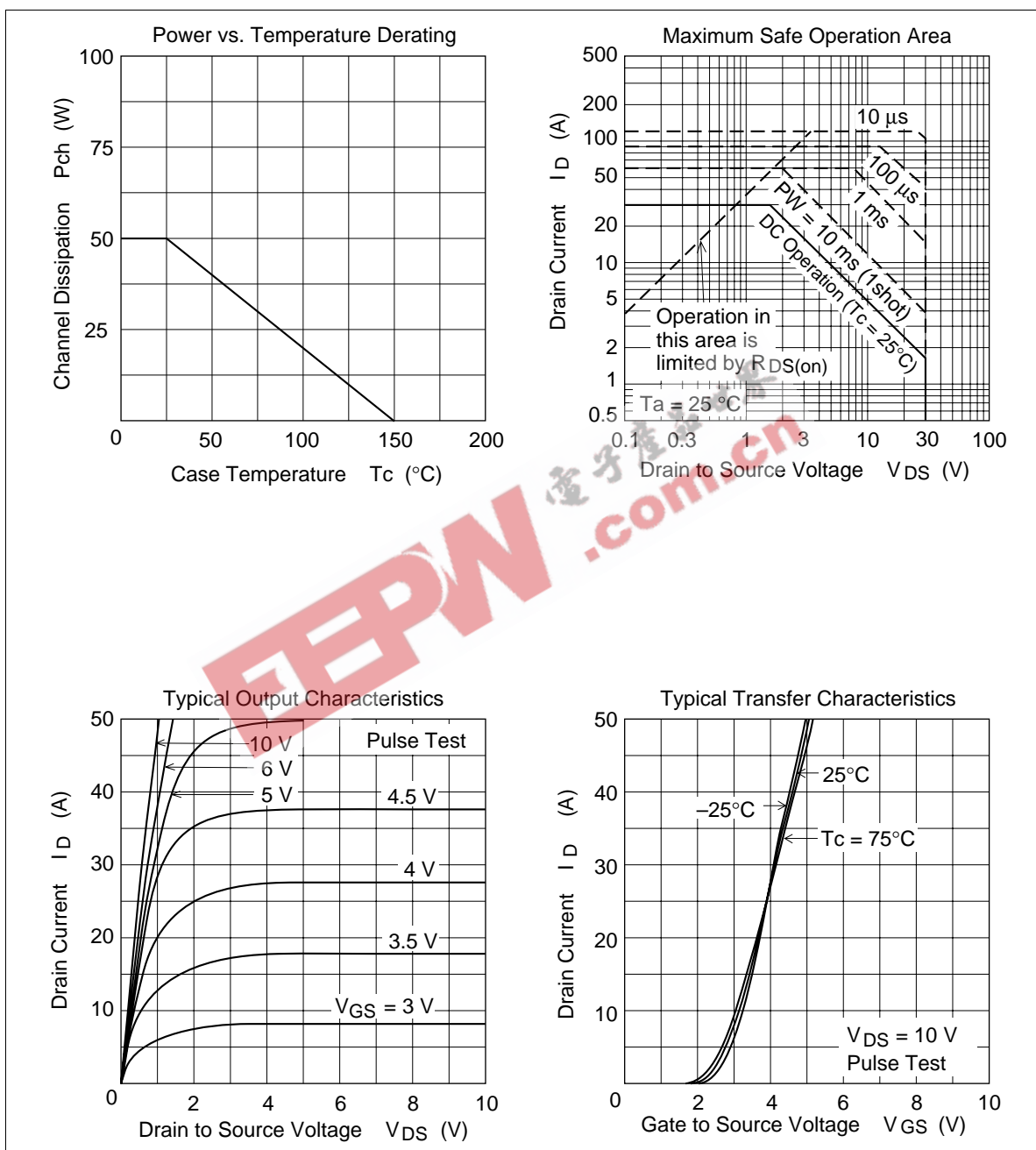
### Electrical Characteristics (T<sub>a</sub> = 25°C)

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	$R_{DS(on)}$	—	20	28	mΩ	$I_D = 15\text{A}, V_{GS} = 10\text{V}^{*1}$
	$R_{DS(on)}$	—	35	50	mΩ	$I_D = 15\text{A}, V_{GS} = 4\text{V}^{*1}$
Forward transfer admittance	$ y_{fs} $	12	18	—	S	$I_D = 15\text{A}, V_{DS} = 10\text{V}^{*1}$
Input capacitance	$C_{iss}$	—	750	—	pF	$V_{DS} = 10\text{V}$
Output capacitance	$C_{oss}$	—	520	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	$C_{rss}$	—	210	—	pF	$f = 1\text{MHz}$
Turn-on delay time	$t_{d(on)}$	—	16	—	ns	$V_{GS} = 10\text{V}, I_D = 15\text{A}$
Rise time	$t_r$	—	260	—	ns	$R_L = 0.67\Omega$
Turn-off delay time	$t_{d(off)}$	—	85	—	ns	
Fall time	$t_f$	—	90	—	ns	
Body to drain diode forward voltage	$V_{DF}$	—	1.0	—	V	$I_F = 30\text{A}, V_{GS} = 0$
Body to drain diode reverse recovery time	$t_{rr}$	—	45	—	ns	$I_F = 30\text{A}, V_{GS} = 0$ $diF/dt = 50\text{A}/\mu\text{s}$

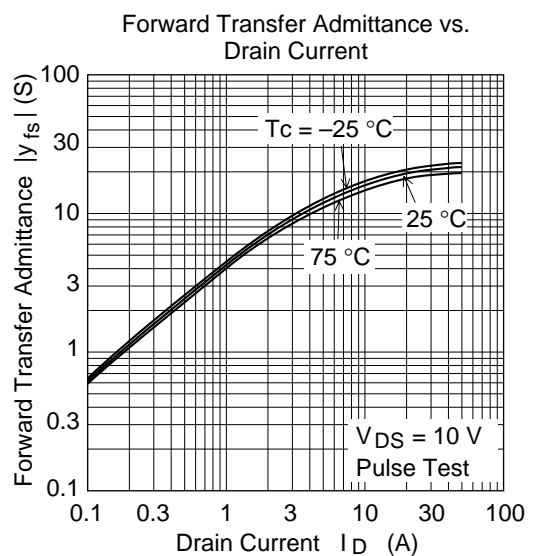
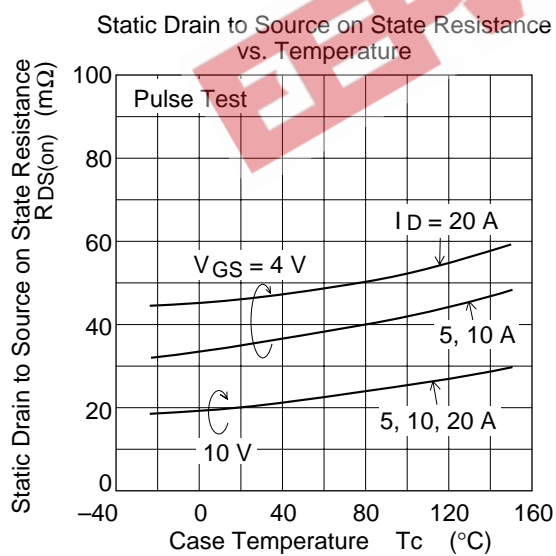
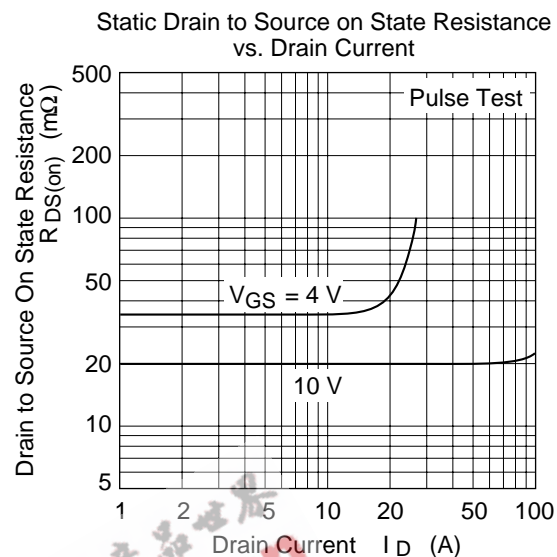
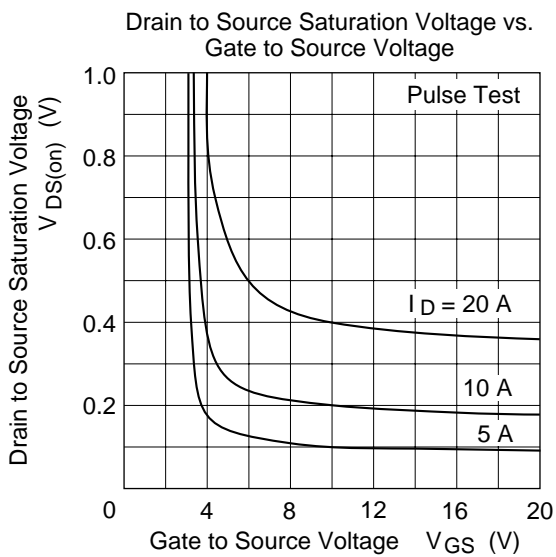
Note: 1. Pulse test

## 2SK2684(L), 2SK2684(S)

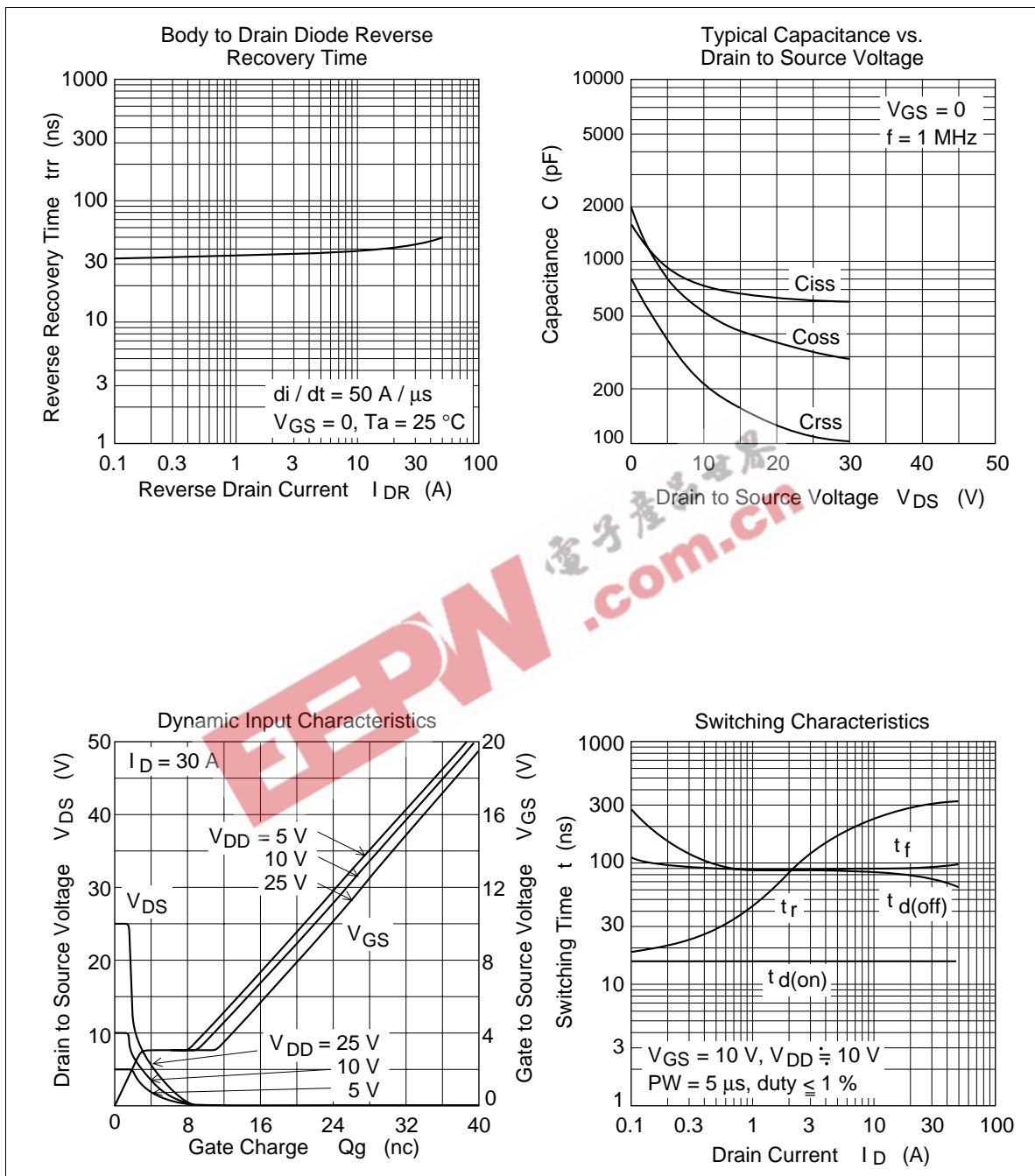
### Main Characteristics



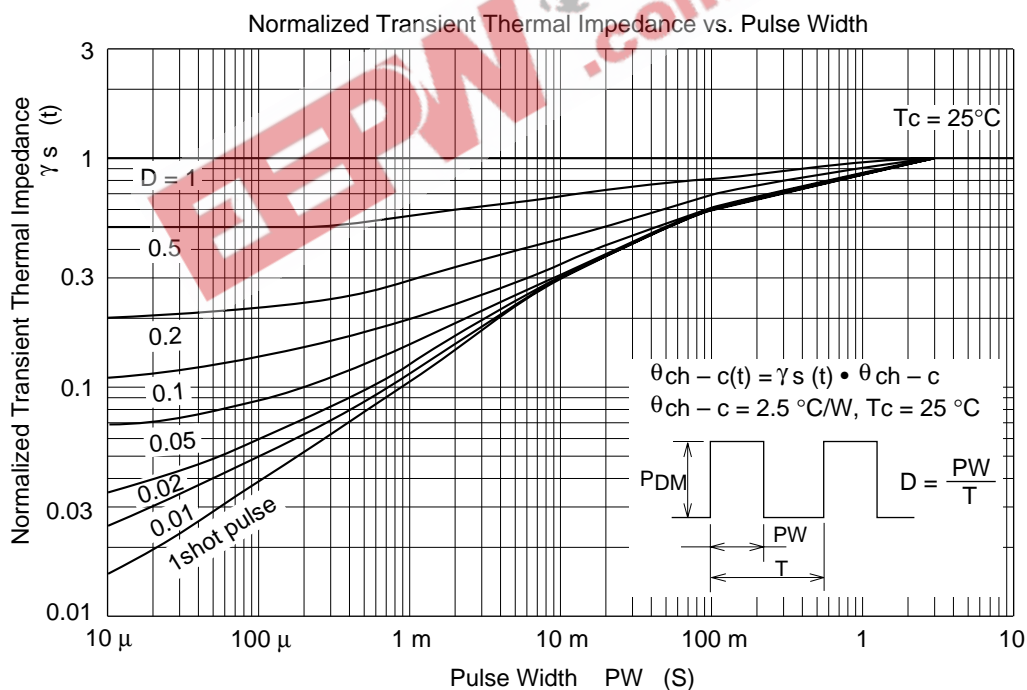
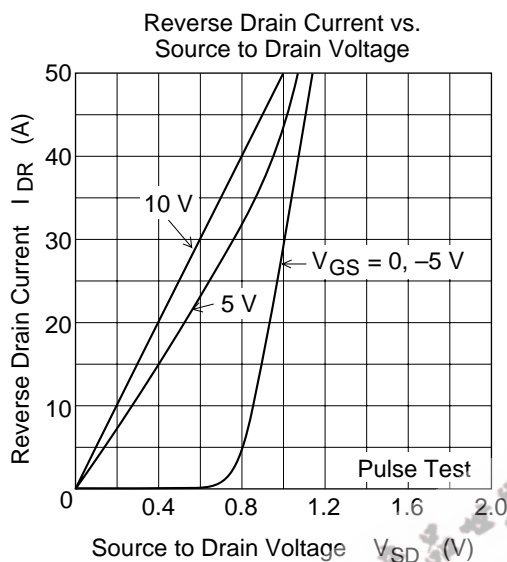
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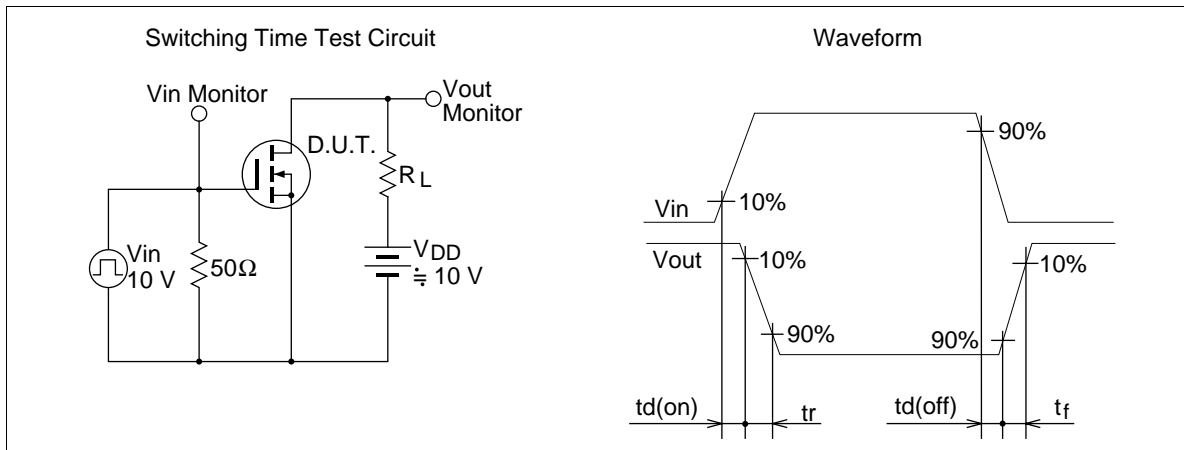
## 2SK2684(L), 2SK2684(S)



2SK2684(L), 2SK2684(S)



## 2SK2684(L), 2SK2684(S)



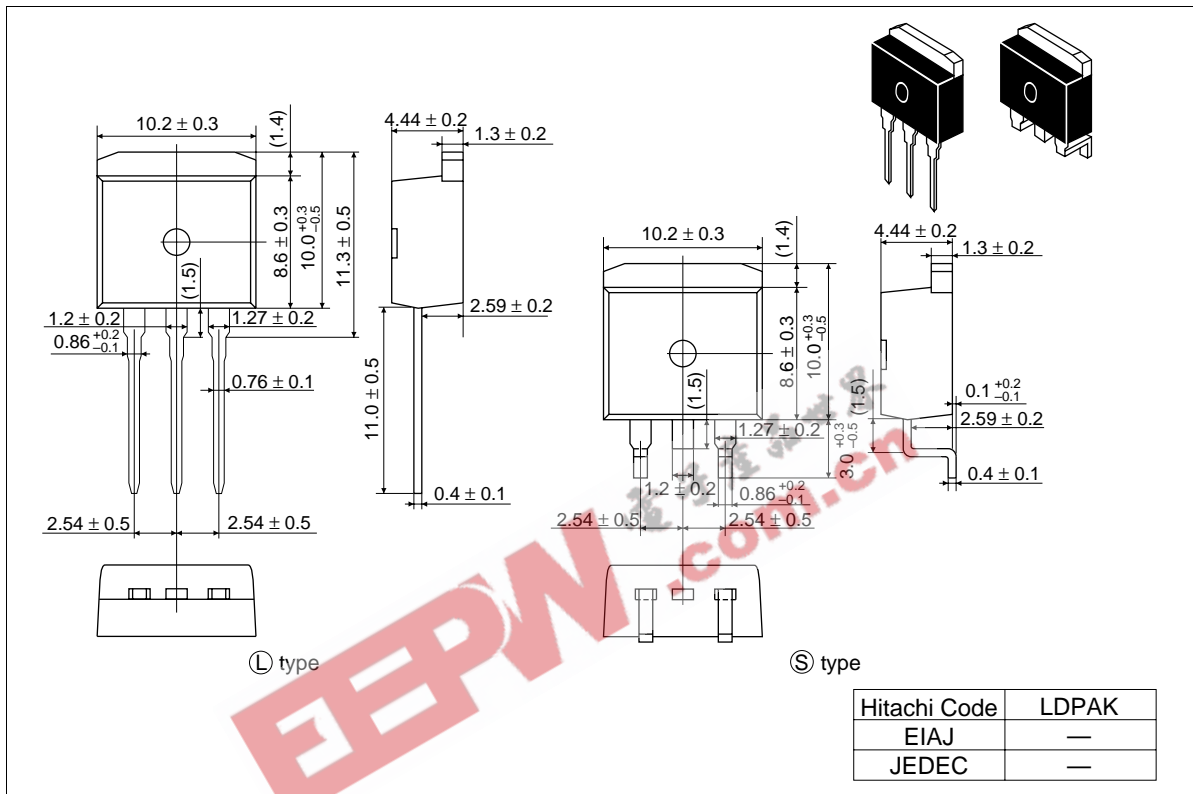
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# 2SK2684(L), 2SK2684(S)

## Package Dimensions

Unit: mm



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