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# 2SK2828

Silicon N Channel MOS FET  
High Speed Power Switching

# HITACHI

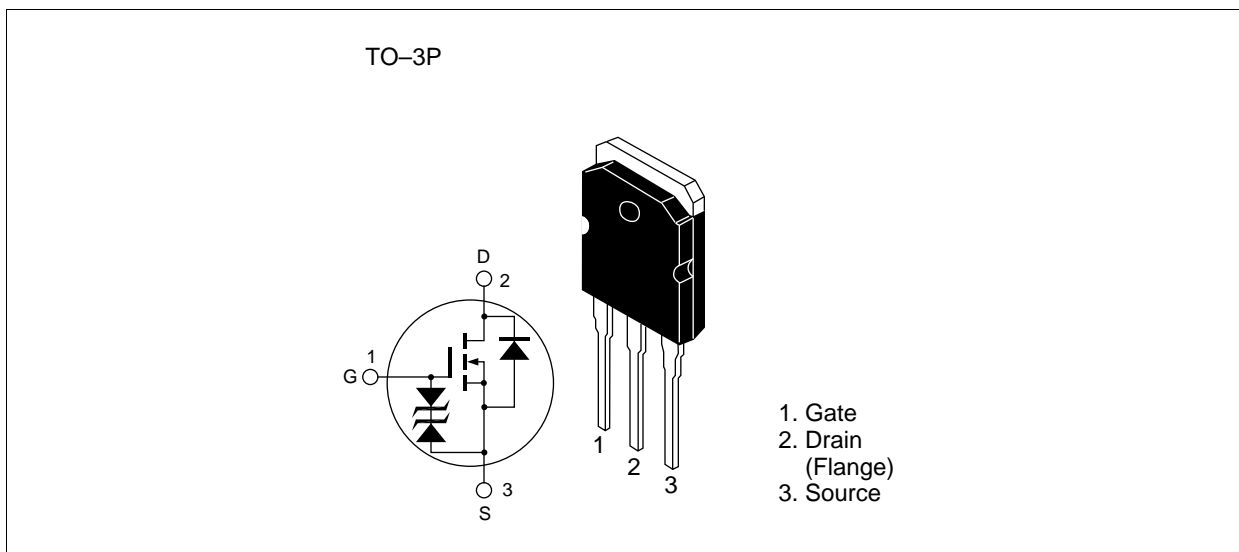
ADE-208-514 B (Z)  
3rd. Edition  
November 1998

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## Features

- Low on-resistance
- High speed switching
- Low drive current
- No secondary breakdown
- Suitable for switching regulator and DC-DC converter
- Avalanche ratings

## Outline



## 2SK2828

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

Item	Symbol	Ratings	Unit
Drain to source voltage	$V_{DSS}$	700	V
Gate to source voltage	$V_{GSS}$	$\pm 30$	V
Drain current	$I_D$	12	A
Drain peak current	$I_{D(pulse)}^{*1}$	48	A
Body-drain diode reverse drain current	$I_{DR}$	12	A
Channel dissipation	$Pch^{*2}$	175	W
Channel temperature	$Tch$	150	°C
Storage temperature	$Tstg$	-55 to +150	°C

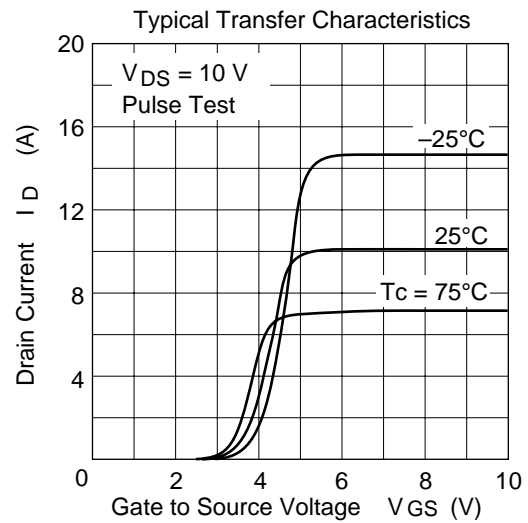
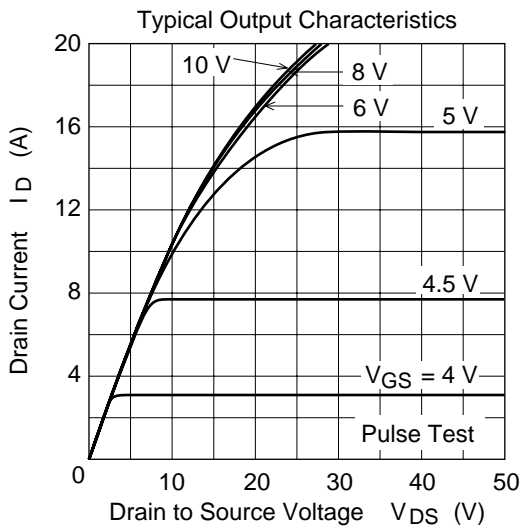
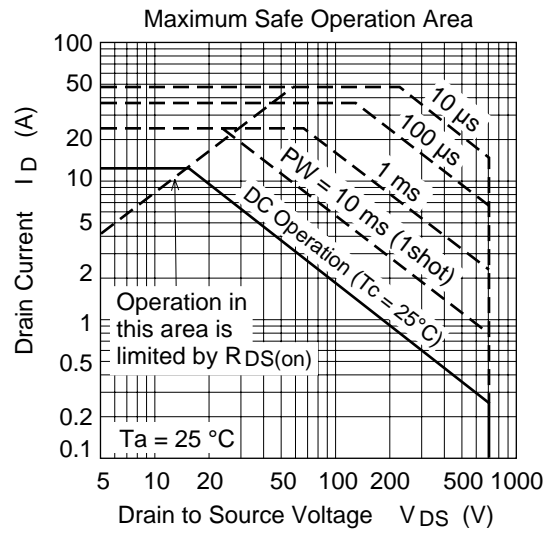
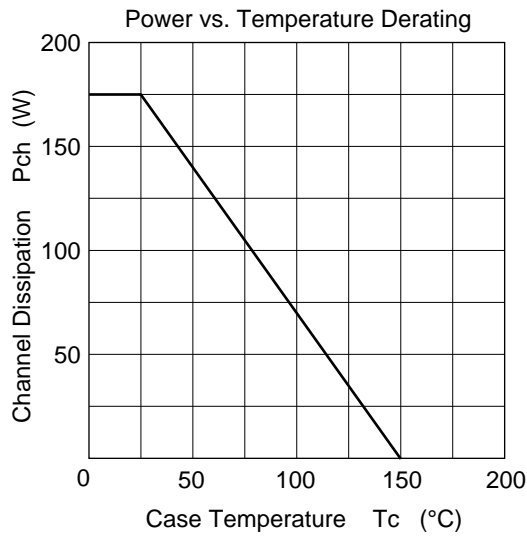
Note: 1.  $PW \leq 10\mu s$ , duty cycle  $\leq 1\%$   
 2. Value at  $Tc = 25^\circ C$

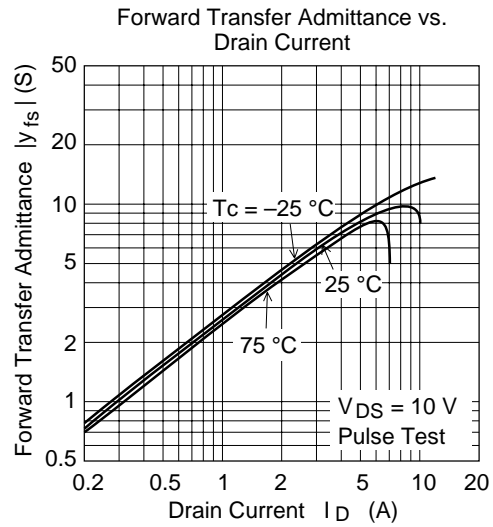
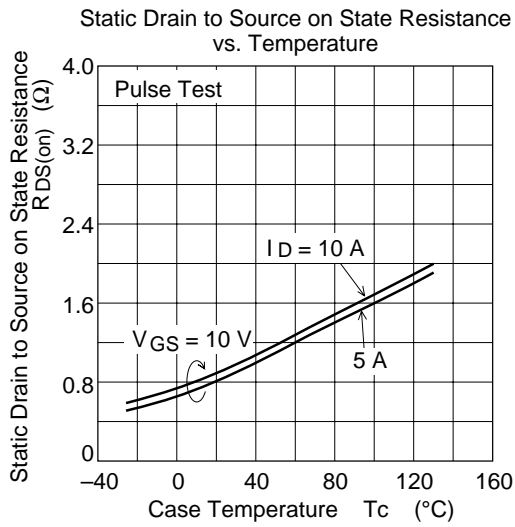
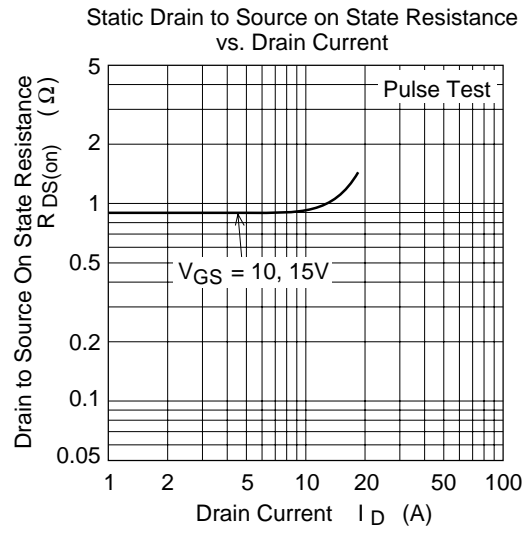
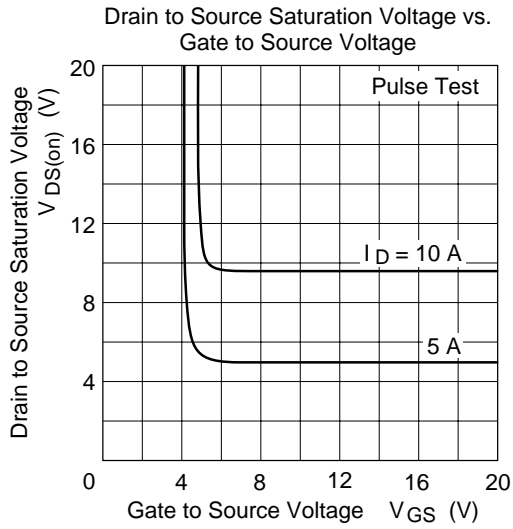
### Electrical Characteristics (Ta = 25°C)

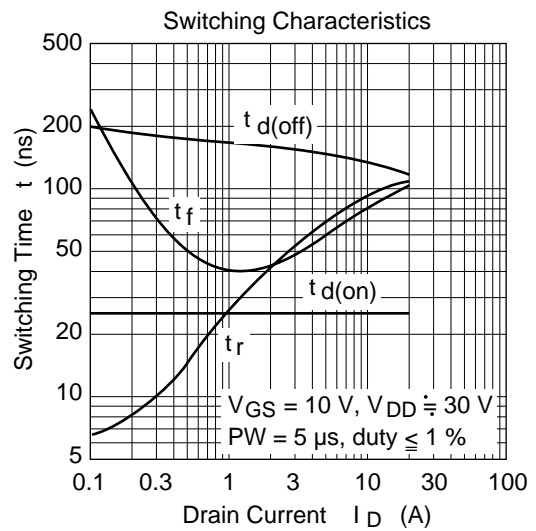
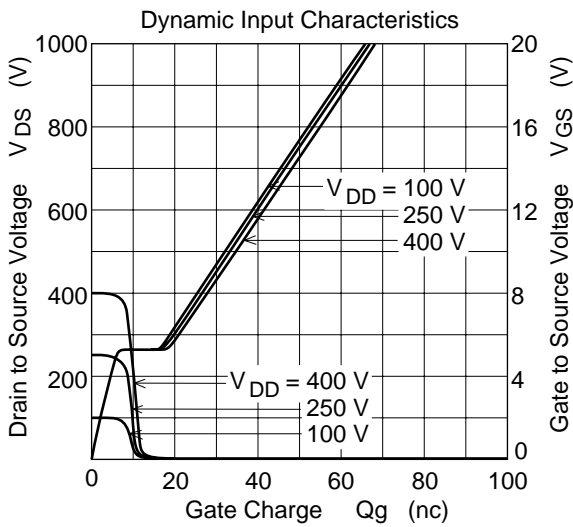
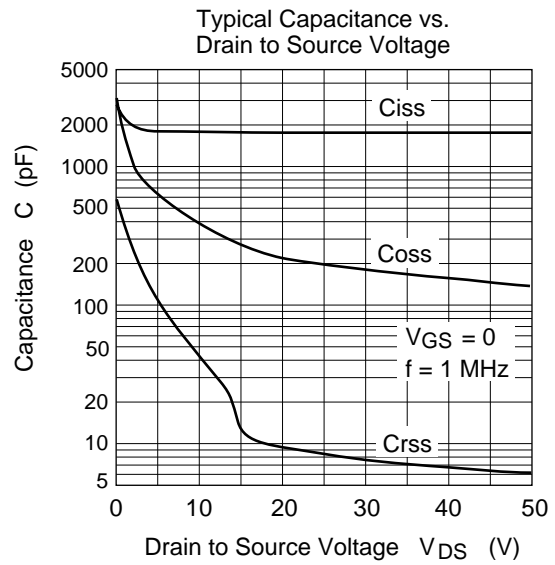
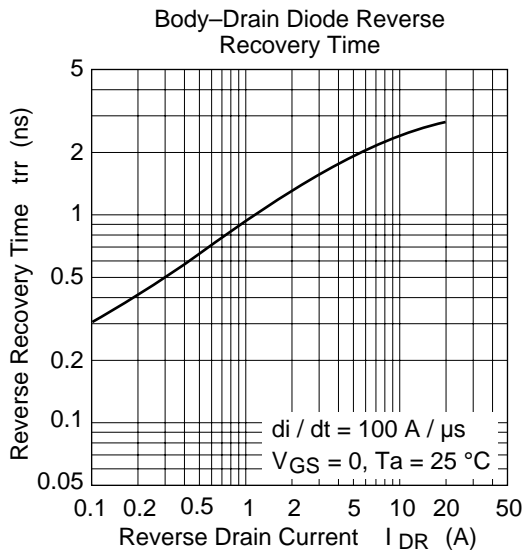
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	700	—	—	V	$I_D = 10mA, V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	$\pm 30$	—	—	V	$I_G = \pm 100\mu A, V_{DS} = 0$
Gate to source leak current	$I_{GSS}$	—	—	$\pm 10$	$\mu A$	$V_{GS} = \pm 25V, V_{DS} = 0$
Zero gate voltage drain current	$I_{DSS}$	—	—	100	$\mu A$	$V_{DS} = 560V, V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	2.0	—	3.0	V	$I_D = 1mA, V_{DS} = 10V^{*3}$
Static drain to source on state resistance	$R_{DS(on)}$	—	0.9	1.2	$\Omega$	$I_D = 6A, V_{GS} = 10V^{*3}$
Forward transfer admittance	$ y_{fs} $	5.5	9.0	—	S	$I_D = 6A, V_{DS} = 10V^{*3}$
Input capacitance	$C_{iss}$	—	1850	—	pF	$V_{DS} = 10V$
Output capacitance	$C_{oss}$	—	400	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	$C_{rss}$	—	45	—	pF	$f = 1MHz$
Total gate charge	$Q_g$	—	35	—	nc	$V_{DD} = 400V$
Gate to source charge	$Q_{gs}$	—	8	—	nc	$V_{GS} = 10V$
Gate to drain charge	$Q_{gd}$	—	10	—	nc	$I_D = 12A$
Turn-on delay time	$t_{d(on)}$	—	25	—	ns	$I_D = 6A, R_L = 5\Omega$
Rise time	$t_r$	—	65	—	ns	$V_{GS} = 10V$
Turn-off delay time	$t_{d(off)}$	—	140	—	ns	
Fall time	$t_f$	—	55	—	ns	
Body-drain diode forward voltage	$V_{DF}$	—	0.95	—	V	$I_F = 12A, V_{GS} = 0$
Body-drain diode reverse recovery time	$t_{rr}$	—	2.5	—	$\mu s$	$I_F = 12A, V_{GS} = 0$ $diF/dt = 100A/\mu s$

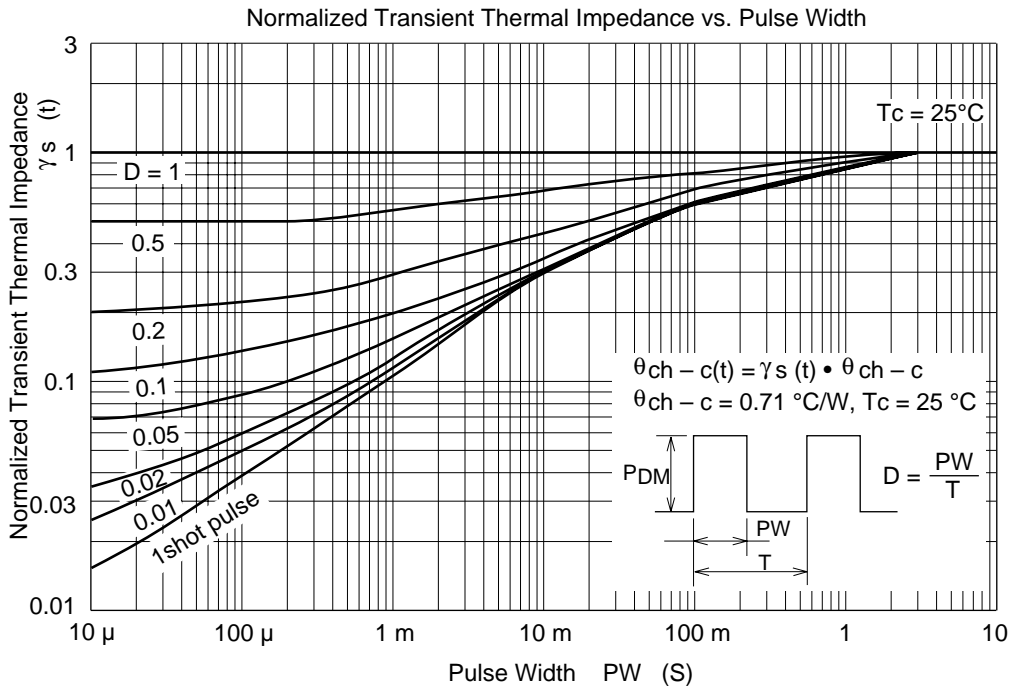
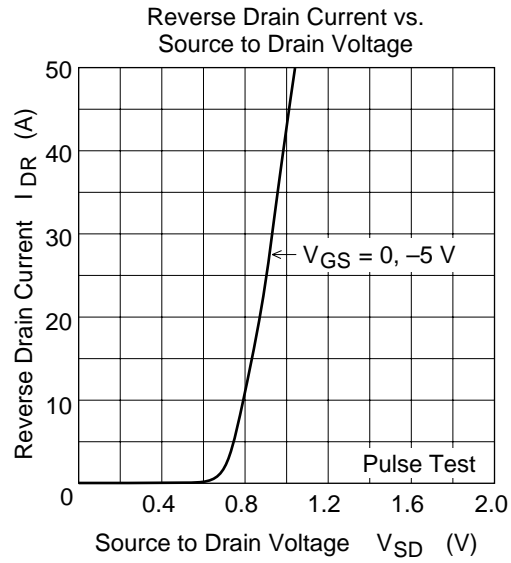
Note: 3. Pulse test

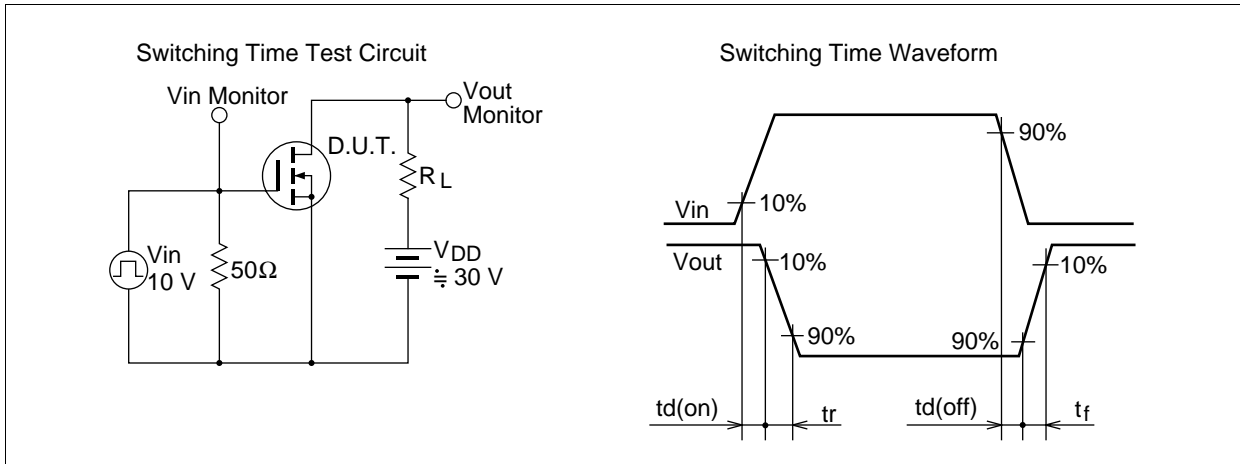
Main Characteristics







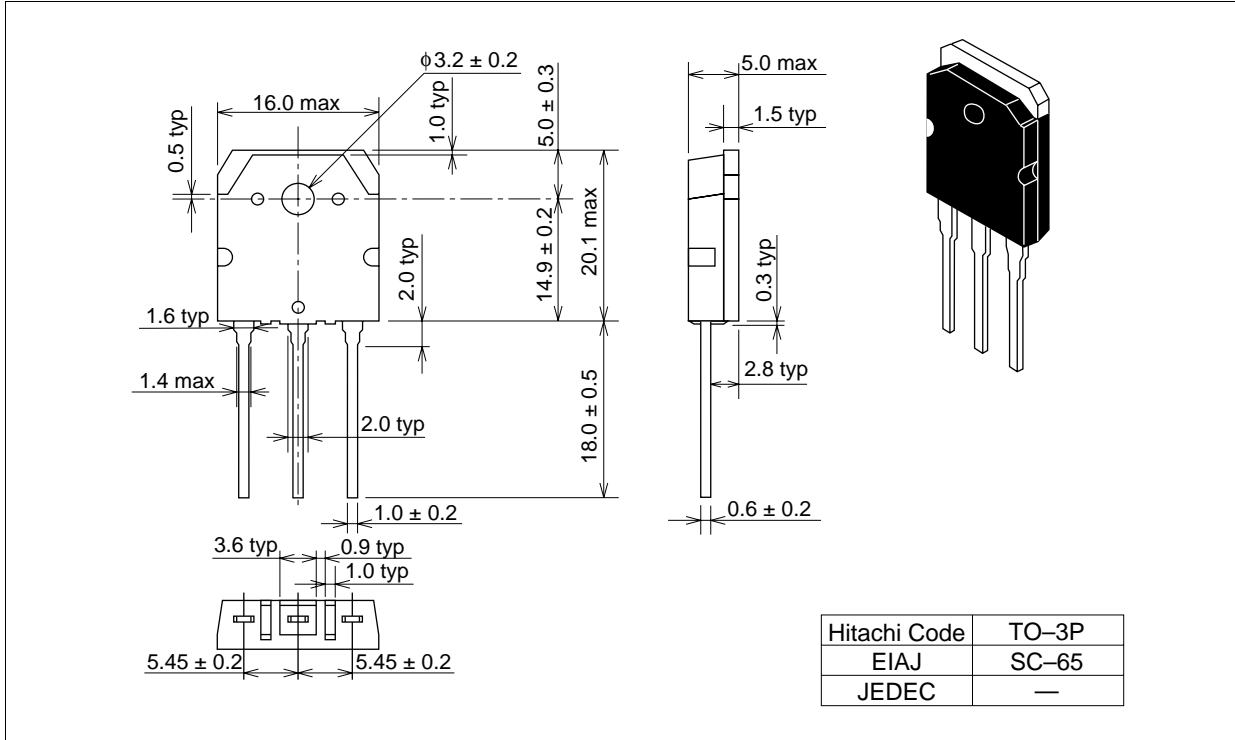




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## Package Dimentions

Unit: mm





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