
2SK1933

Silicon N-Channel MOS FET

HITACHI

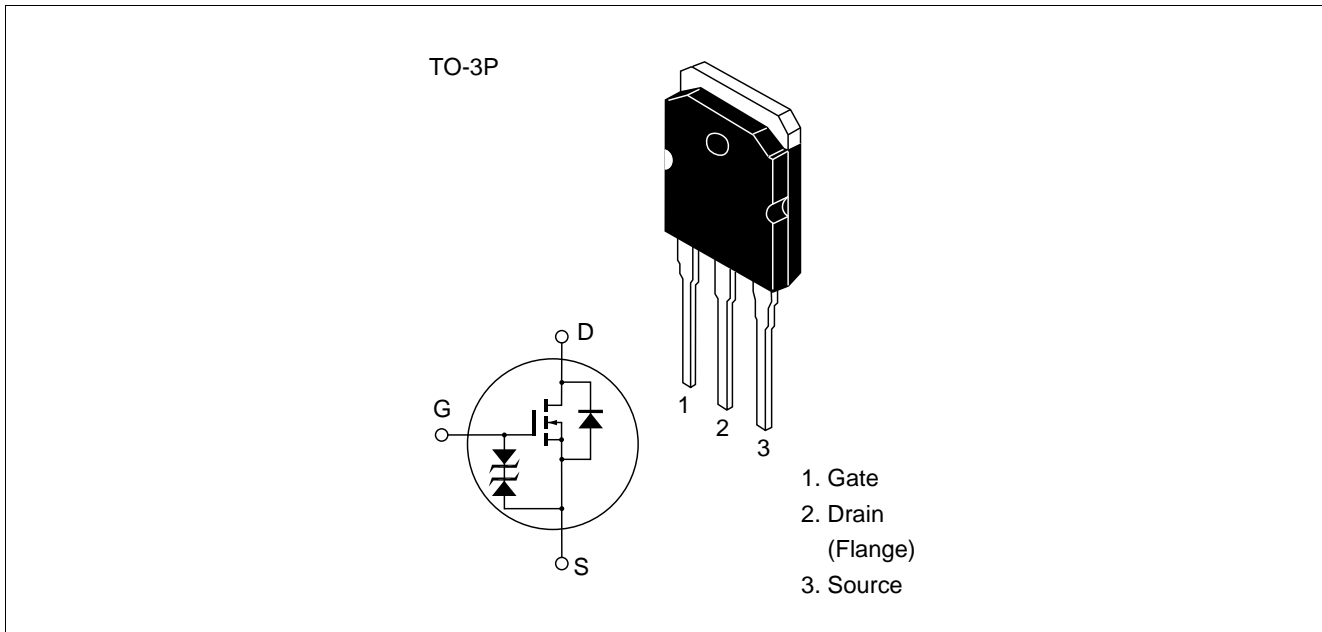
Application

High speed power switching

Features

- Low on-resistance
- High speed switching
- No secondary breakdown
- Suitable for Switching regulator

Outline



Absolute Maximum Ratings (Ta = 25°C)

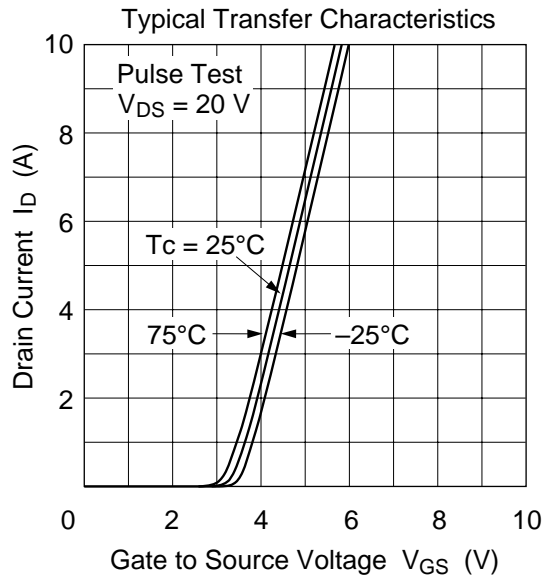
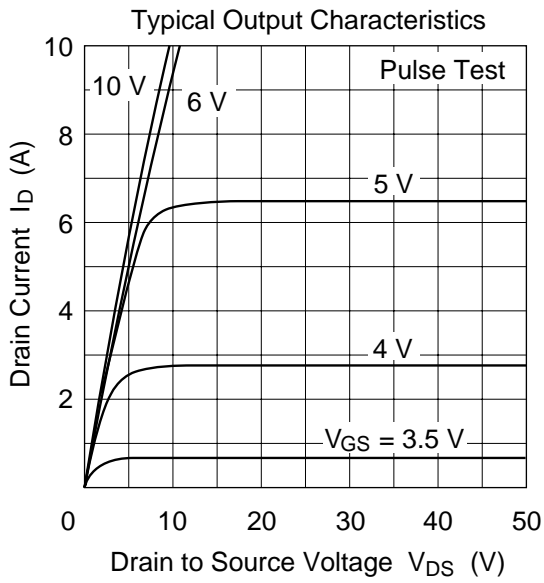
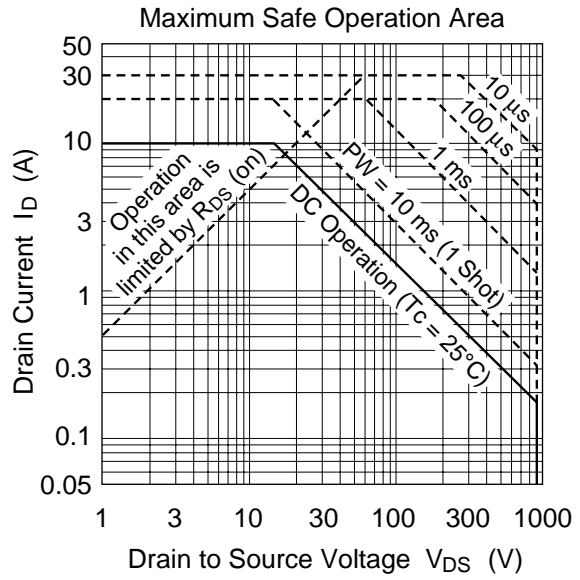
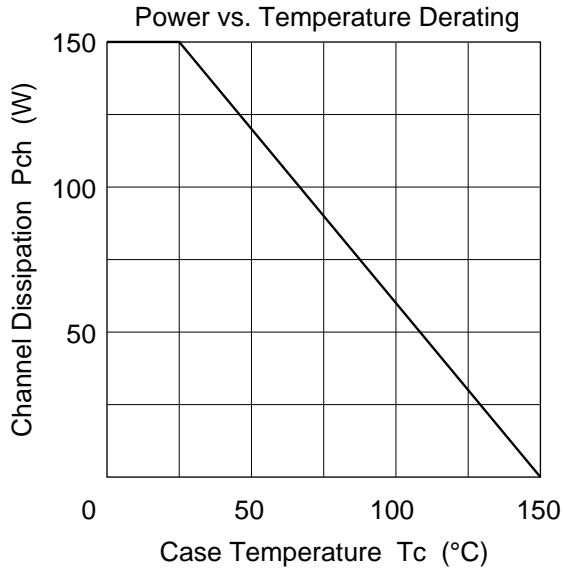
Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	900	V
Gate to source voltage	V_{GSS}	±30	V
Drain current	I_D	10	A
Drain peak current	$I_{D(pulse)}^{*1}$	30	A
Body to drain diode reverse drain current	I_{DR}	10	A
Channel dissipation	P_{ch}^{*2}	150	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

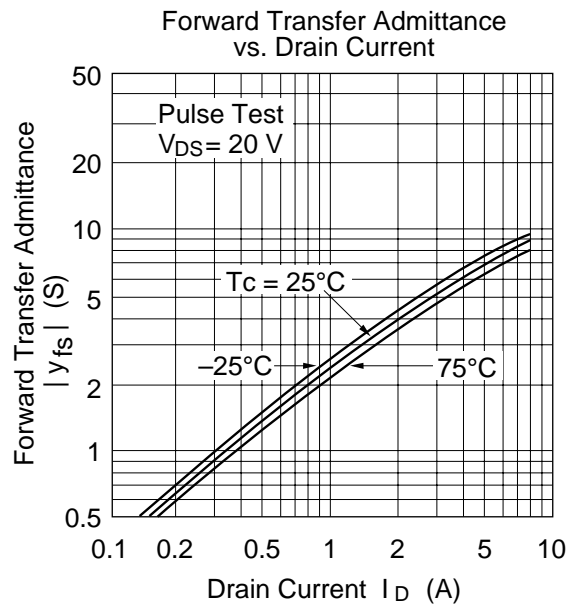
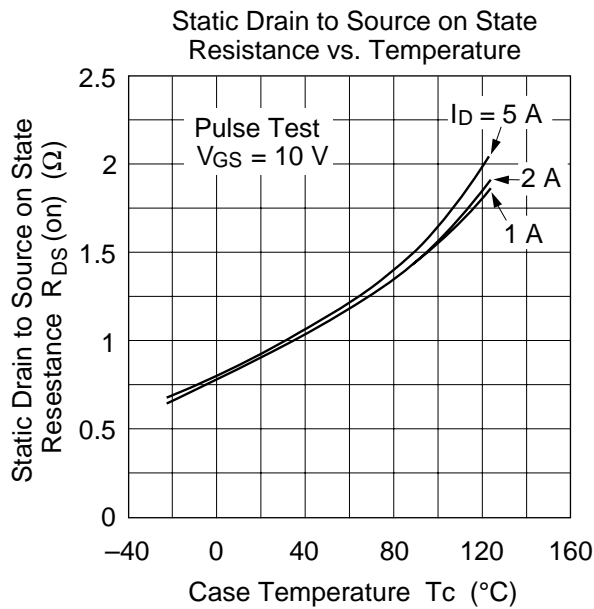
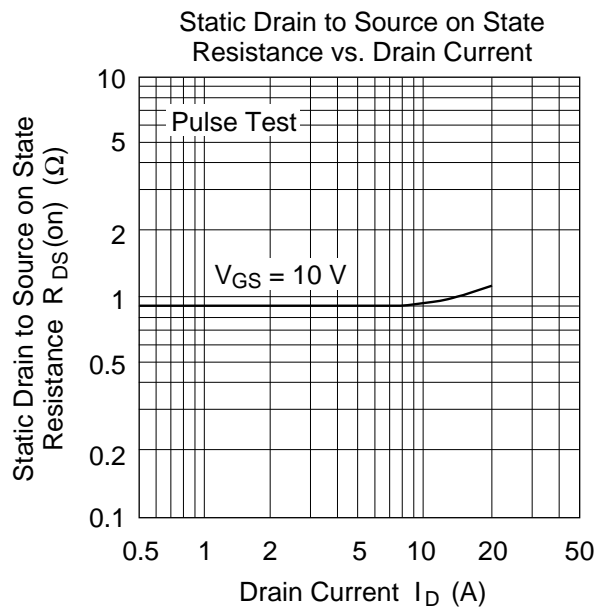
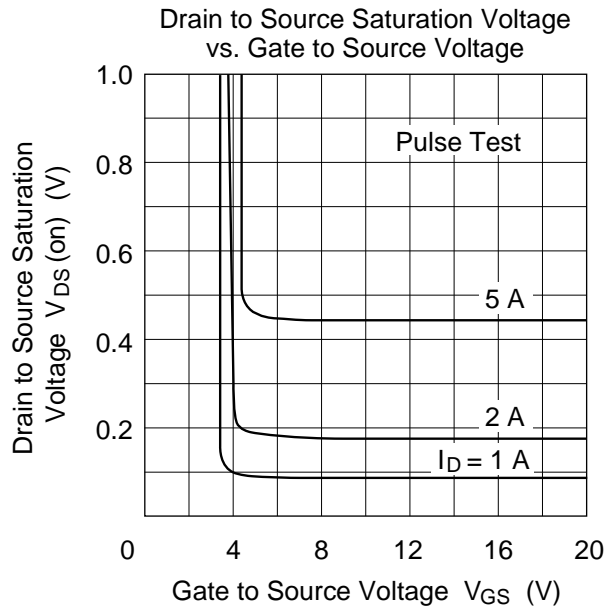
- Notes 1. $PW \leq 10 \mu s$, duty cycle $\leq 1 \%$
2. Value at $T_c = 25^\circ C$

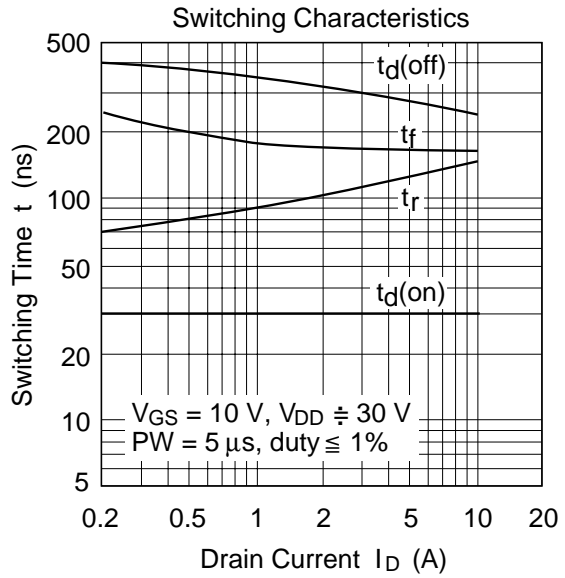
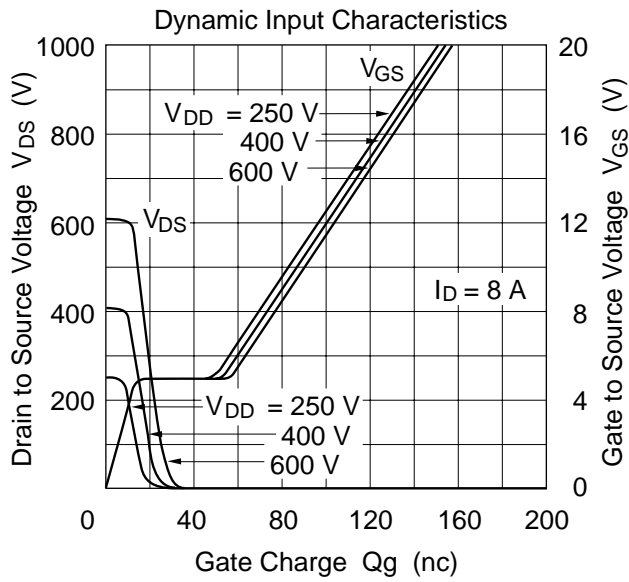
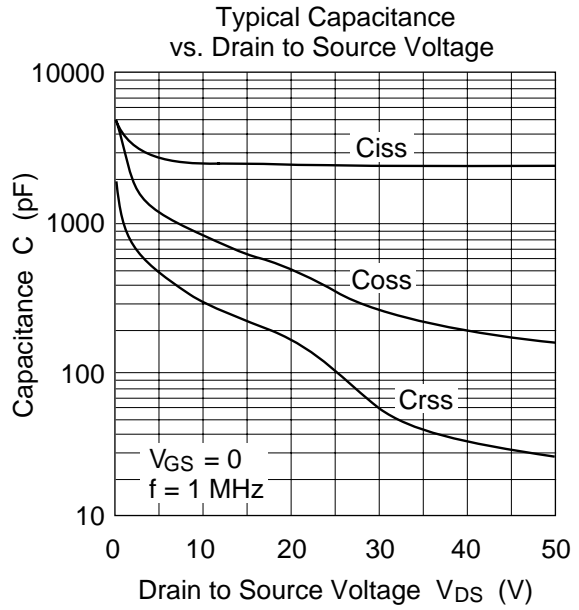
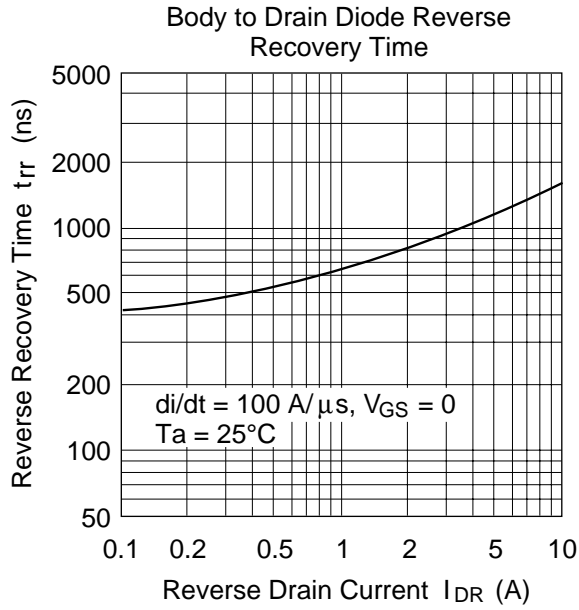
Electrical Characteristics (Ta = 25°C)

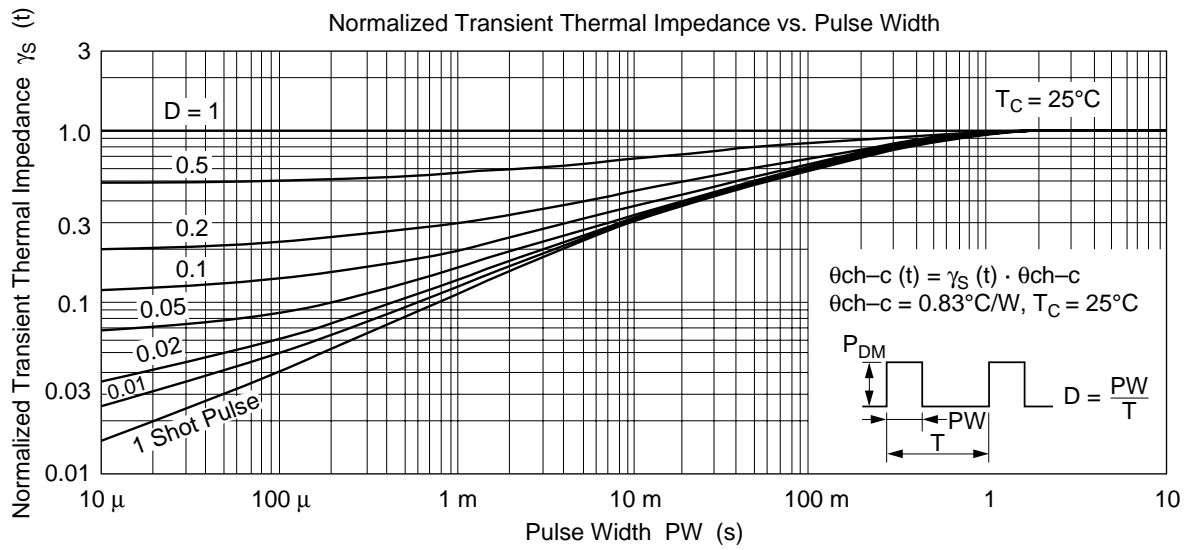
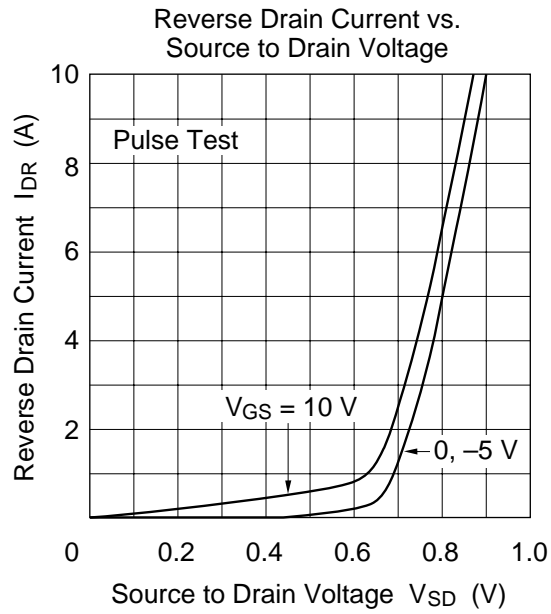
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	900	—	—	V	$I_D = 10 \text{ mA}, V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	± 30	—	—	V	$I_G = \pm 100 \mu\text{A}, V_{DS} = 0$
Gate to source leak current	I_{GSS}	—	—	± 10	μA	$V_{GS} = \pm 25 \text{ V}, V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	250	μA	$V_{DS} = 720 \text{ V}, V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	2.0	—	3.0	V	$I_D = 1 \text{ mA}, V_{DS} = 10 \text{ V}$
Static drain to source on state resistance	$R_{DS(on)}$	—	0.9	1.2	Ω	$I_D = 5 \text{ A}$ $V_{GS} = 10 \text{ V}^{*1}$
Forward transfer admittance	$ y_{fs} $	4.5	7	—	S	$I_D = 5 \text{ A}$ $V_{DS} = 20 \text{ V}^{*1}$
Input capacitance	C_{iss}	—	2620	—	pF	$V_{DS} = 10 \text{ V}$
Output capacitance	C_{oss}	—	830	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	C_{rss}	—	320	—	pF	$f = 1 \text{ MHz}$
Turn-on delay time	$t_{d(on)}$	—	30	—	ns	$I_D = 5 \text{ A}$
Rise time	t_r	—	140	—	ns	$V_{GS} = 10 \text{ V}$
Turn-off delay time	$t_{d(off)}$	—	285	—	ns	$R_L = 6 \Omega$
Fall time	t_f	—	170	—	ns	
Body to drain diode forward voltage	V_{DF}	—	0.9	—	V	$I_F = 10 \text{ A}, V_{GS} = 0$
Body to drain diode reverse recovery time	t_{rr}	—	1600	—	ns	$I_F = 10 \text{ A}, V_{GS} = 0,$ $di_F / dt = 100 \text{ A} / \mu\text{s}$

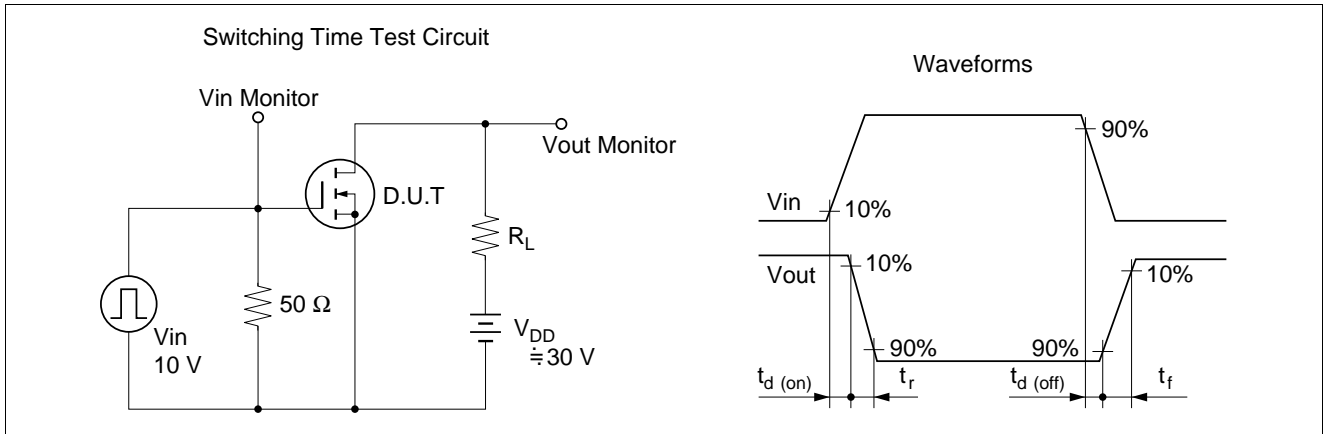
Note 1. Pulse Test



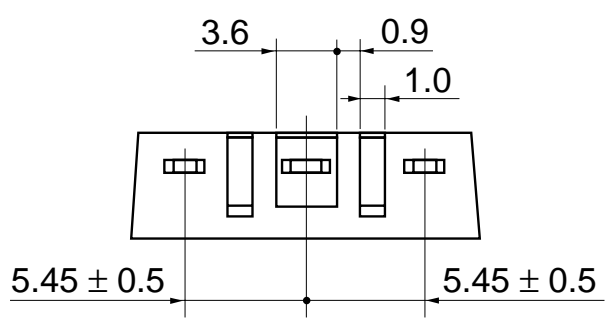
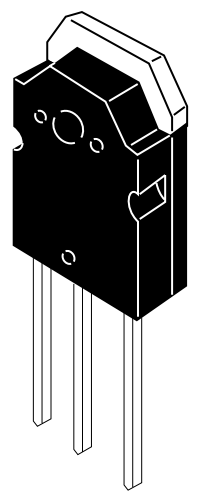
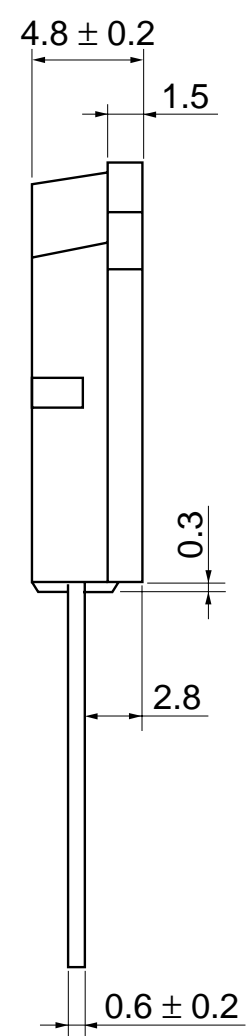
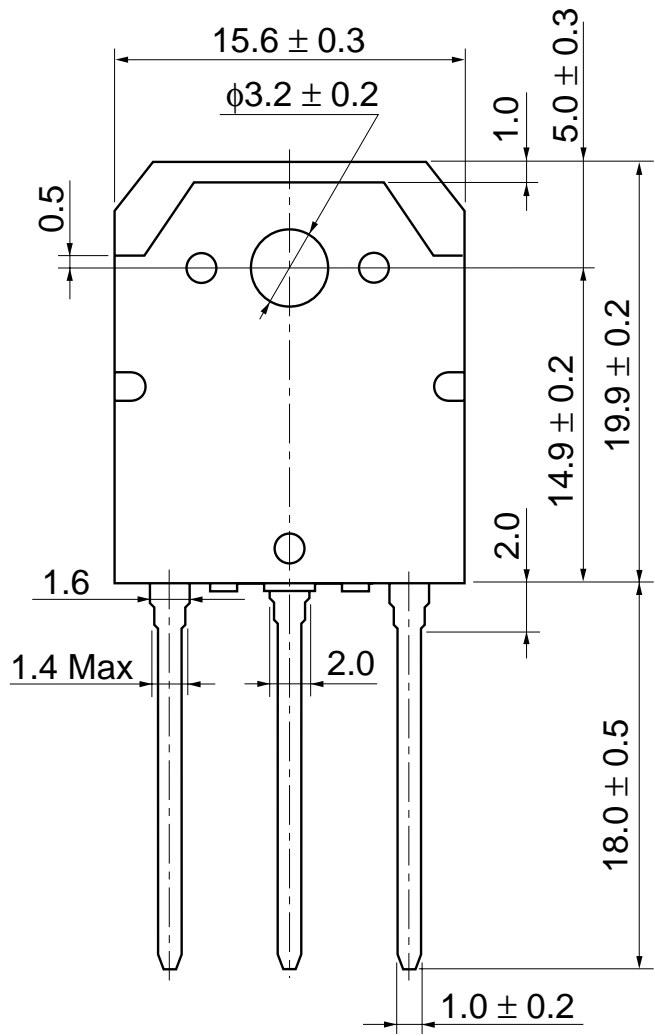








Unit: mm



Hitachi Code	TO-3P
JEDEC	—
EIAJ	Conforms
Weight (reference value)	5.0 g

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