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# 2SK2730

Silicon N Channel MOS FET  
High Speed Power Switching

# HITACHI

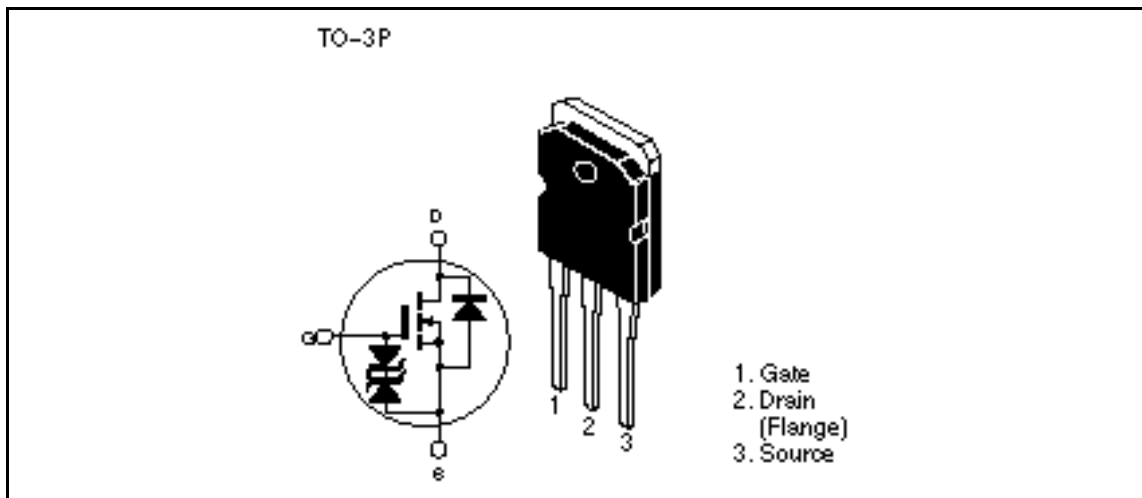
ADE-208-493 A  
2nd. Edition

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## Features

- Low on-resistance
- High speed switching
- Low drive current
- Avalanche ratings

## Outline



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## 2SK2730

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### 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	$I_D$	25	A
Drain peak current	$I_{D(pulse)}^{*1}$	100	A
Body to drain diode reverse drain current	$I_{DR}$	25	A
Avalanche current	$I_{AP}^{*3}$	25	A
Avalanche energy	$E_{AR}^{*3}$	35	mJ
Channel dissipation	$Pch^{*2}$	175	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

- Notes: 1. PW = 10µs, duty cycle = 1 %  
2. Value at Tc = 25°C  
3. Value at Tch = 25°C, Rg = 50 Ω, L = 100 µH

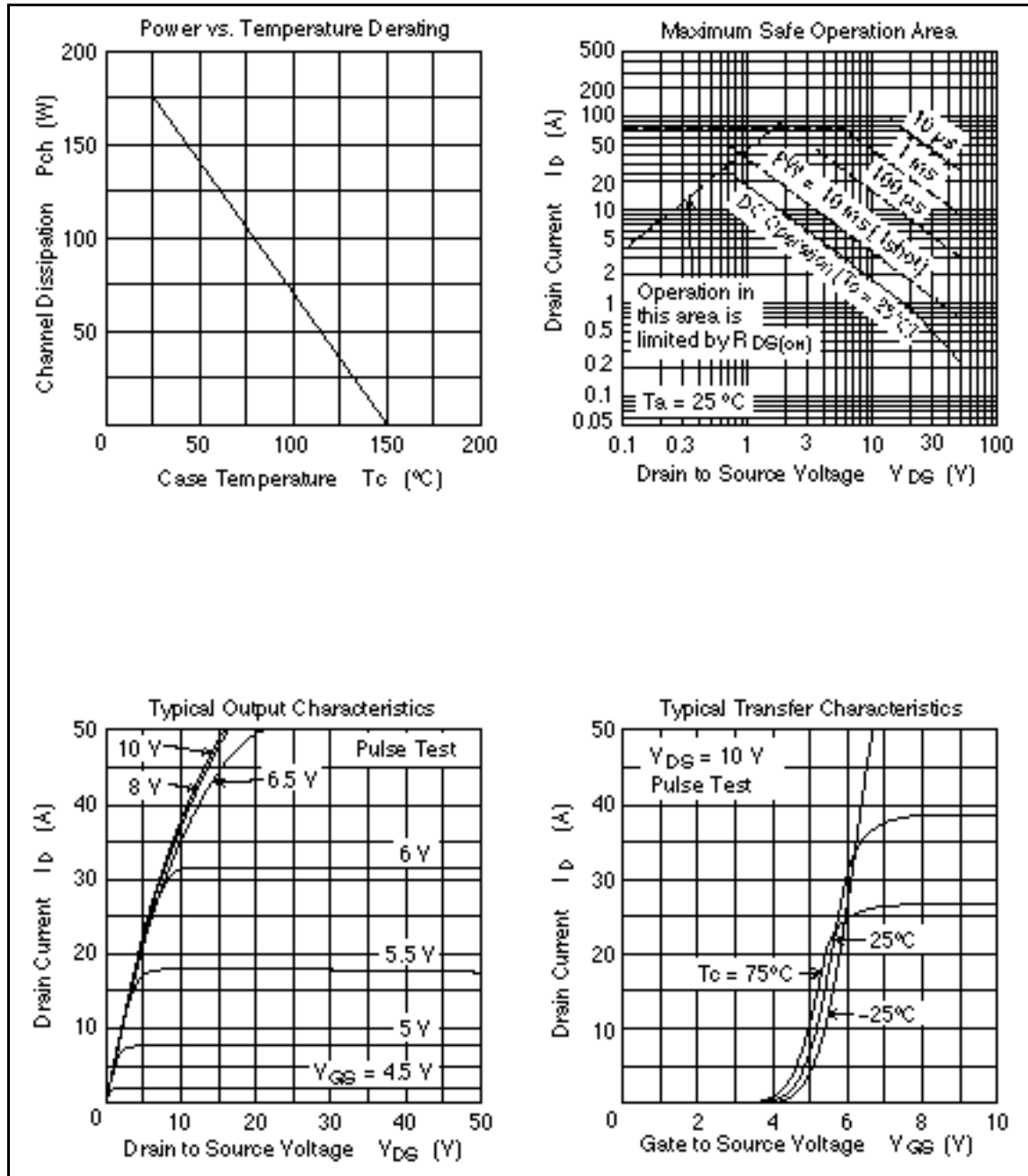
## Electrical Characteristics (Ta = 25°C)

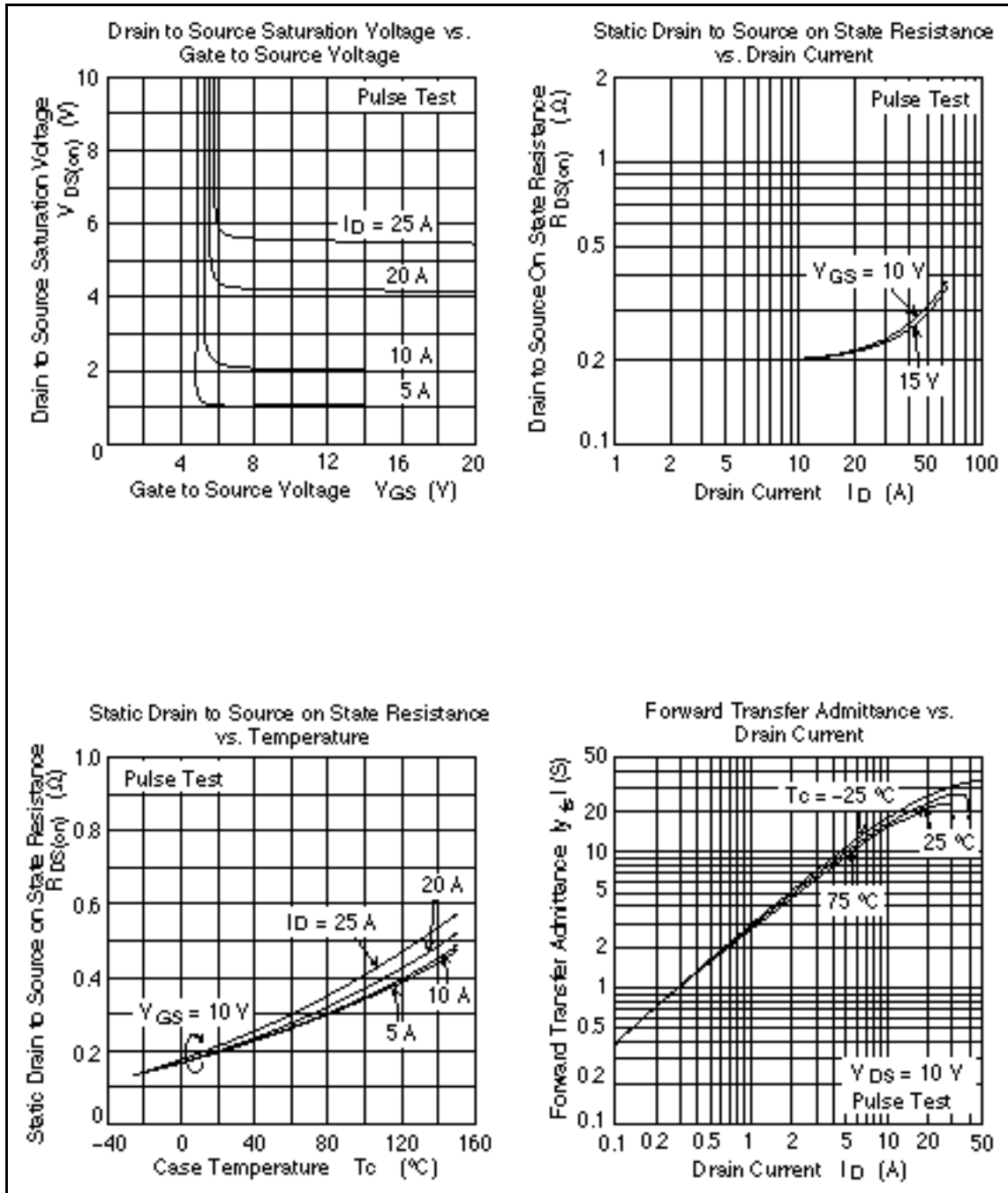
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	500	—	—	V	$I_D = 10\text{mA}, V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	$\pm 30$	—	—	V	$I_G = \pm 100\mu\text{A}, V_{DS} = 0$
Gate to source leak current	$I_{GSS}$	—	—	$\pm 10$	$\mu\text{A}$	$V_{GS} = \pm 25\text{V}, V_{DS} = 0$
Zero gate voltage drain current	$I_{DSS}$	—	—	10	$\mu\text{A}$	$V_{DS} = 500\text{V}, V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	2.5	—	3.5	V	$I_D = 1\text{mA}, V_{DS} = 10\text{V}^{*1}$
Static drain to source on state resistance	$R_{DS(on)}$	—	0.2	0.24		$I_D = 15\text{A}, V_{GS} = 10\text{V}^{*1}$
Forward transfer admittance	$ y_{fs} $	12	20	—	S	$I_D = 15\text{A}, V_{DS} = 10\text{V}^{*1}$
Input capacitance	$C_{iss}$	—	3500	—	pF	$V_{DS} = 10\text{V}$
Output capacitance	$C_{oss}$	—	1000	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	$C_{rss}$	—	150	—	pF	$f = 1\text{MHz}$
Total gate charge	$Q_g$	—	65	—	nc	$V_{DD} = 400\text{V}$
Gate to source charge	$Q_{gs}$	—	16	—	nc	$V_{GS} = 10\text{V}$
Gate to drain charge	$Q_{gd}$	—	24	—	nc	$I_D = 25\text{A}$
Turn-on delay time	$t_{d(on)}$	—	50	—	ns	$V_{GS} = 10\text{V}, I_D = 15\text{A}$
Rise time	$t_r$	—	140	—	ns	$R_L = 2$
Turn-off delay time	$t_{d(off)}$	—	200	—	ns	
Fall time	$t_f$	—	110	—	ns	
Body to drain diode forward voltage	$V_{DF}$	—	1.1	—	V	$I_D = 25\text{A}, V_{GS} = 0$
Body to drain diode reverse recovery time	$t_{rr}$	—	450	—	ns	$I_F = 25\text{A}, V_{GS} = 0$ $diF/dt = 100\text{A}/\mu\text{s}$

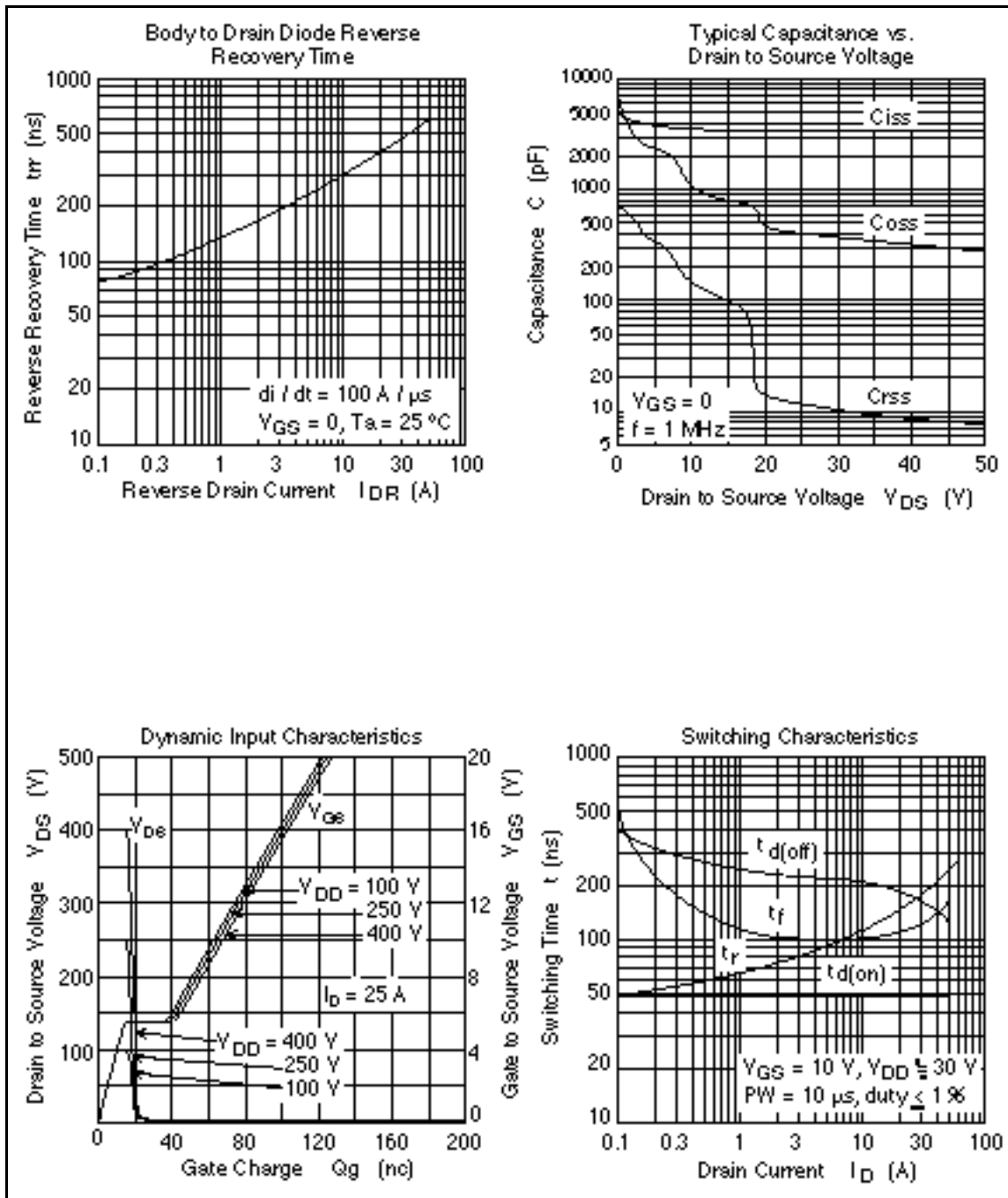
Note: 1. Pulse test

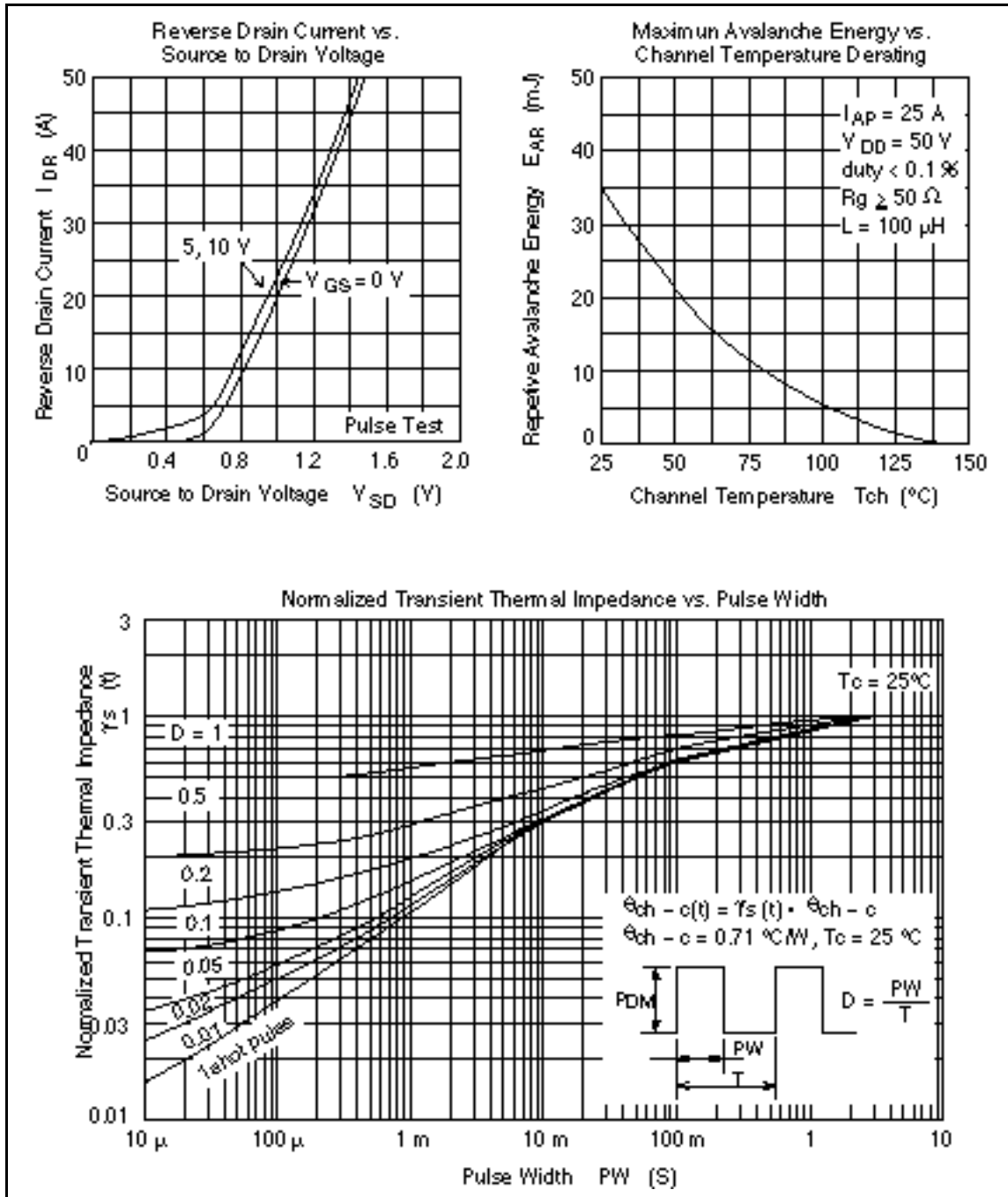
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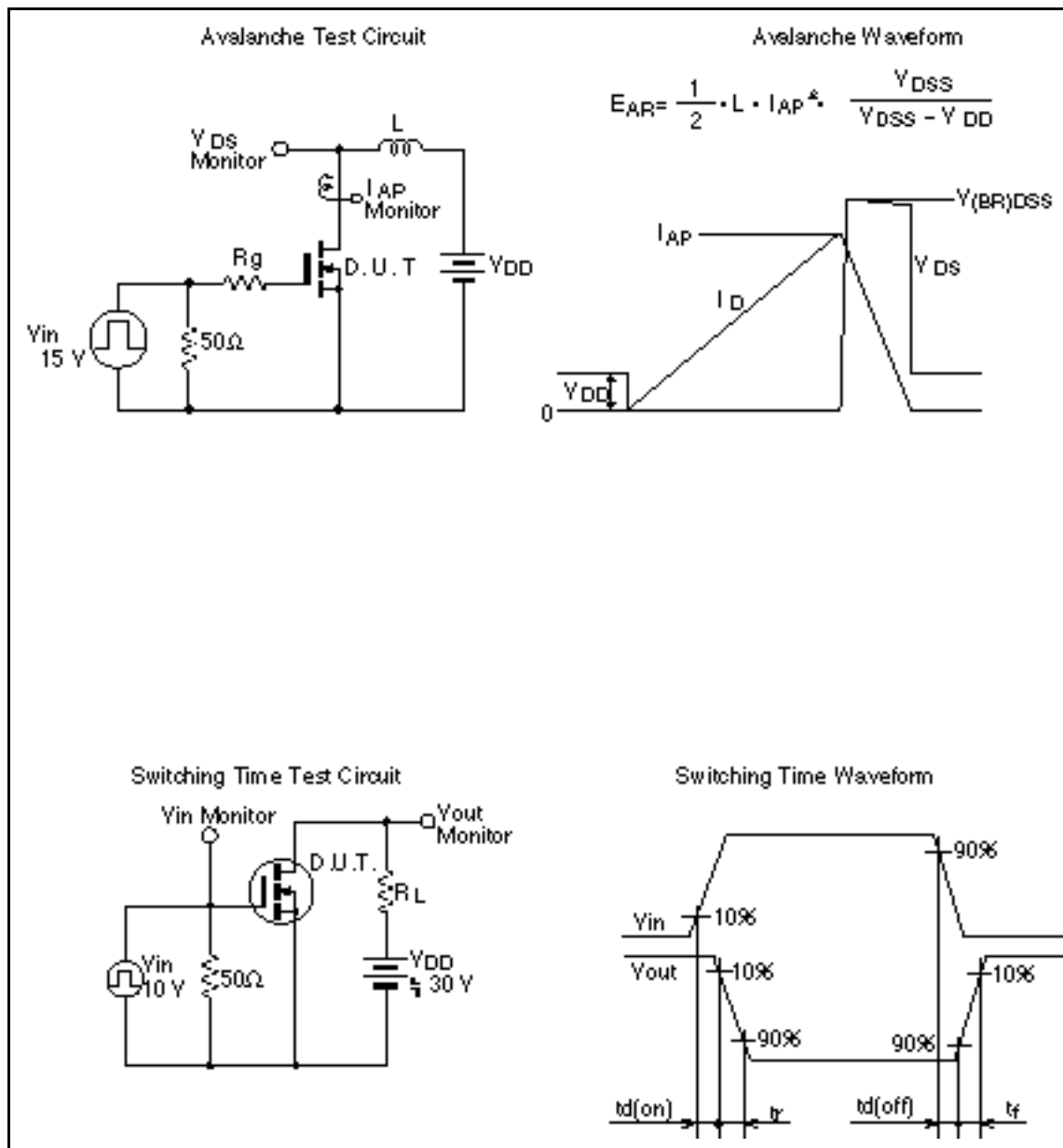
## Main Characteristics







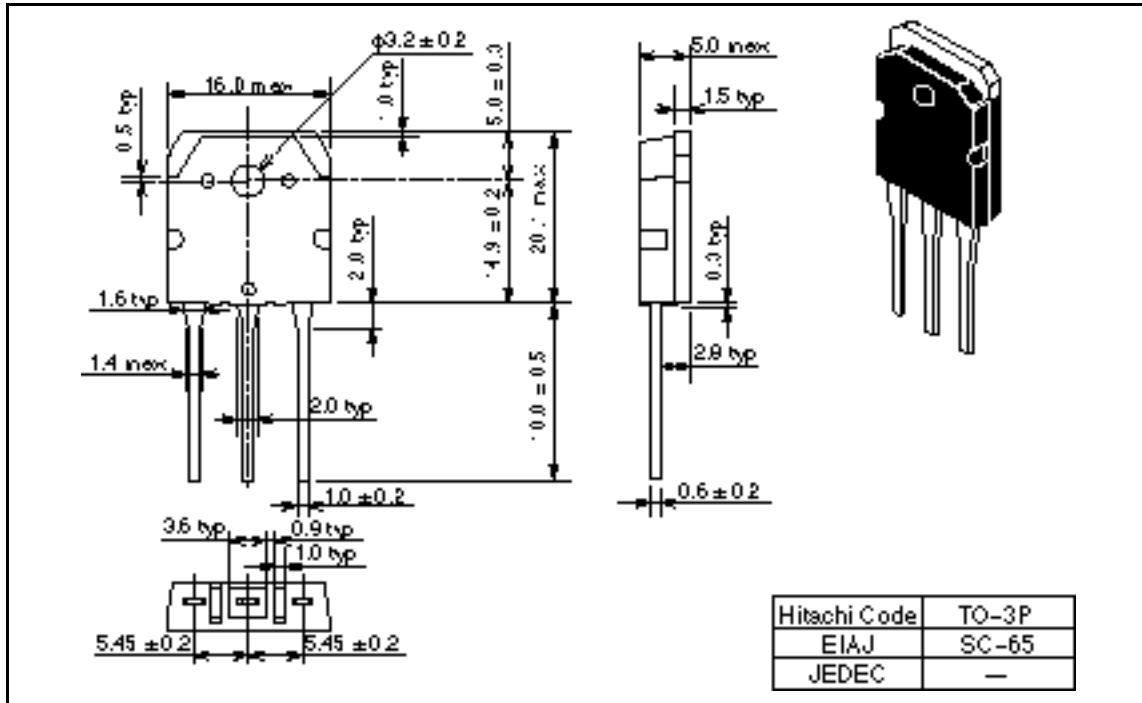






Package Dimensions

Unit: mm



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