
2SK2730

Silicon N Channel MOS FET
High Speed Power Switching

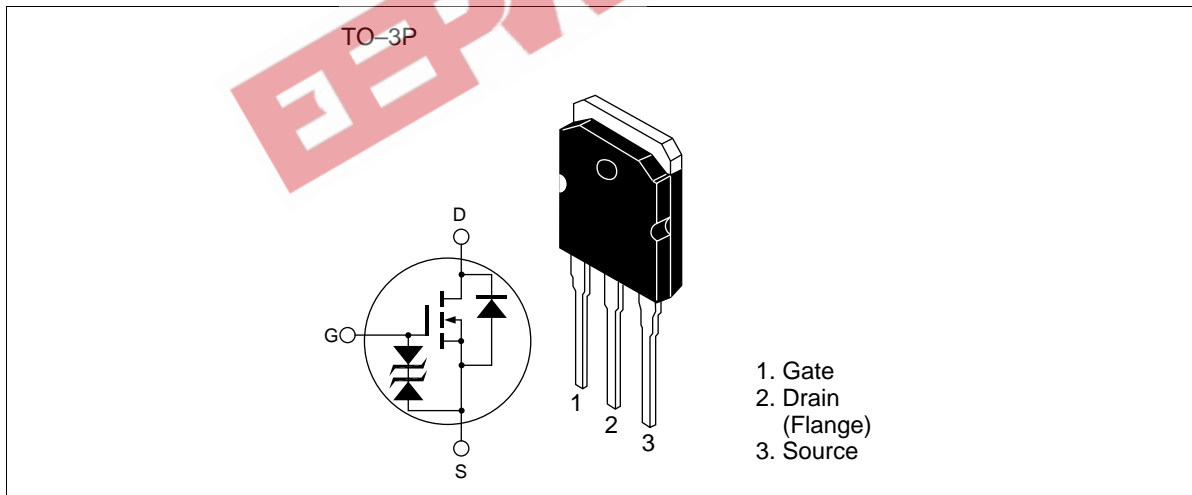
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ADE-208-493 A (Z)
2nd. Edition
September 1997

Features

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

Outline



2SK2730

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. $PW \leq 10\mu s$, duty cycle $\leq 1\%$
2. Value at $T_c = 25^\circ C$
3. Value at $T_{ch} = 25^\circ C$, $R_g \geq 50\Omega$

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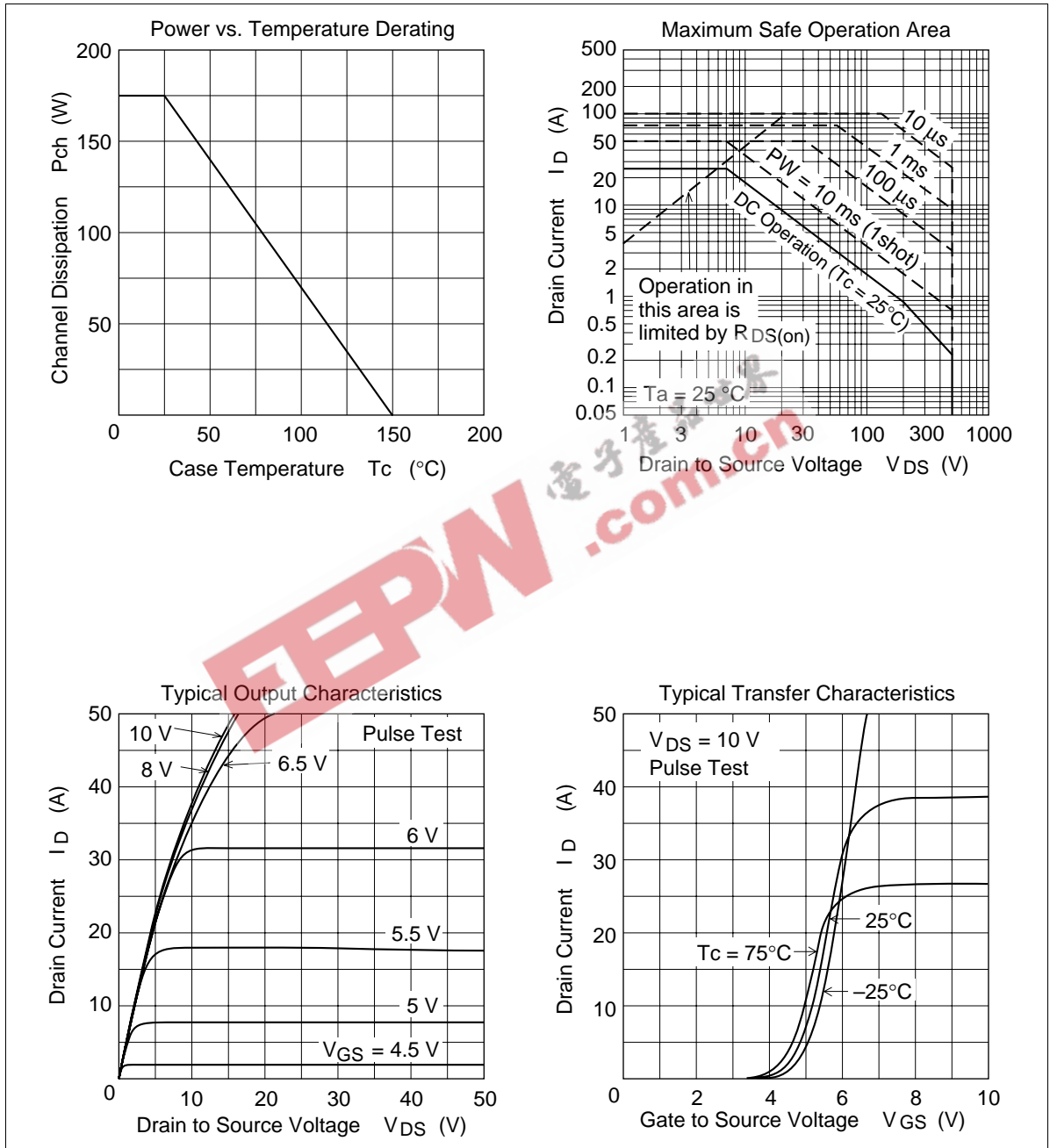
Electrical Characteristics (T_a = 25°C)

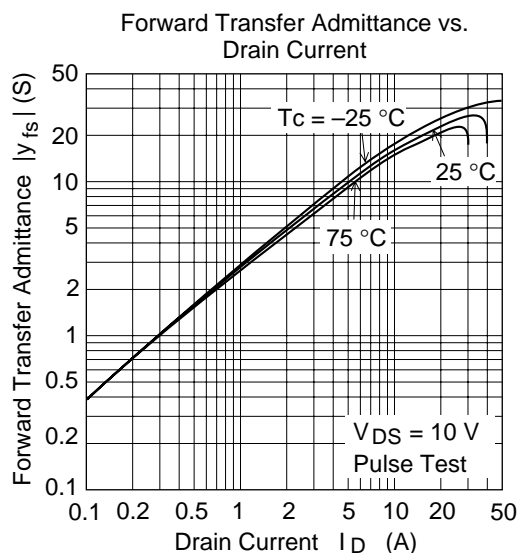
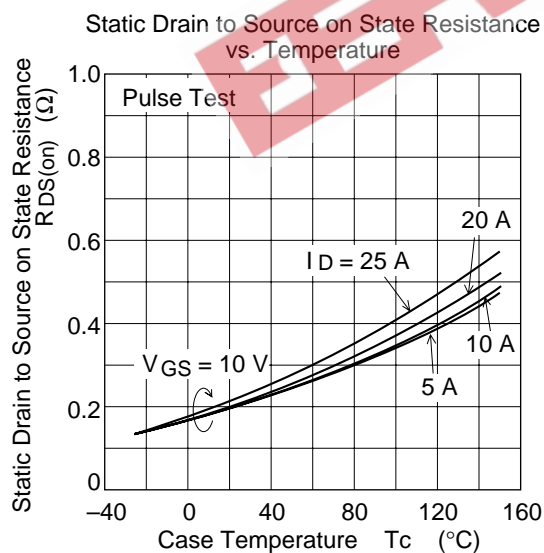
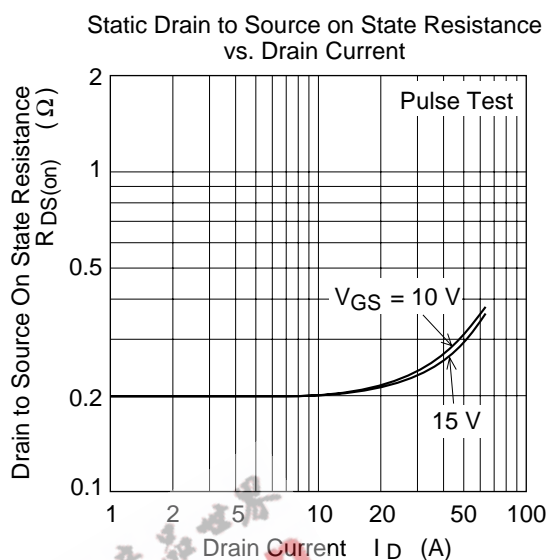
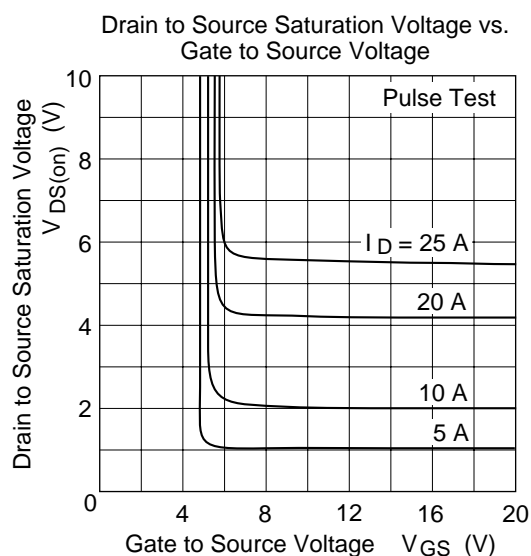
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	500	—	—	V	$I_D = 10\text{mA}, V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	±30	—	—	V	$I_G = \pm 100\mu\text{A}, V_{DS} = 0$
Gate to source leak current	I_{GSS}	—	—	±10	μA	$V_{GS} = \pm 25\text{V}, V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	10	μA	$V_{DS} = 500\text{V}, V_{GS} = 0$
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	Ω	$I_D = 15\text{A}, V_{GS} = 10\text{V}^{*1}$
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	$R_L = 2\Omega$
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	$I_F = 25\text{A}, V_{GS} = 0$ $di_F/dt = 100\text{A}/\mu\text{s}$

Note: 1. Pulse test

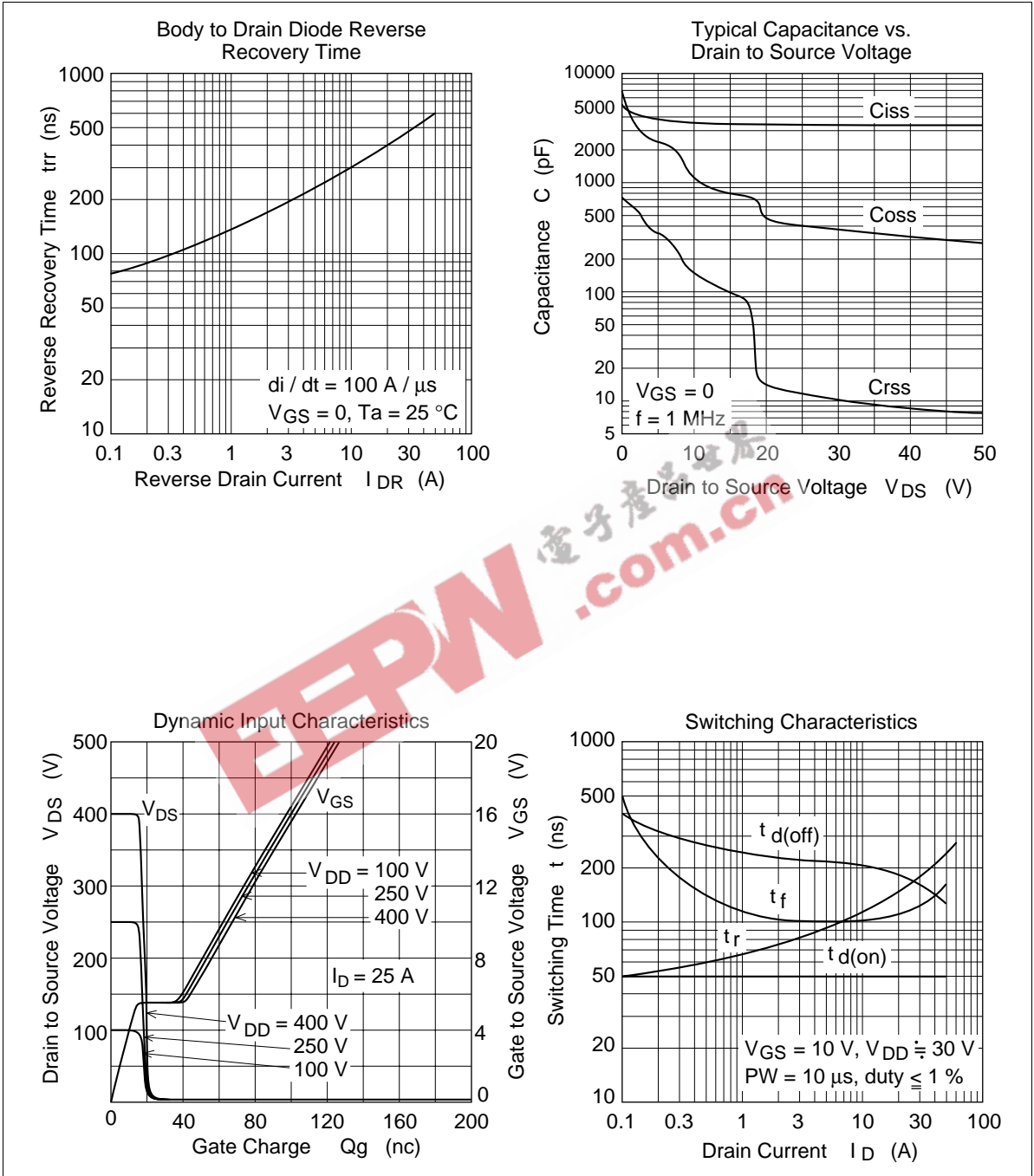
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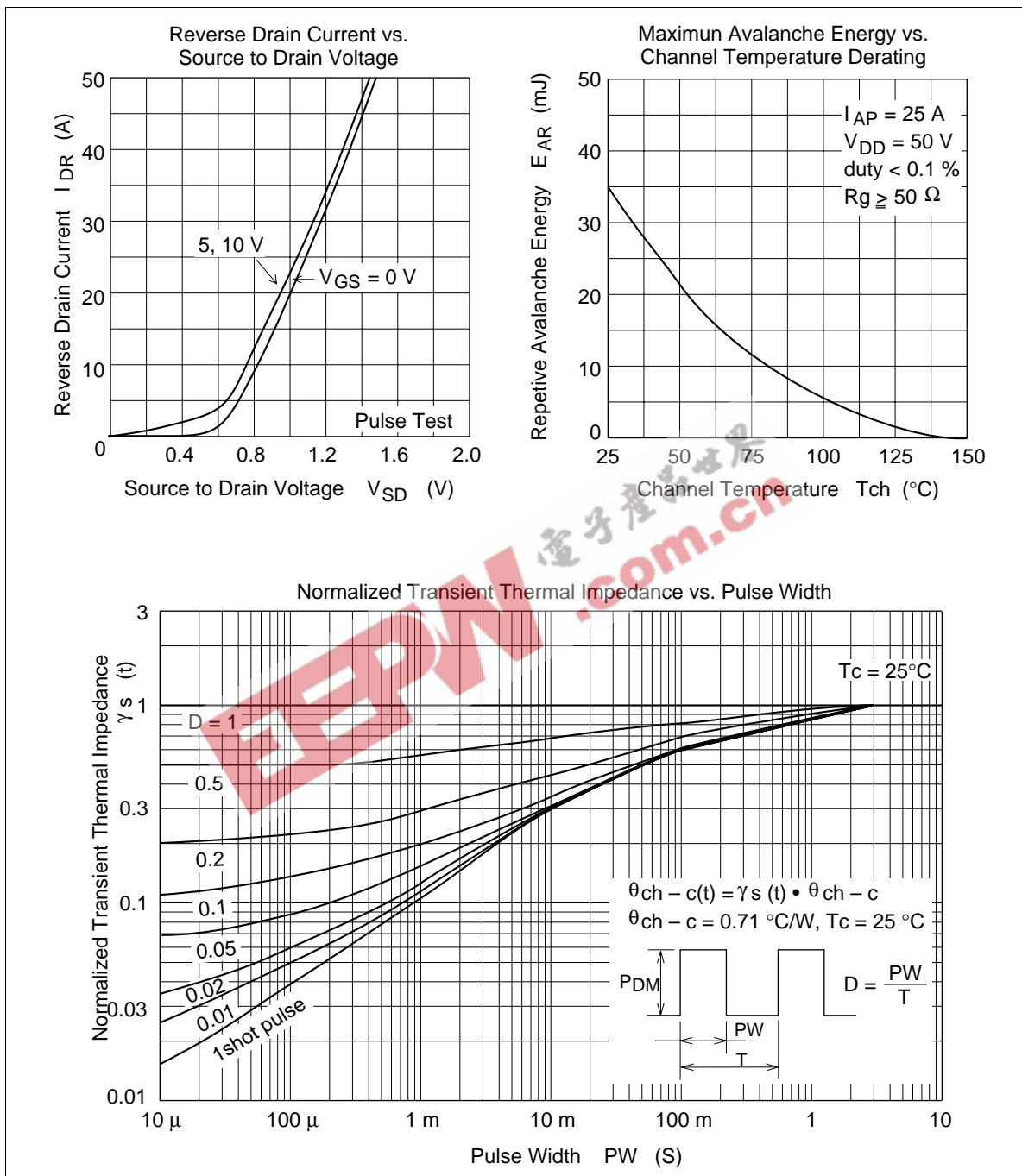
Main Characteristics



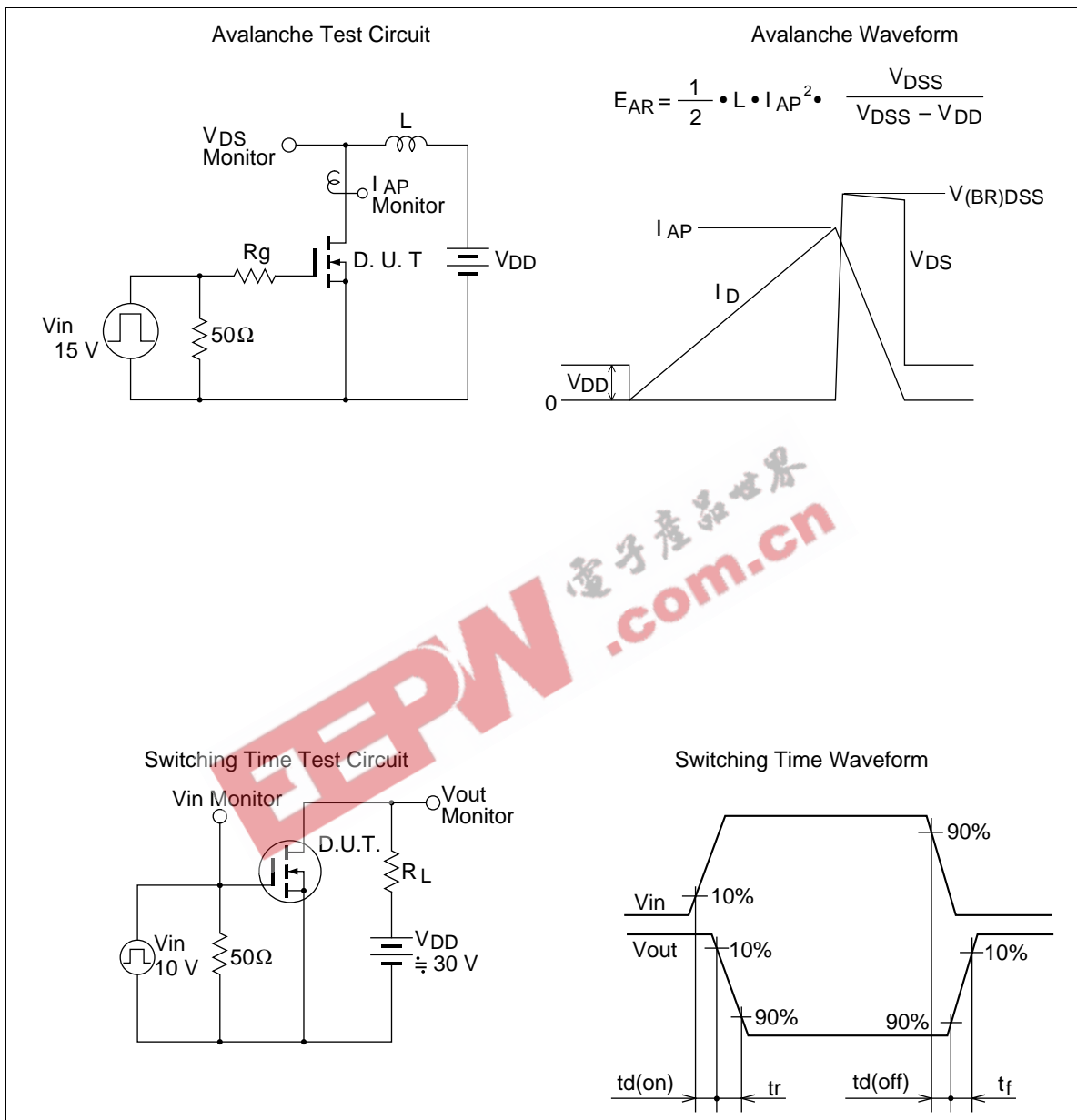


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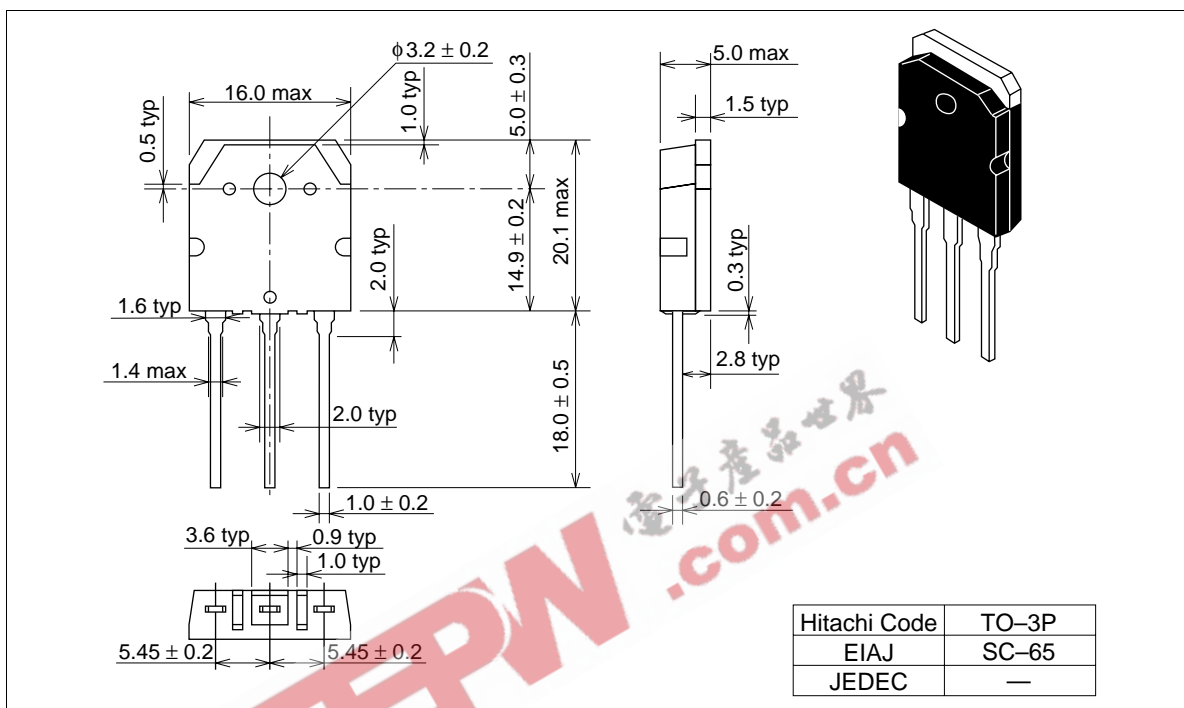


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Package Dimensions

Unit: mm



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