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# 2SK2738

Silicon N Channel MOS FET  
High Speed Power Switching

# HITACHI

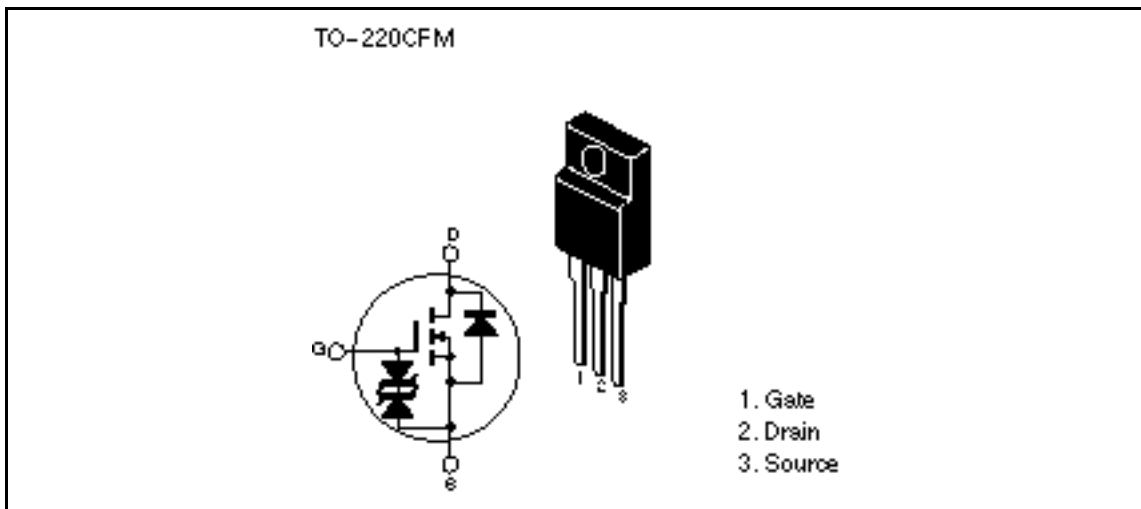
ADE-208-483  
1st. Edition

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## Features

- Low on-resistance  
 $R_{DS} = 15 \text{ m}\Omega$  typ
- High speed switching
- 4V gate drive device can be driven from 5V source

## Outline



## 2SK2738

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

Item	Symbol	Ratings	Unit
Drain to source voltage	$V_{DSS}$	60	V
Gate to source voltage	$V_{GSS}$	$\pm 20$	V
Drain current	$I_D$	40	A
Drain peak current	$I_{D(pulse)}^{*1}$	160	A
Body to drain diode reverse drain current	$I_{DR}$	40	A
Avalanche current	$I_{AP}^{*3}$	40	A
Avalanche Energy	$E_{AR}^{*3}$	137	mJ
Channel dissipation	$P_{ch}^{*2}$	30	W
Channel temperature	$T_{ch}$	150	°C
Storage temperature	$T_{stg}$	-55 to +150	°C

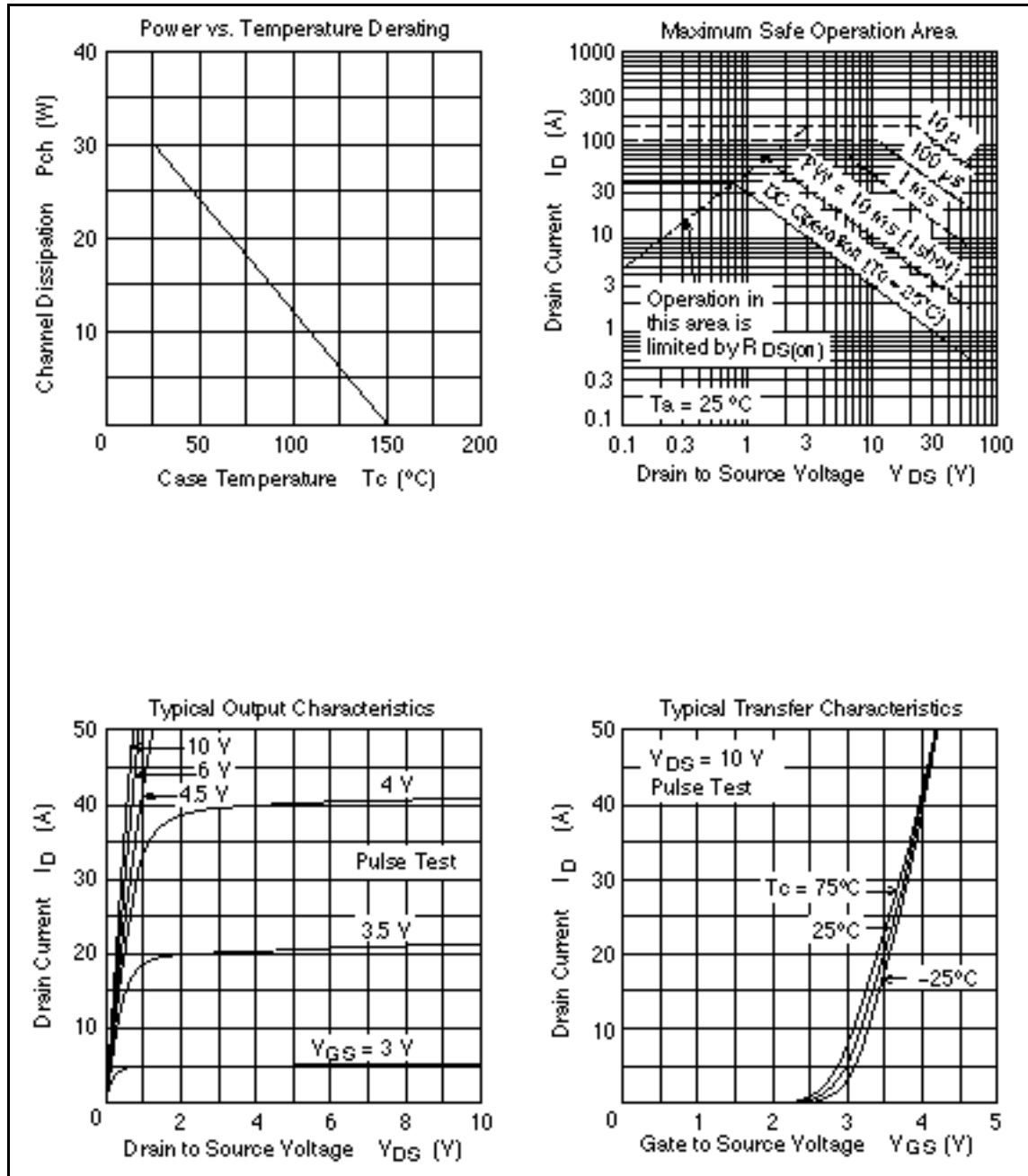
Notes: 1. PW 10 $\mu$ s, duty cycle 1 %  
 2. Value at Tc = 25°C  
 3. Value at Tch = 25°C, Rg 50

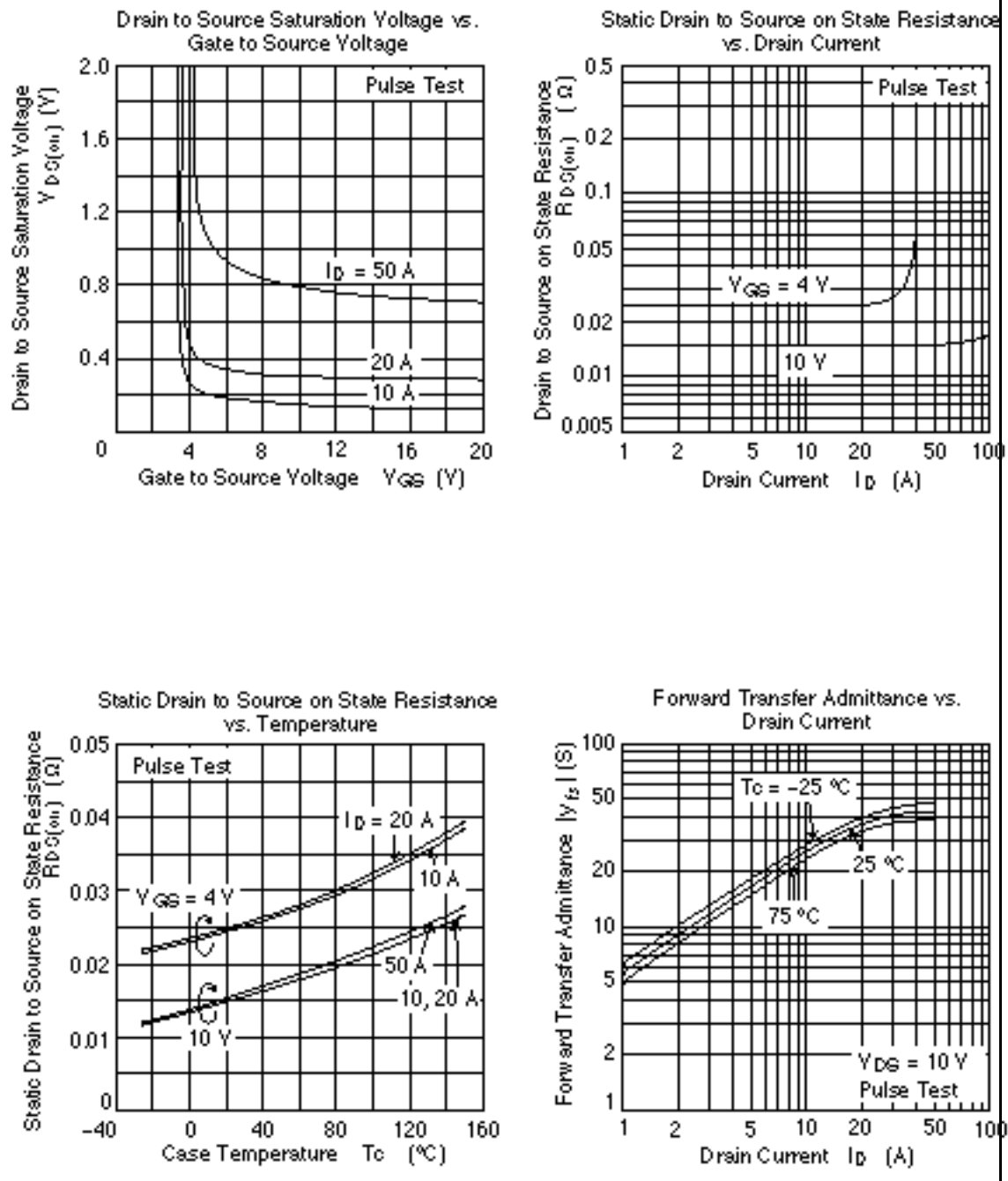
### Electrical Characteristics (Ta = 25°C)

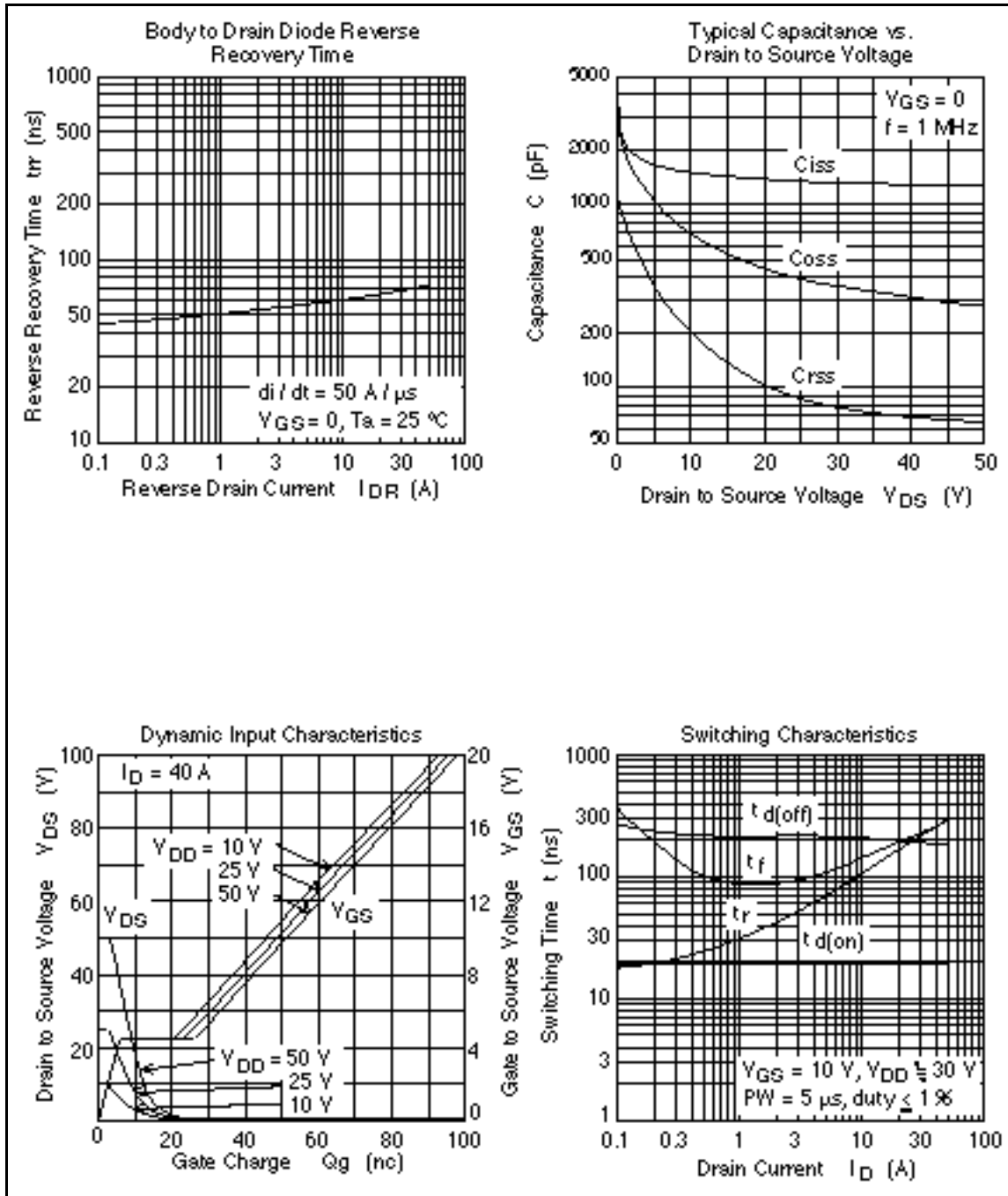
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	60	—	—	V	$I_D = 10mA, V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	$\pm 20$	—	—	V	$I_G = \pm 100\mu A, V_{DS} = 0$
Gate to source leak current	$I_{GSS}$	—	—	$\pm 10$	$\mu A$	$V_{GS} = \pm 16V, V_{DS} = 0$
Zero gate voltage drain current	$I_{DSS}$	—	—	10	$\mu A$	$V_{DS} = 60V, V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	1.5	—	2.5	V	$I_D = 1mA, V_{DS} = 10V$
Static drain to source on state resistance	$R_{DS(on)}$	—	15	20	m	$I_D = 20A, V_{GS} = 10V^{*1}$
	$R_{DS(on)}$	—	25	40	m	$I_D = 20A, V_{GS} = 4V^{*1}$
Forward transfer admittance	$ y_{fs} $	20	35	—	S	$I_D = 20A, V_{DS} = 10V^{*1}$
Input capacitance	$C_{iss}$	—	1500	—	pF	$V_{DS} = 10V$
Output capacitance	$C_{oss}$	—	720	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	$C_{rss}$	—	200	—	pF	f = 1MHz
Turn-on delay time	$t_{d(on)}$	—	20	—	ns	$I_D = 20A, V_{GS} = 10V$
Rise time	$t_r$	—	180	—	ns	$R_L = 1.5$
Turn-off delay time	$t_{d(off)}$	—	200	—	ns	
Fall time	$t_f$	—	200	—	ns	
Body to drain diode forward voltage	VDF	—	0.95	—	V	$I_F = 40A, V_{GS} = 0$ $di_F/dt = 50A/\mu s$
Body to drain diode reverse recovery time	$t_{rr}$	—	70	—	V	$I_F = 40A, V_{GS} = 0$ $di_r/dt = 50A/\mu s$

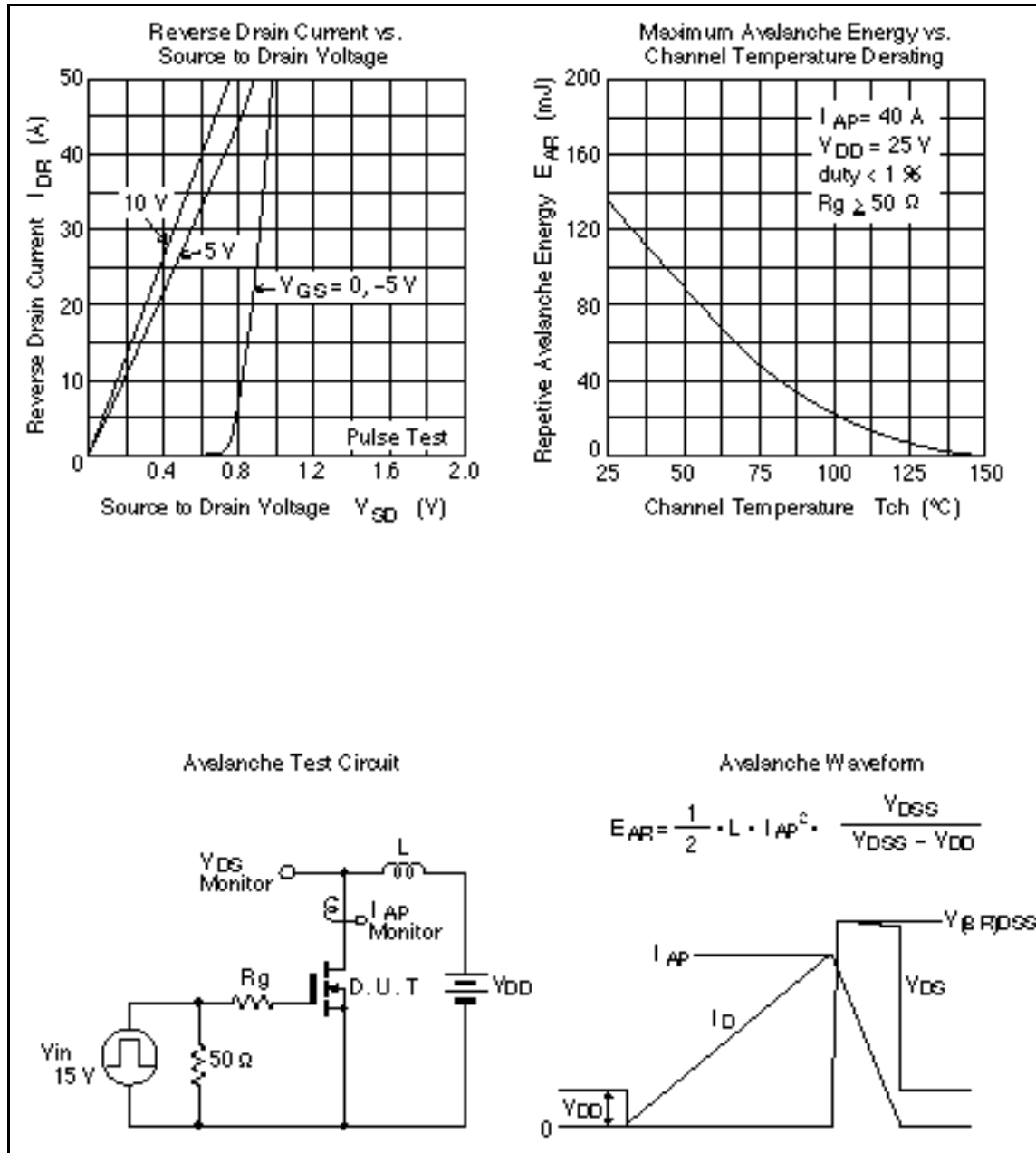
Note: 1. Pulse test

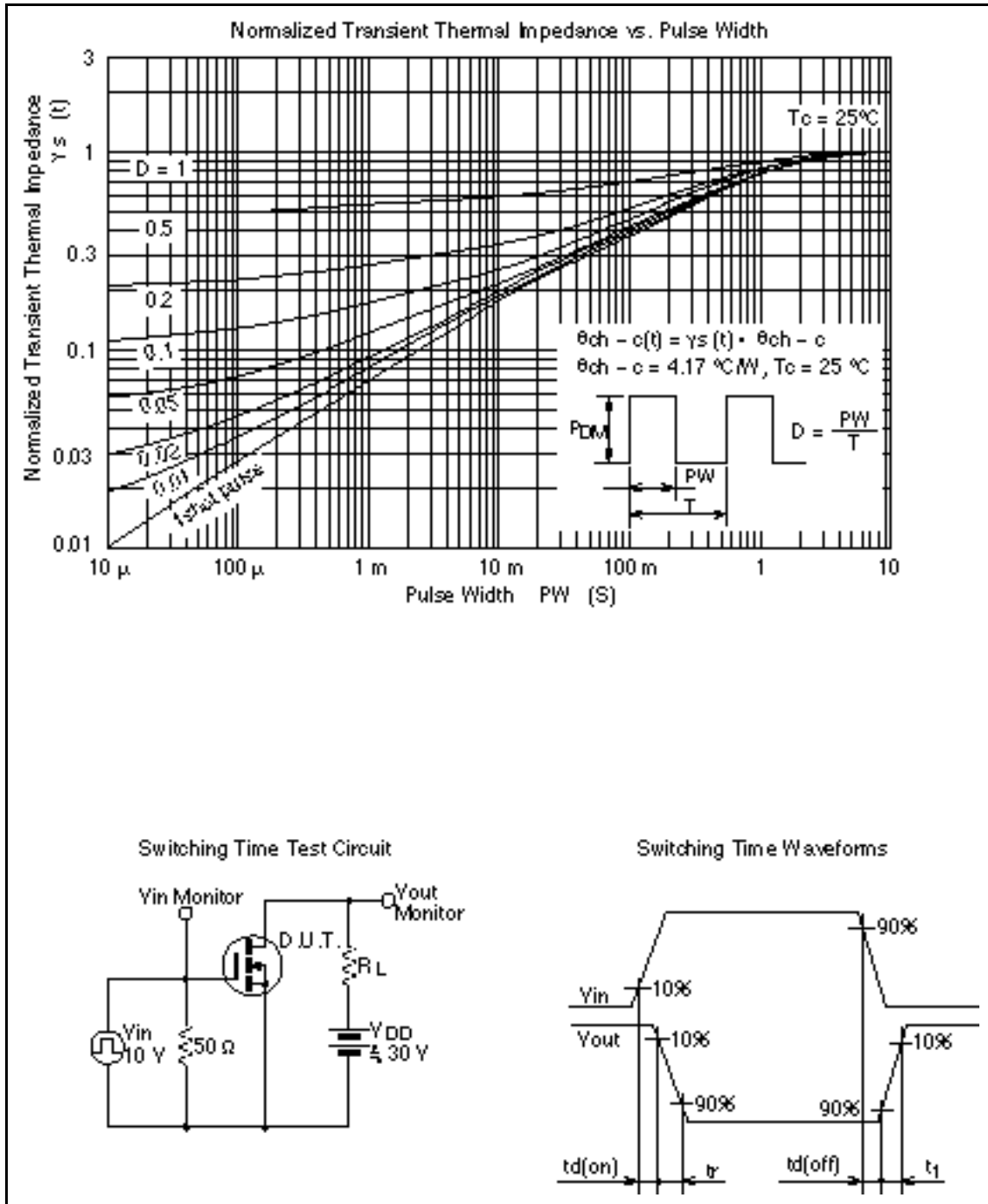
Main Characteristics











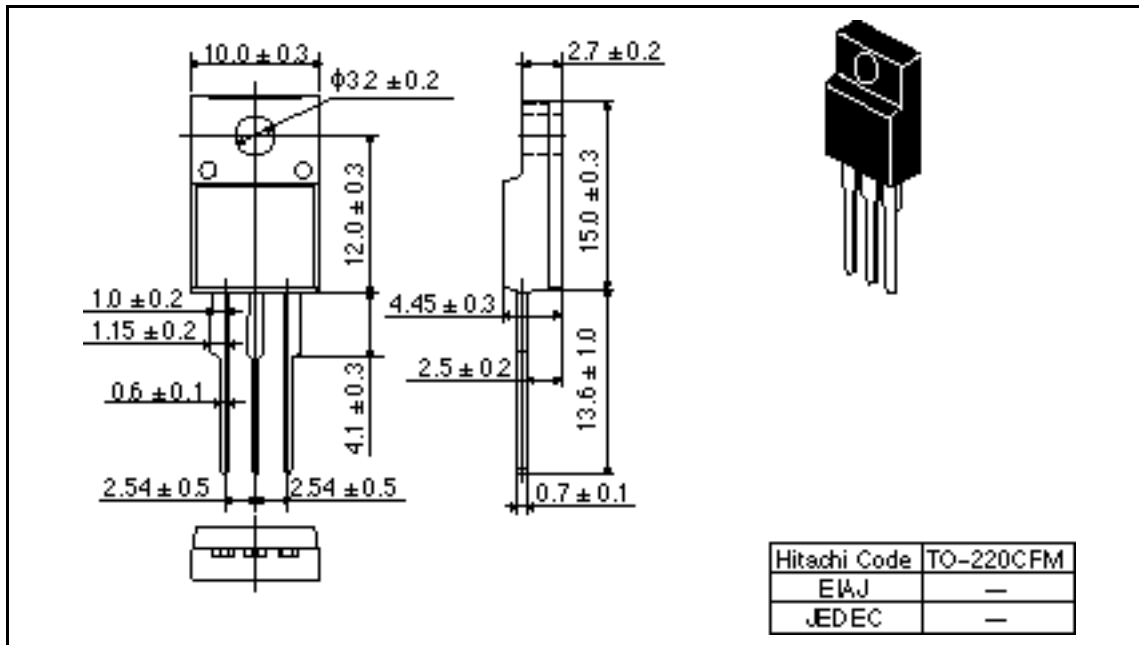
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## 2SK2738

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### Package Dimensions

Unit: mm



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