
2SK2738

Silicon N Channel MOS FET
High Speed Power Switching

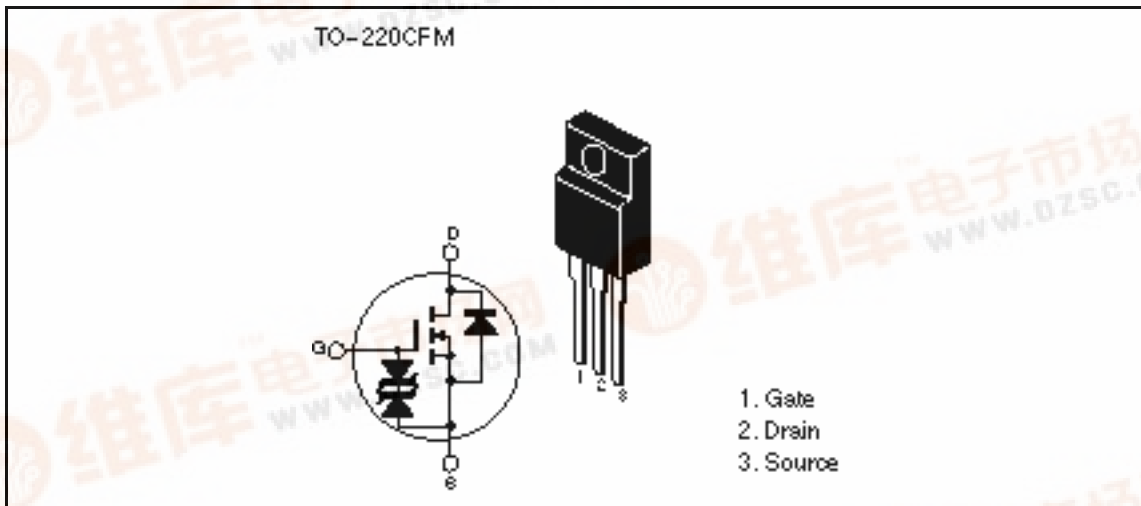
HITACHI

ADE-208-483
1st. Edition

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}	±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	Pch^{*2}	30	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

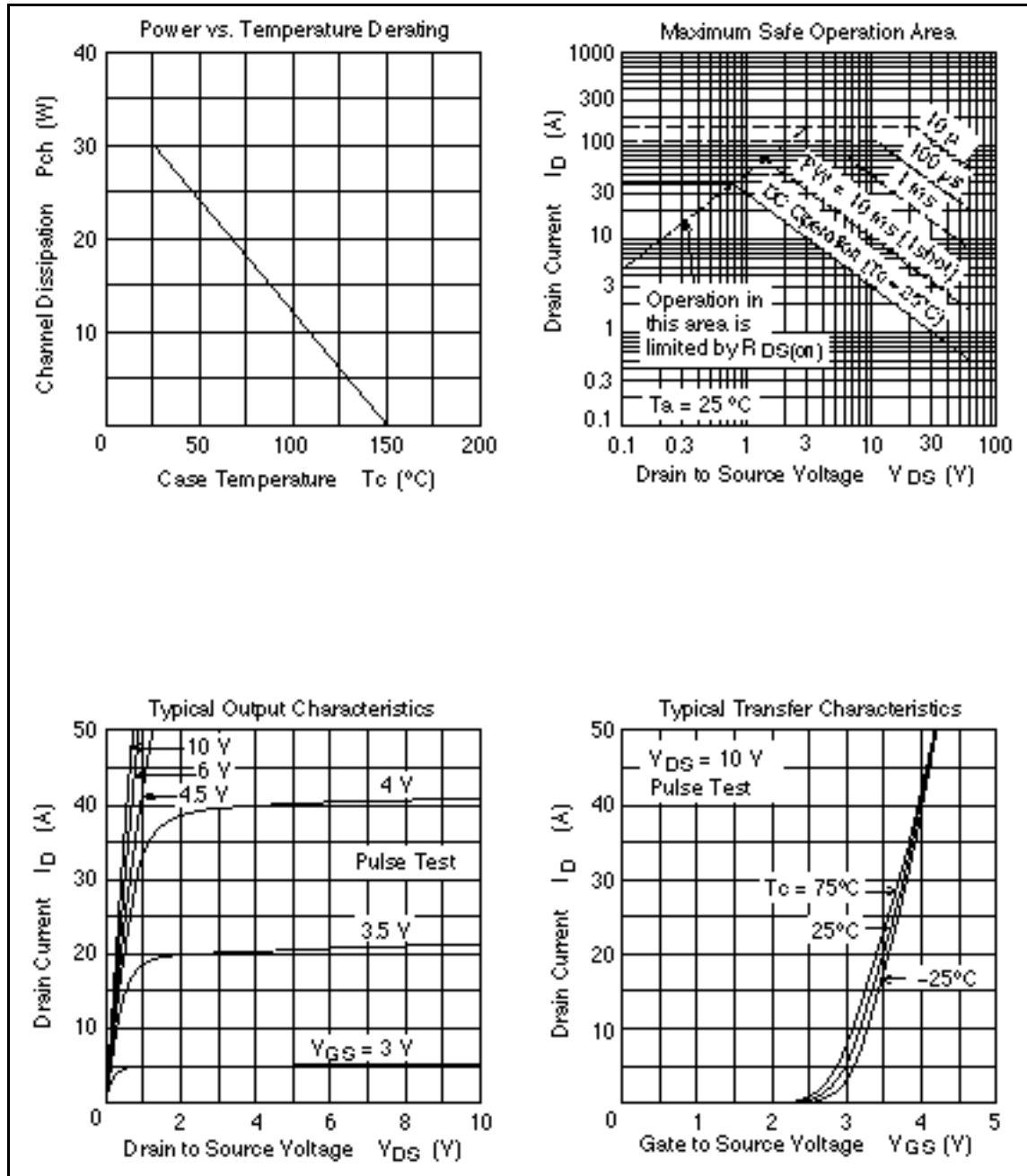
Notes: 1. PW 10μs, duty cycle 1 %
 2. Value at Tc = 25°C
 3. Value at Tch = 25°C, Rg 50

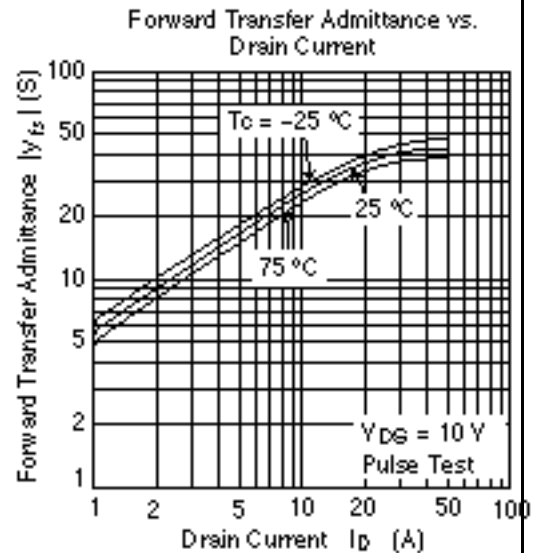
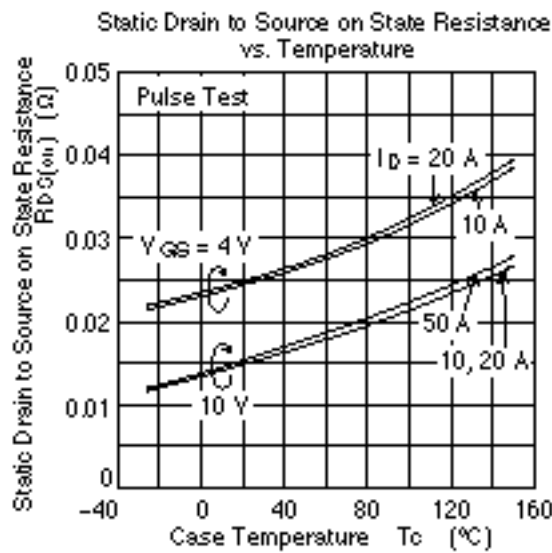
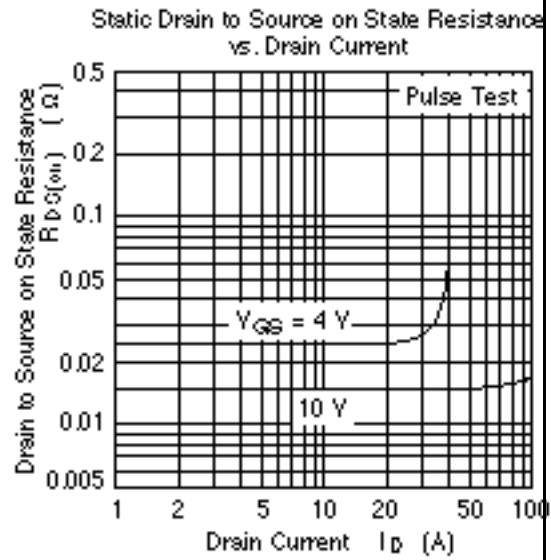
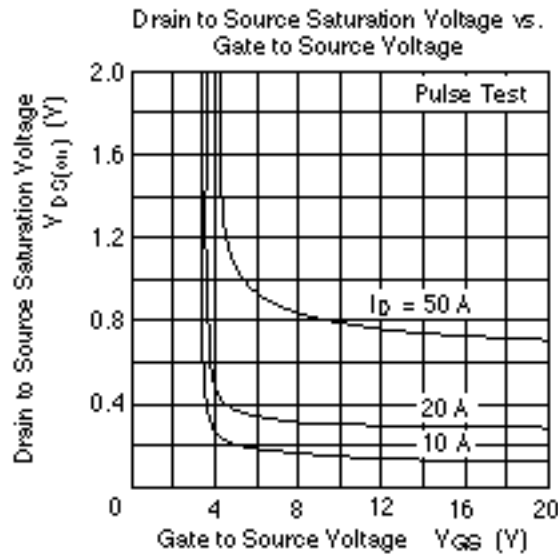
Electrical Characteristics (Ta = 25°C)

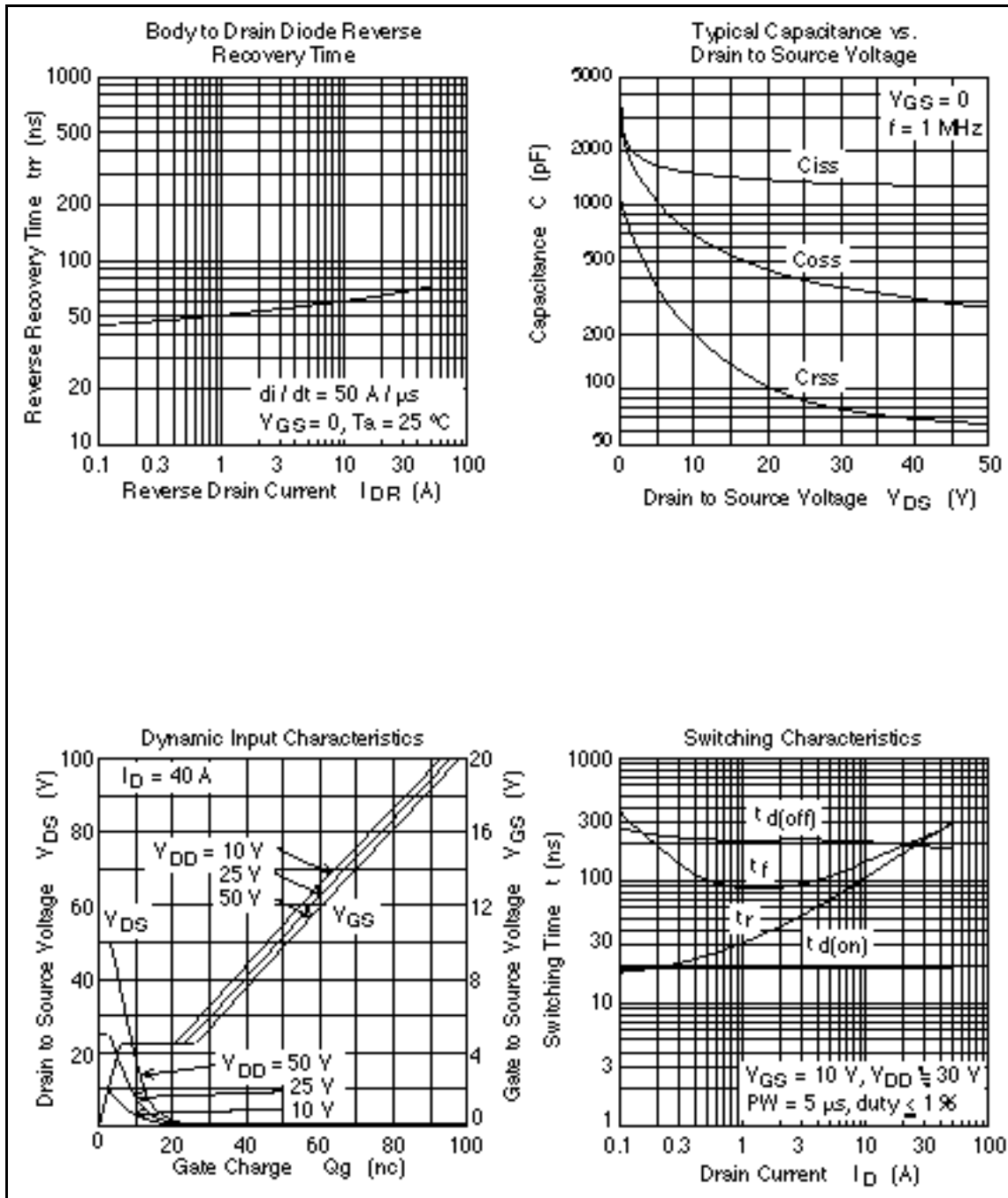
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	60	—	—	V	$I_D = 10mA, V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	±20	—	—	V	$I_G = ±100μA, V_{DS} = 0$
Gate to source leak current	I_{GSS}	—	—	±10	μA	$V_{GS} = ±16V, V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	10	μA	$V_{DS} = 60V, V_{GS} = 0$
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	Ciss	—	1500	—	pF	$V_{DS} = 10V$
Output capacitance	Coss	—	720	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	Crss	—	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	$I_F = 40A, V_{GS} = 0$ diF/ dt = 50A/μs
Body to drain diode reverse recovery time	t_{rr}	—	70	—	V	$I_F = 40A, V_{GS} = 0$ diF/ dt = 50A/μs

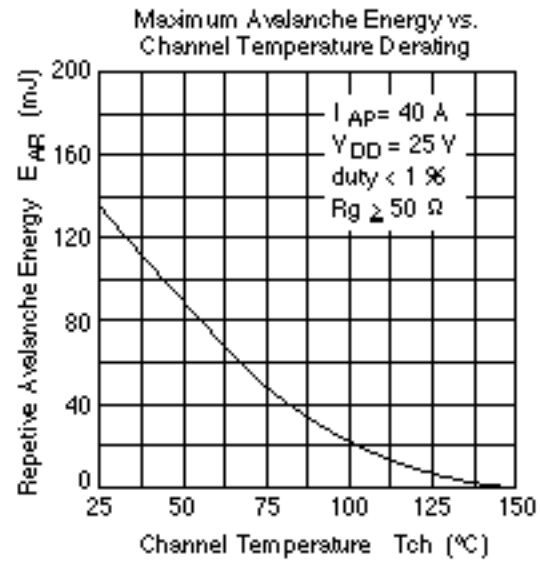
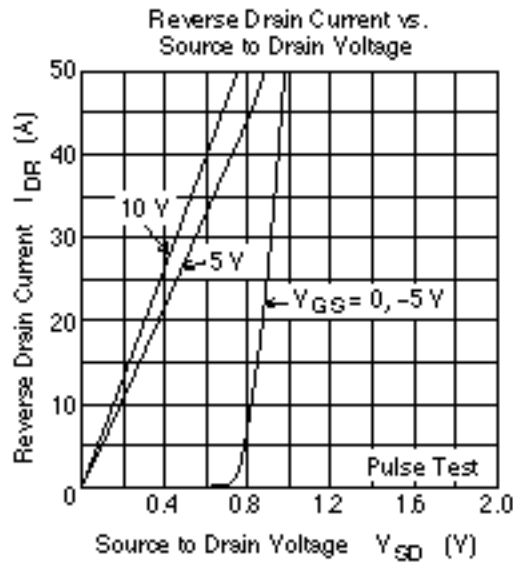
Note: 1. Pulse test

Main Characteristics

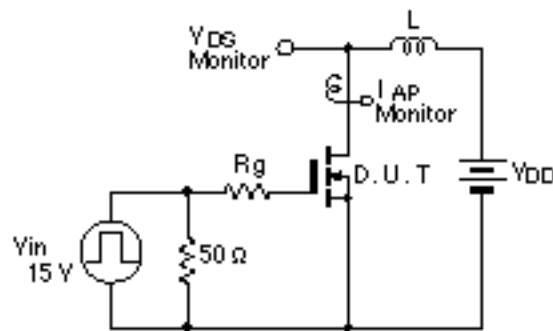




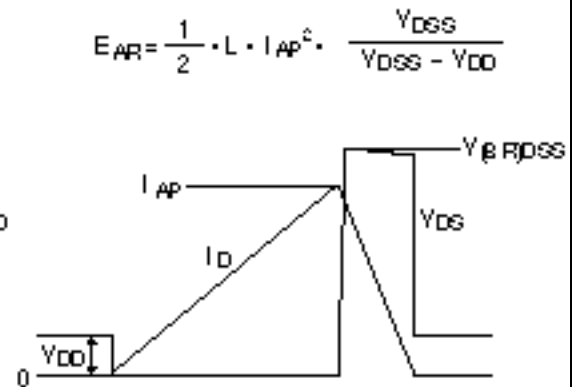


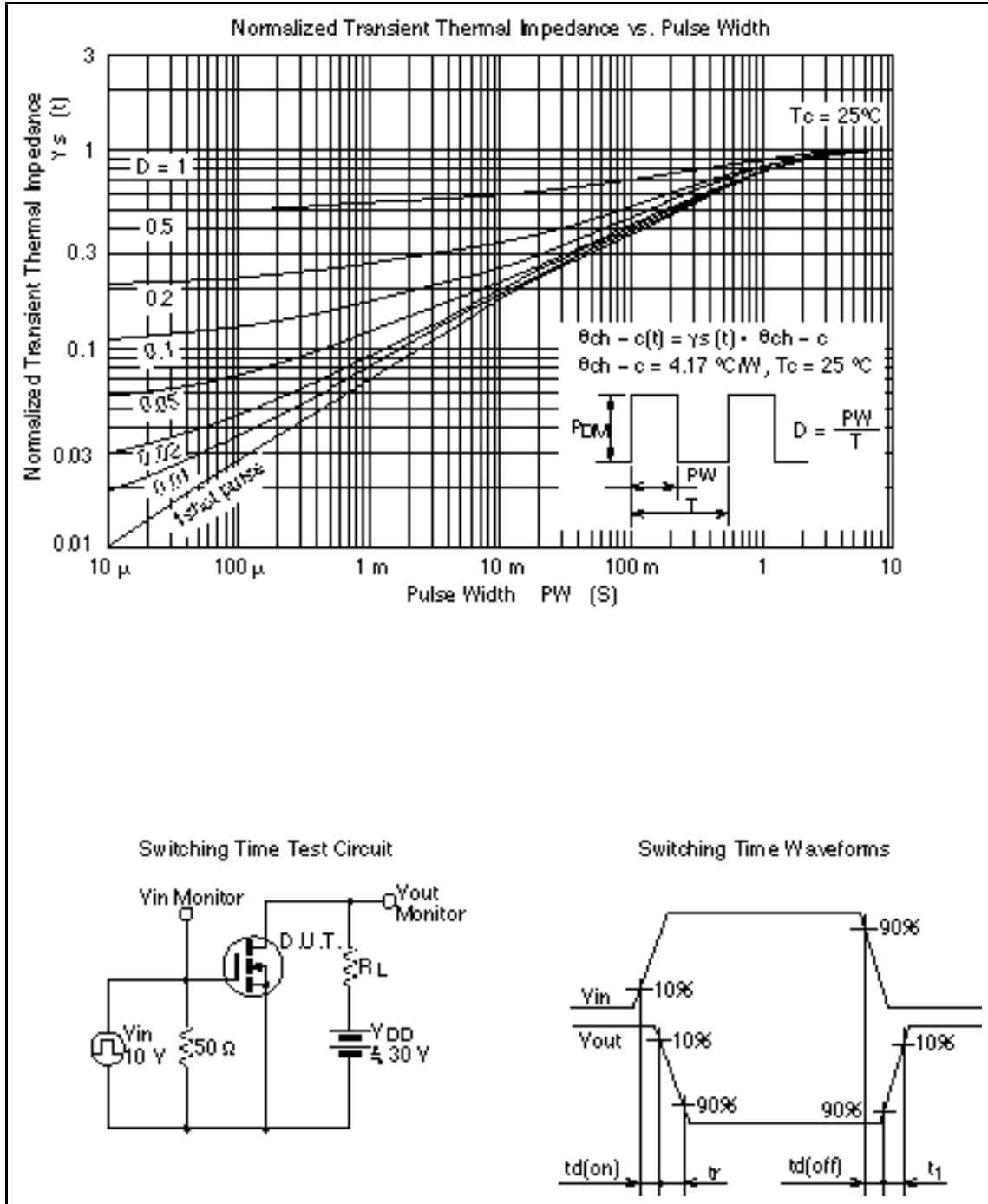


Avalanche Test Circuit



Avalanche Waveform

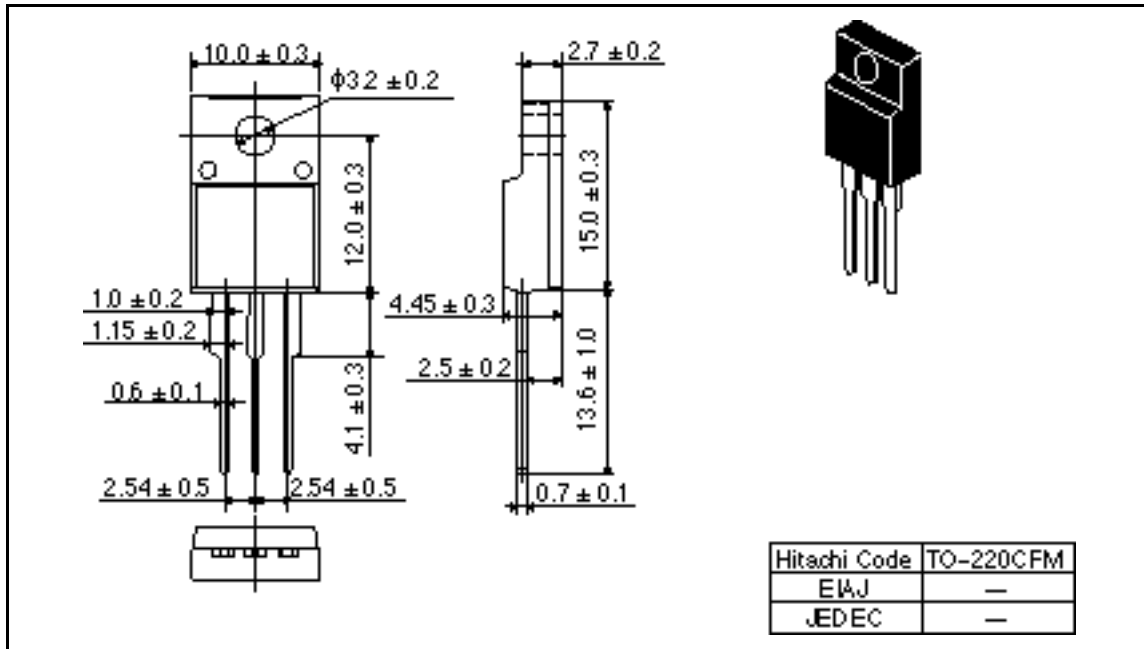




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Package Dimensions

Unit: mm



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HITACHI

Hitachi, Ltd.

Semiconductor & IC Div.
Nippon Bldg., 2-6-2, Ohite-machi, Chiyoda-ku, Tokyo 100, Japan
Tel Tokyo (03) 3270-2111
Fax (03) 3270-5109

For further information write to:

Hitachi America, Ltd.
Semiconductor & IC Div.
2000 Sierra Point Parkway
Brisbane, CA. 94005-4835
U.S.A.
Tel 415-589-8300
Fax 415-589-4207

Hitachi Europe GmbH
Electronic Components Group
Continental Europe
Dornacher StraÙe 3
D-85622 Feldkirchen
München
Tel 089-9 94 80 0
Fax 089-9 29 30 00

Hitachi Europe Ltd.
Electronic Components Div.
Northern Europe Headquarters
Whitbrook Park
Lower Cookham Road
M Maidenhead
Berkshire SL6 8YA
United Kingdom
Tel 0628-885000
Fax 0628-778322

Hitachi Asia Pte. Ltd.
45 Collyer Quay #20-00
Hitachi Tower
Singapore 0404
Tel 535-2100
Fax 535-1533

Hitachi Asia (Hong Kong) Ltd.
Unit 705, North Tower,
World Finance Centre
Harbour City, Canton Road
Tsim Sha Tsui, Kowloon
Hong Kong
Tel 27359218
Fax 27308074