2SK2736

Silicon N Channel DV–L MOS FET
High Speed Power Switching

HITACHI

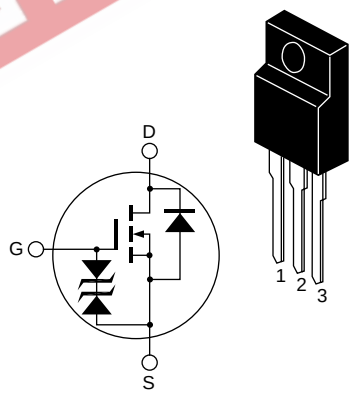
ADE-208-544
1st. Edition

Features

- Low on-resistance
  $R_{DS(on)}$ = 20 mΩ typ. (V_{GS} = 10V, I_D = 15 A)
- 4V gate drive devices.
- High speed switching

Outline

TO–220CFM



1. Gate
2. Drain
3. Source

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Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	30	V
Gate to source voltage	V_{GSS}	±20	V
Drain current	I_D	30	A
Drain peak current	$I_{D(pulse)}$*[1]	120	A
Body to drain diode reverse drain current	I_{DR}	30	A
Channel dissipation	Pch*[2]	25	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

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Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	30	—	—	V	I_D = 10mA, V_{GS} = 0
Gate to source breakdown voltage	$V_{(BR)GSS}$	±20	—	—	V	I_G = ±100µA, V_{DS} = 0
Zero gate voltege drain current	I_{DSS}	—	—	10	µA	V_{DS} = 30 V, V_{GS} = 0
Gate to source leak current	I_{GSS}	—	—	±10	µA	V_{GS} = ±16V, V_{DS} = 0
Gate to source cutoff voltage	$V_{GS(off)}$	1.0	—	2.0	V	I_D = 1mA, V_{DS} = 10V
Static drain to source on state resistance	$R_{DS(on)}$	—	20	28	mΩ	I_D = 15A, V_{GS} = 10V*[1]
	$R_{DS(on)}$	—	35	50	mΩ	I_D = 15A, V_{GS} = 4V*[1]
Forward transfer admittance	$\|y_{fs}\|$	12	18	—	S	I_D = 15A, V_{DS} = 10V*[1]
Input capacitance	Ciss	—	750	—	pF	V_{DS} = 10V
Output capacitance	Coss	—	520	—	pF	V_{GS} = 0
Reverse transfer capacitance	Crss	—	210	—	pF	f = 1MHz
Turn-on delay time	$t_{d(on)}$	—	16	—	ns	V_{GS} = 10V, I_D = 15A
Rise time	t_r	—	260	—	ns	R_L = 0.67Ω
Turn-off delay time	$t_{d(off)}$	—	85	—	ns	
Fall time	t_f	—	90	—	ns	
Body to drain diode forward voltage	V_{DF}	—	1.0	—	V	I_F = 30A, V_{GS} = 0
Body to drain diode reverse recovery time	t_{rr}	—	45	—	ns	I_F = 30A, V_{GS} = 0 diF/ dt = 50A/µs

Note: 1. Pulse test

See characteristics curves of 2SK2684

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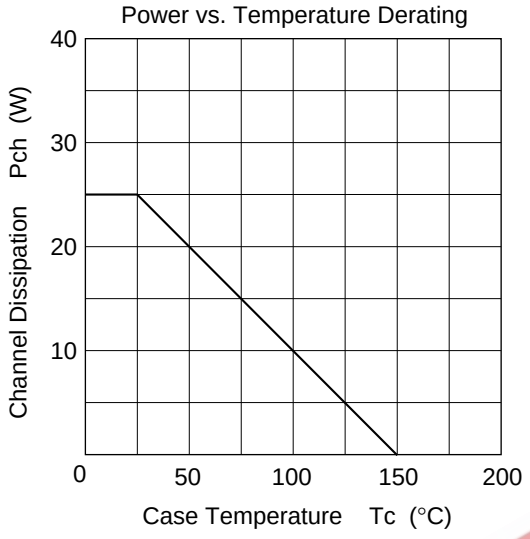
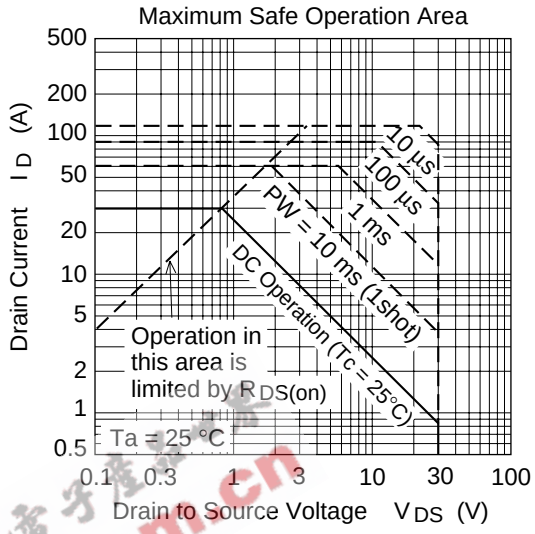
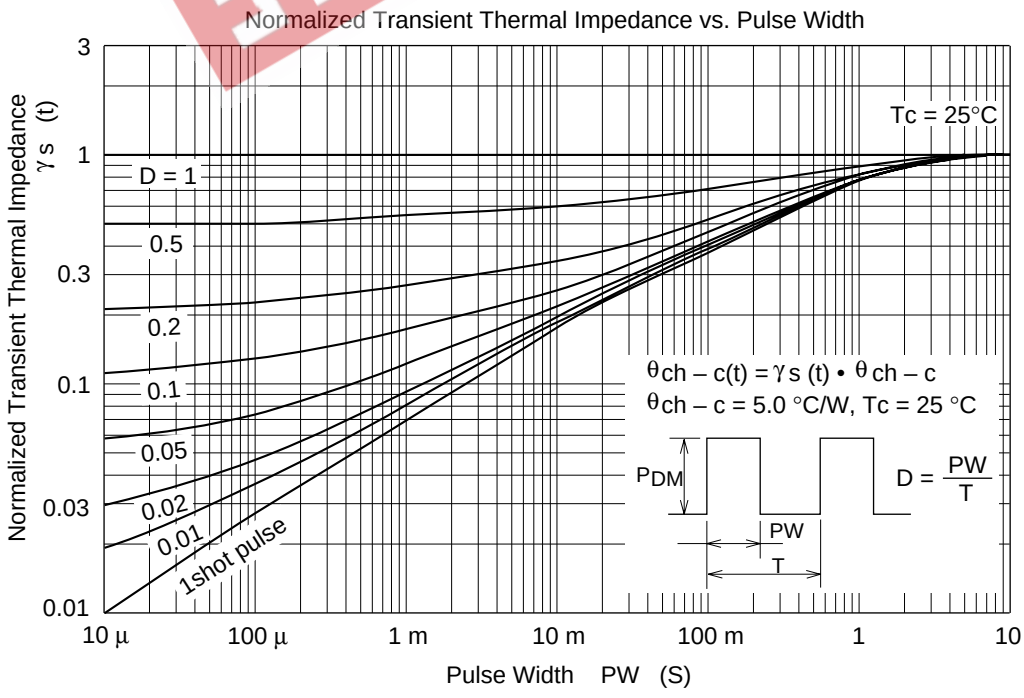
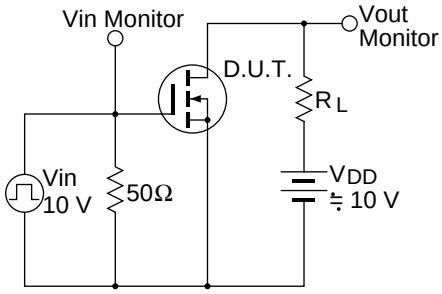
Main Characteristics



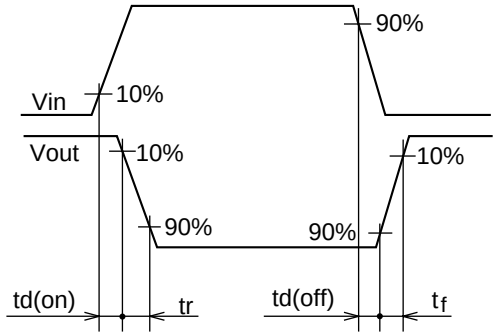




Switching Time Test Circuit



Waveform



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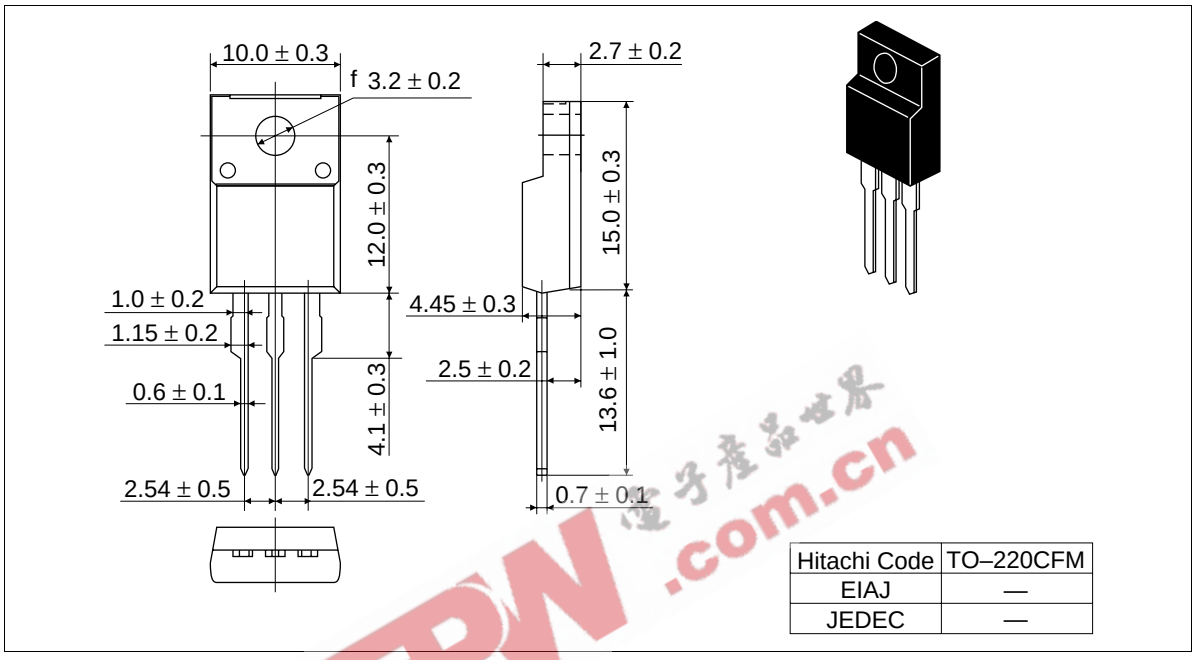
Package Dimensions

Unit: mm



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