

2SK2736

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

HITACHI

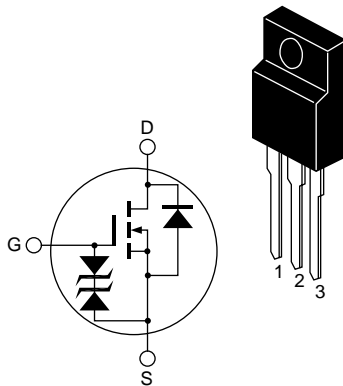
ADE-208-544
1st. Edition

Features

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

Outline

TO-220CFM



1. Gate
2. Drain
3. Source

Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

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	P_{ch}^{*2}	25	W
Channel temperature	T_{ch}	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

Notes: 1. $PW \leq 10\mu\text{s}$, duty cycle $\leq 1\%$
2. Value at $T_c = 25^\circ\text{C}$

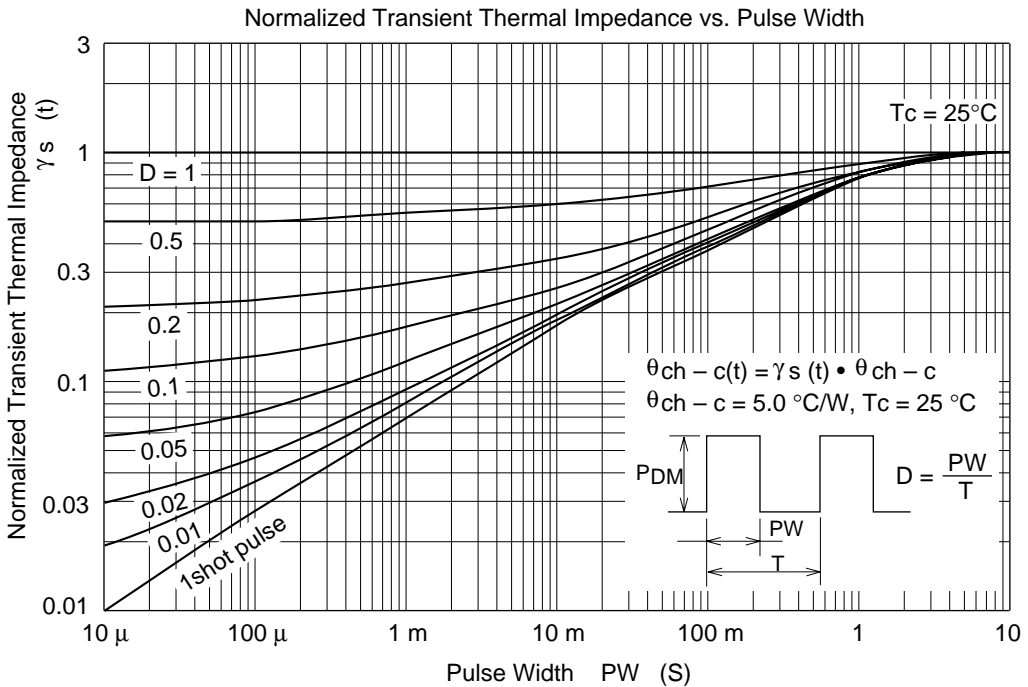
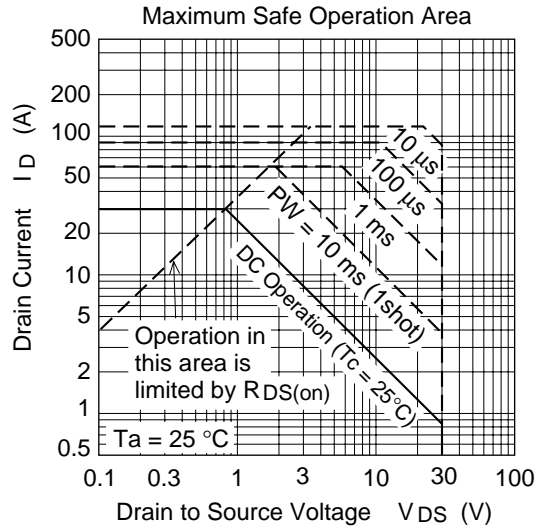
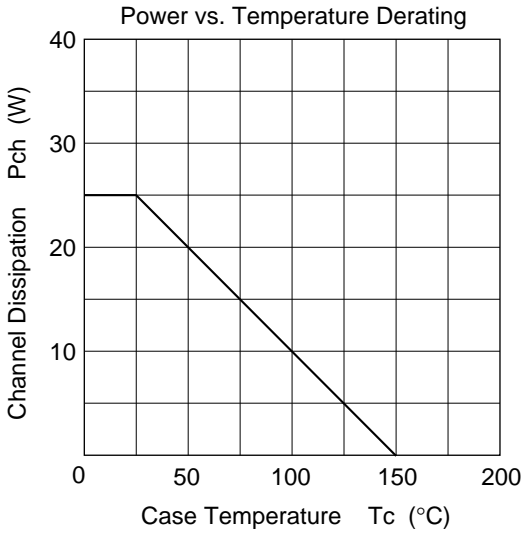
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	30	—	—	V	$I_D = 10\text{mA}$, $V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	±20	—	—	V	$I_G = \pm 100\mu\text{A}$, $V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	10	μA	$V_{DS} = 30\text{V}$, $V_{GS} = 0$
Gate to source leak current	I_{GSS}	—	—	±10	μA	$V_{GS} = \pm 16\text{V}$, $V_{DS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	1.0	—	2.0	V	$I_D = 1\text{mA}$, $V_{DS} = 10\text{V}$
Static drain to source on state resistance	$R_{DS(on)}$	—	20	28	mΩ	$I_D = 15\text{A}$, $V_{GS} = 10\text{V}^{*1}$
	$R_{DS(on)}$	—	35	50	mΩ	$I_D = 15\text{A}$, $V_{GS} = 4\text{V}^{*1}$
Forward transfer admittance	$ y_{fs} $	12	18	—	S	$I_D = 15\text{A}$, $V_{DS} = 10\text{V}^{*1}$
Input capacitance	C_{iss}	—	750	—	pF	$V_{DS} = 10\text{V}$
Output capacitance	C_{oss}	—	520	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	C_{rss}	—	210	—	pF	$f = 1\text{MHz}$
Turn-on delay time	$t_{d(on)}$	—	16	—	ns	$V_{GS} = 10\text{V}$, $I_D = 15\text{A}$
Rise time	t_r	—	260	—	ns	$R_L = 0.67\Omega$
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	$I_F = 30\text{A}$, $V_{GS} = 0$
Body to drain diode reverse recovery time	t_{rr}	—	45	—	ns	$I_F = 30\text{A}$, $V_{GS} = 0$ $di_F/dt = 50\text{A}/\mu\text{s}$

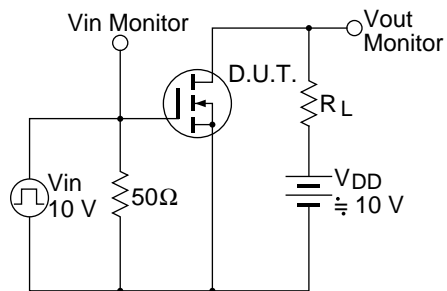
Note: 1. Pulse test

See characteristics curves of 2SK2684

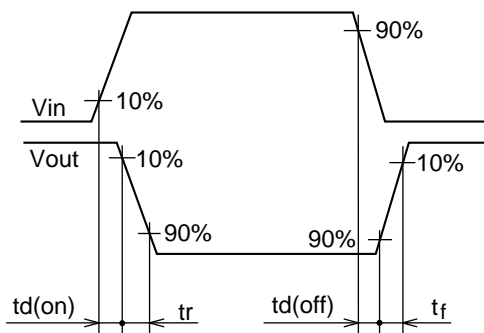
Main Characteristics



Switching Time Test Circuit

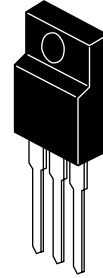
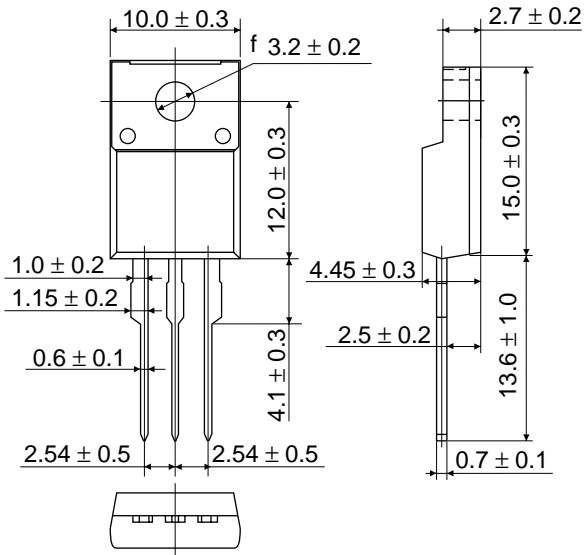


Waveform



Package Dimensions

Unit: mm



Hitachi Code	TO-220CFM
EIAJ	—
JEDEC	—

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