2SK2885(L), 2SK2885(S)

Silicon N Channel MOS FET
High Speed Power Switching

HITACHI

ADE-208-545 A
2nd. Edition

Features

- Low on-resistance
  $R_{DS(on)}$ = 10mΩ typ.
- 4V gate drive devices.
- High speed switching

Outline

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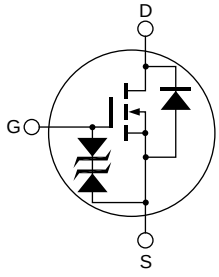

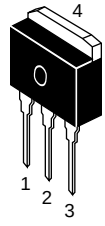

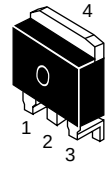

1. Gate
2. Drain
3. Source
4. Drain

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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	45	A
Drain peak current	$I_{D(pulse)}$*[1]	180	A
Body to drain diode reverse drain current	I_{DR}	45	A
Channel dissipation	Pch*[2]	75	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

Electrical Characteristics (Ta = 25°C)

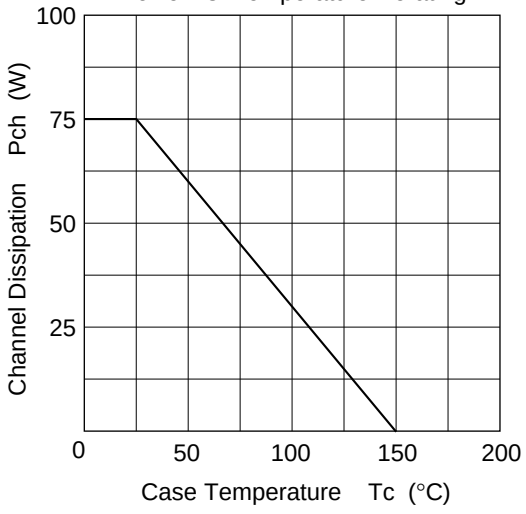
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	30	—	—	V	I_D = 10mA, V_{GS} = 0
Gate to source breakdown voltage	$V_{(BR)GSS}$	±20	—	—	V	I_G = ±100µA, V_{DS} = 0
Zero gate voltege drain current	I_{DSS}	—	—	10	µA	V_{DS} = 30 V, V_{GS} = 0
Gate to source leak 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	$R_{DS(on)}$	—	10	14	mΩ	I_D = 20A, V_{GS} = 10V*[1]
	$R_{DS(on)}$	—	15	25	mΩ	I_D = 20A, V_{GS} = 4V*[1]
Forward transfer admittance	$\|y_{fs}\|$	20	30	—	S	I_D = 20A, V_{DS} = 10V*[1]
Input capacitance	Ciss	—	1570	—	pF	V_{DS} = 10V
Output capacitance	Coss	—	1100	—	pF	V_{GS} = 0
Reverse transfer capacitance	Crss	—	410	—	pF	f = 1MHz
Turn-on delay time	$t_{d(on)}$	—	32	—	ns	V_{GS} = 10V, I_D = 20A
Rise time	t_r	—	300	—	ns	R_L = 0.5Ω
Turn-off delay time	$t_{d(off)}$	—	180	—	ns	
Fall time	t_f	—	200	—	ns	
Body to drain diode forward voltage	V_{DF}	—	1.0	—	V	I_F = 45A, V_{GS} = 0
Body to drain diode reverse recovery time	t_{rr}	—	75	—	ns	I_F = 45A, V_{GS} = 0 diF/ dt = 50A/µs

Note: 1. Pulse test

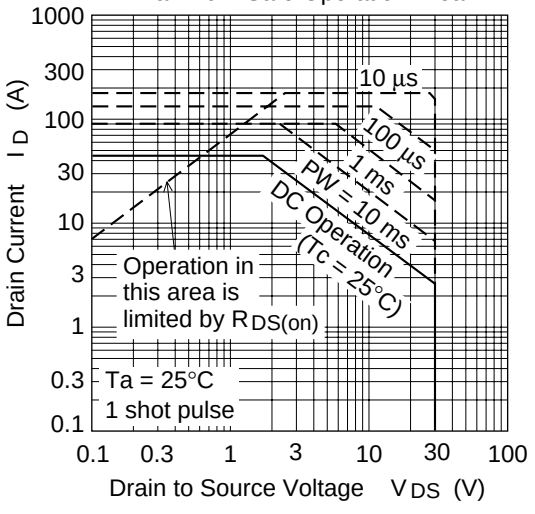
See characteristics curves of 2SK2737

Main Characteristics

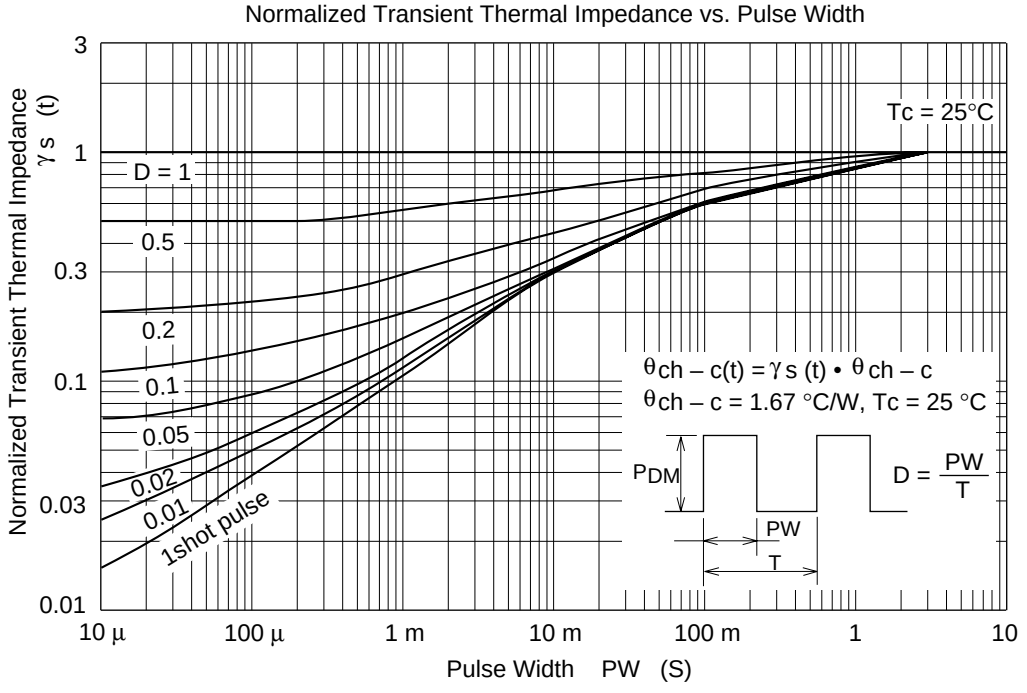
Power vs. Temperature Derating



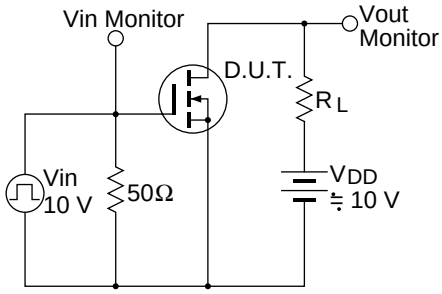
Maximum Safe Operation Area



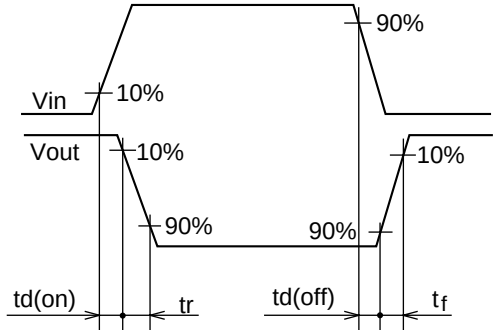
Normalized Transient Thermal Impedance vs. Pulse Width



Switching Time Test Circuit

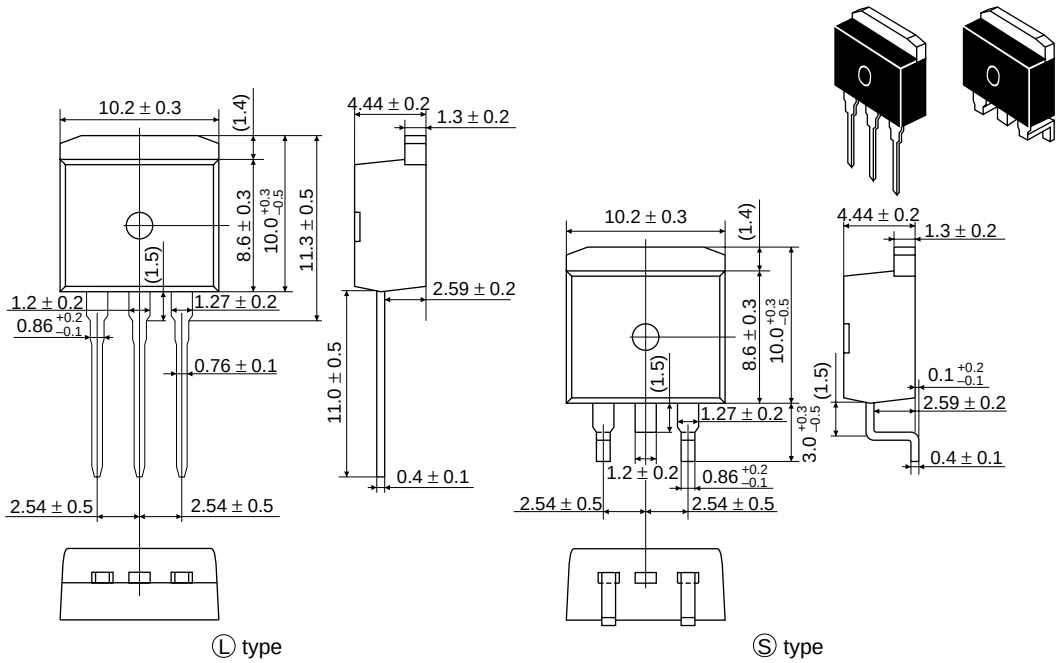


Switching Time Waveforms



Package Dimensions

Unit: mm



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