

2SK2735(L), 2SK2735(S)

Silicon N Channel MOS FET
High Speed Power Switching

HITACHI

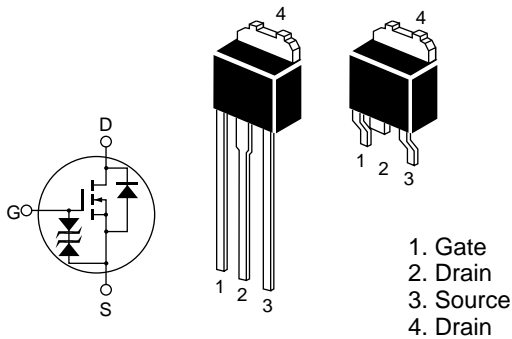
ADE-208-543 (Z)
1st. Edition
Sep. 1997

Features

- Low on-resistance
 $R_{DS} = 20 \text{ m}\Omega$ typ.
- High speed switching
- 4V gate drive device can be driven from 5V source

Outline

DPAK-2



2SK2735(L), 2SK2735(S)

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	20	A
Drain peak current	$I_{D(pulse)}^{*1}$	80	A
Body to drain diode reverse drain current	I_{DR}	20	A
Channel dissipation	Pch^{*2}	20	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

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

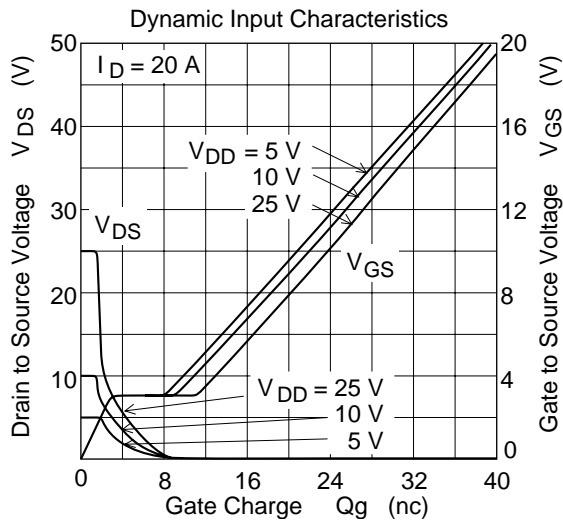
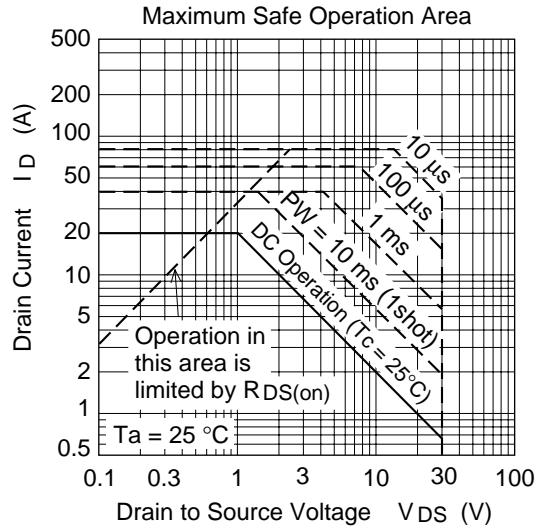
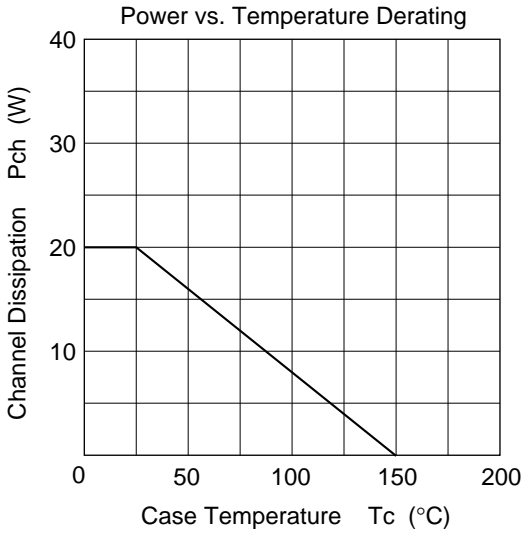
Electrical Characteristics (Ta = 25°C)

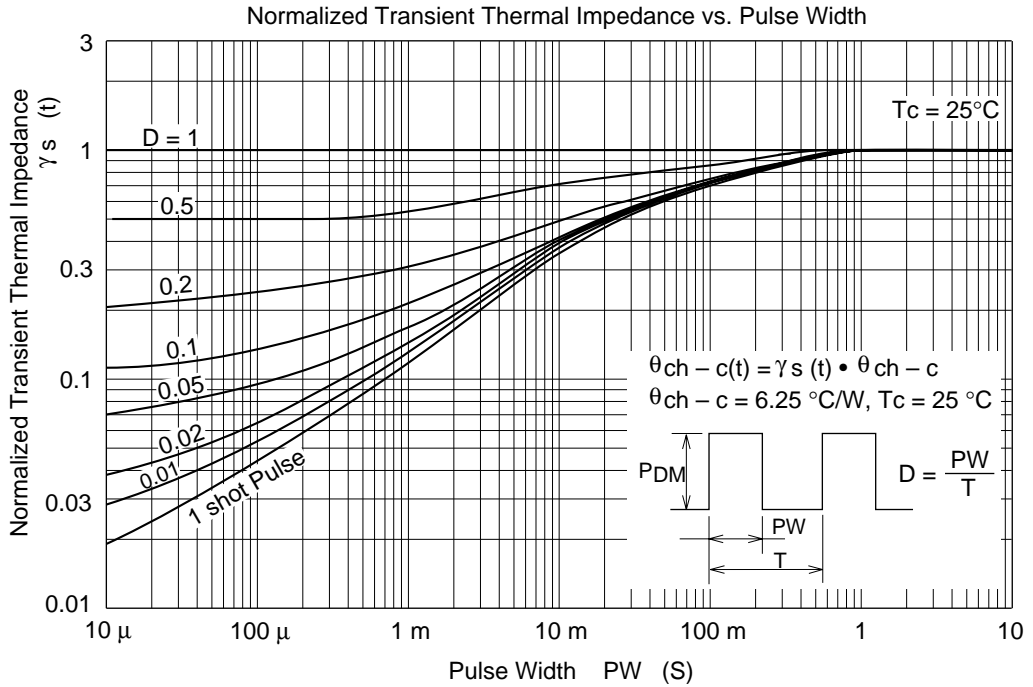
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	30	—	—	V	$I_D = 10\text{mA}, V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	±20	—	—	V	$I_G = \pm 100\mu\text{A}, V_{DS} = 0$
Gate to source leak current	I_{GSS}	—	—	±10	μA	$V_{GS} = \pm 16\text{V}, V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	10	μA	$V_{DS} = 30\text{V}, V_{GS} = 0$
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	$I_D = 10\text{A}, V_{GS} = 10\text{V}^{*1}$
	$R_{DS(on)}$	—	35	50	mΩ	$I_D = 10\text{A}, V_{GS} = 4\text{V}^{*1}$
Forward transfer admittance	$ y_{fs} $	8	16	—	S	$I_D = 10\text{A}, V_{DS} = 10\text{V}^{*1}$
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	$I_D = 10\text{A}, V_{GS} = 10\text{V}$
Rise time	t_r	—	225	—	ns	$R_L = 1\Omega$
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	$I_F = 20\text{A}, V_{GS} = 0$ $diF/dt = 50\text{A}/\mu\text{s}$
Body to drain diode reverse recovery time	t_{rr}	—	40	—	V	$I_F = 20\text{A}, V_{GS} = 0$ $diF/dt = 50\text{A}/\mu\text{s}$

Note: 1. Pulse test

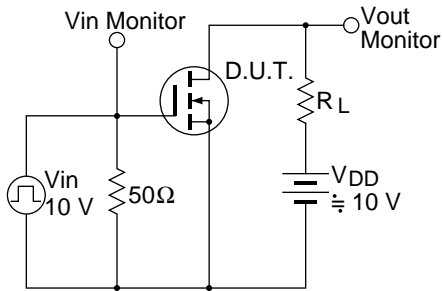
See characteristics curves of 2SK2684

Main Characteristics

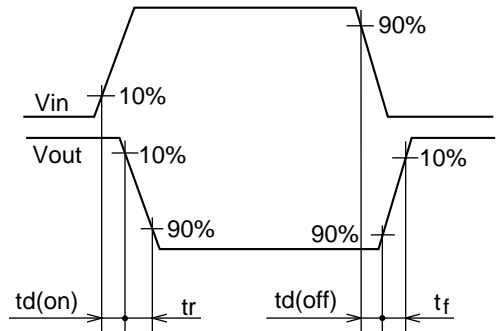




Switching Time Test Circuit



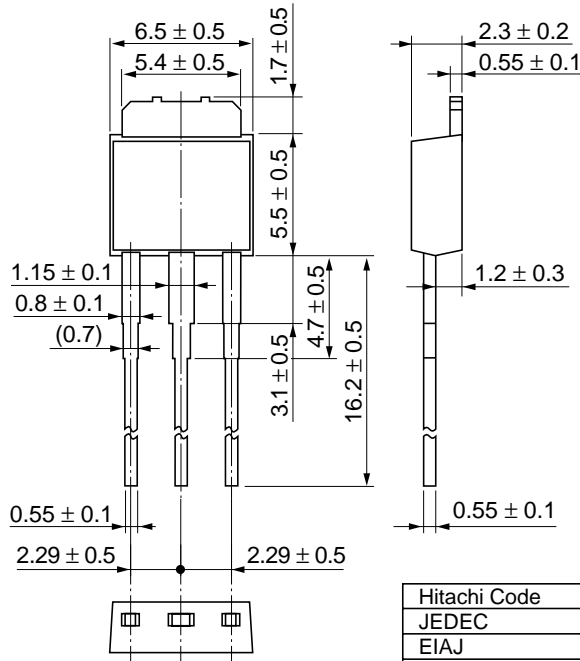
Waveform



Package Dimensions

As of January, 2001

Unit: mm

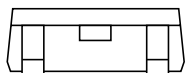
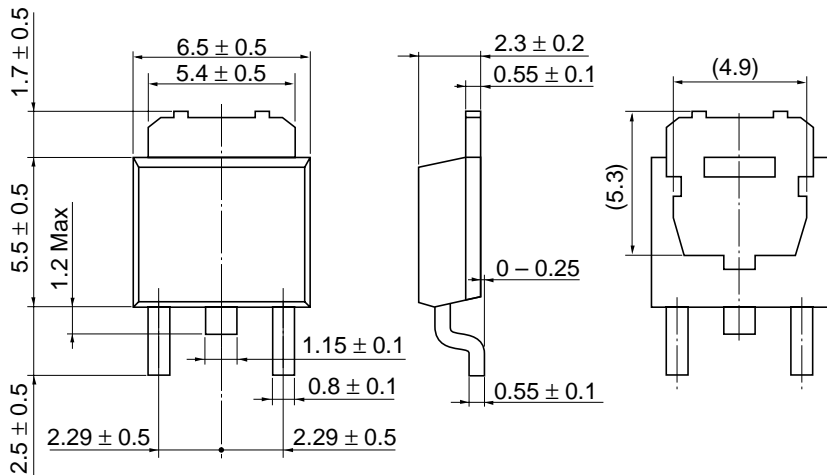


Hitachi Code	DPAK (L)-(2)
JEDEC	—
EIAJ	—
Mass (reference value)	0.42 g

2SK2735(L), 2SK2735(S)

As of January, 2001

Unit: mm

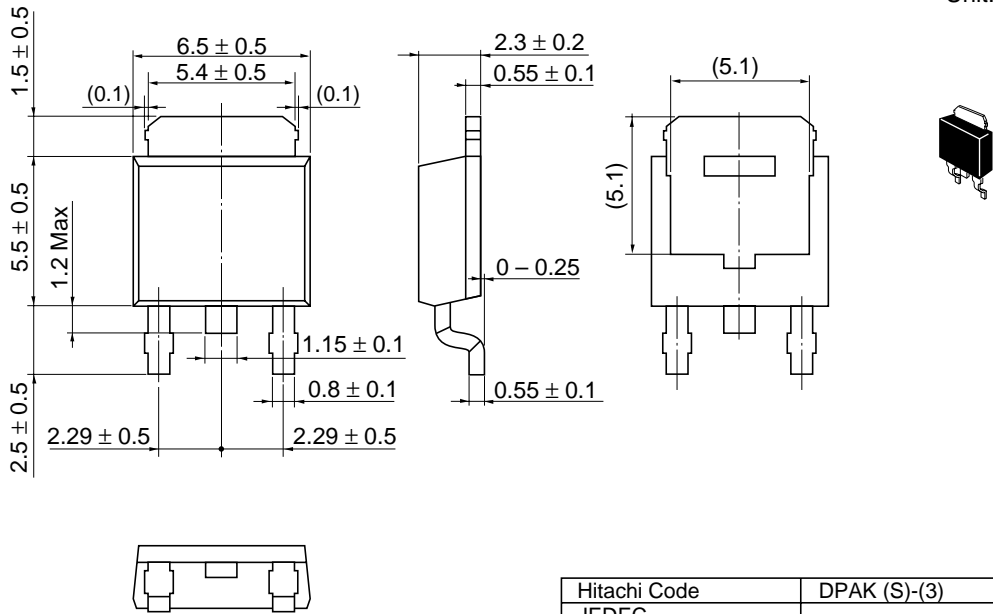


Hitachi Code	DPAK (S)-(1),(2)
JEDEC	—
EIAJ	Conforms
Mass (reference value)	0.28 g

2SK2735(L), 2SK2735(S)

As of January, 2001

Unit: mm



Hitachi Code	DPAK (S)-(3)
JEDEC	—
EIAJ	Conforms
Mass (reference value)	0.28 g

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