
2SK1764

Silicon N-Channel MOS FET

HITACHI

Application

Low frequency amplifier

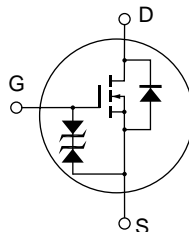
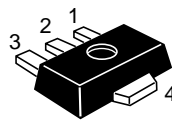
High speed switching

Features

- Low on-resistance
- High speed switching
- 4 V Gate drive device can be driven from 5 V source
- Suitable for switching regulator, DC-DC converter

Outline

UPAK



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

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

Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	60	V
Gate to source voltage	V_{GSS}	± 20	V
Drain current	I_D	2	A
Drain peak current	$I_{D(pulse)}^{*1}$	4	A
Body to drain diode reverse drain current	I_{DR}	4	A
Channel power dissipation	Pch^{*2}	1	W
Channel temperature	Tch	150	$^\circ\text{C}$
Storage temperature	$Tstg$	-55 to $+150$	$^\circ\text{C}$

- Notes
- $PW \leq 100 \mu\text{s}$, duty cycle $\leq 10\%$
 - Value on the alumina ceramic board (12.5 x 20 x 0.7 mm)
 - Marking is "KY".

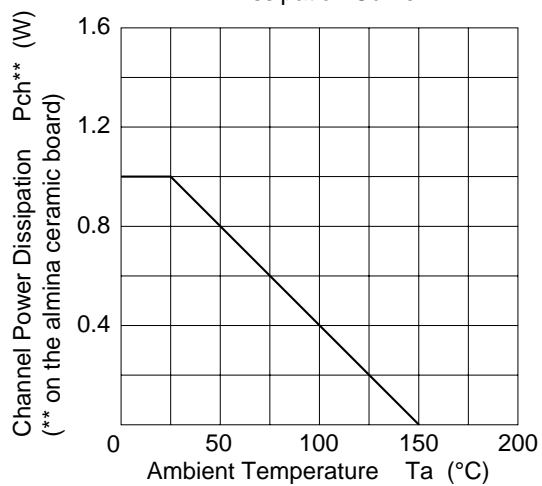
Electrical Characteristics ($T_a = 25^\circ\text{C}$)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	60	—	—	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 cutoff voltage	$V_{GS(off)}$	1	—	2	V	$V_{DS} = 10 \text{ V}$, $I_D = 1 \text{ mA}$
Drain to source cutoff current	I_{DSS}	—	—	10	μA	$V_{DS} = 50 \text{ V}$, $V_{GS} = 0$
Gate to source cutoff current	I_{GSS}	—	—	± 5	μA	$V_{GS} = \pm 15 \text{ V}$, $V_{DS} = 0$
Static drain to source on state resistance	$R_{DS(on)1}$	—	0.3	0.45	Ω	$V_{GS} = 10 \text{ V}$ $I_D = 1 \text{ A}^{*1}$
Static drain to source on state resistance	$R_{DS(on)2}$	—	0.4	0.60	Ω	$V_{GS} = 4 \text{ V}$ $I_D = 1 \text{ A}^{*1}$
Forward transfer admittance	$ y_{fs} $	0.9	1.7	—	S	$V_{DS} = 10 \text{ V}$ $I_D = 1 \text{ A}^{*1}$
Input capacitance	C_{iss}	—	140	—	pF	$V_{DS} = 10 \text{ V}$
Output capacitance	C_{oss}	—	75	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	C_{rss}	—	20	—	pF	$f = 1 \text{ MHz}$
Turn on time	t_{on}	—	18	—	ns	$V_{DS} = 10 \text{ V}$, $I_D = 1 \text{ A}^{*1}$
Turn off time	t_{off}	—	80	—	ns	$R_L = 30 \Omega$

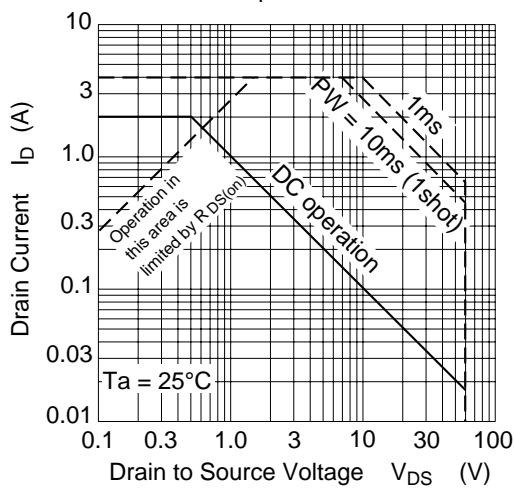
Note 1. Pulse Test

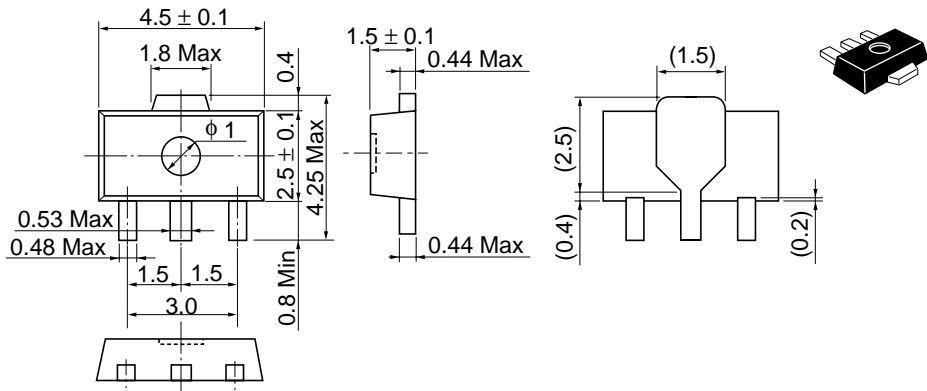
See characteristics curves of 2SK975

Maximum Channel Power
Dissipation Curve



Safe Operation Area





Hitachi Code	UPAK
JEDEC	—
EIAJ	Conforms
Weight (reference value)	0.050 g

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