

# 2SK3215

Silicon N Channel MOS FET  
High Speed Power Switching

## HITACHI

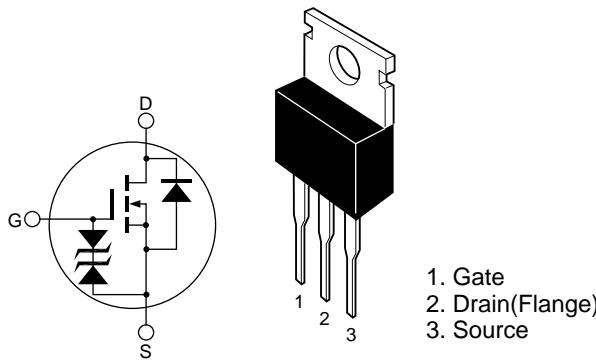
ADE-208-764(Z)  
Target Specification  
1st. Edition  
December 1998

### Features

- Low on-resistance  
 $R_{DS} = 350\text{m}\Omega$  typ.
- High speed switching
- 4V gate drive device can be driven from 5V source

### Outline

TO-220AB



## Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V <sub>DSS</sub>	200	V
Gate to source voltage	V <sub>GSS</sub>	±20	V
Drain current	I <sub>D</sub>	8	A
Drain peak current	I <sub>D(pulse)</sub> <sup>Note1</sup>	32	A
Body-drain diode reverse drain current	I <sub>DR</sub>	8	A
Avalanche current	I <sub>AP</sub> <sup>Note3</sup>	8	A
Avalanche energy	E <sub>AR</sub> <sup>Note3</sup>	4.2	mJ
Channel dissipation	Pch <sup>Note2</sup>	40	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	−55 to +150	°C

Note: 1. PW ≤ 10μs, duty cycle ≤ 1 %

2. Value at Tc = 25°C

3. Value at Tch = 25°C, Rg ≥ 50Ω

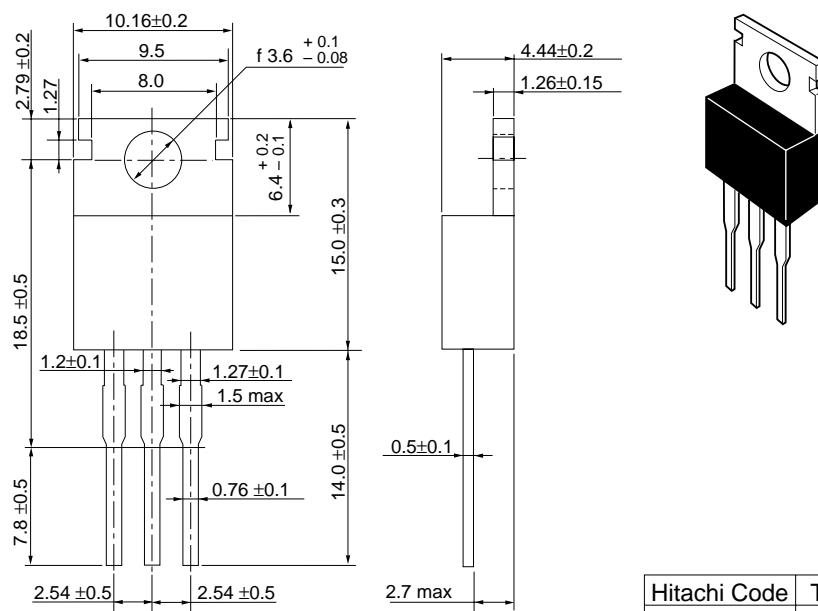
## Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	V <sub>(BR)DSS</sub>	200	—	—	V	I <sub>D</sub> = 10mA, V <sub>GS</sub> = 0
Gate to source breakdown voltage	V <sub>(BR)GSS</sub>	±20	—	—	V	I <sub>G</sub> = ±100μA, V <sub>DS</sub> = 0
Gate to source leak current	I <sub>GSS</sub>	—	—	±10	μA	V <sub>GS</sub> = ±16V, V <sub>DS</sub> = 0
Zero gate voltage drain current	I <sub>DSS</sub>	—	—	10	μA	V <sub>DS</sub> = 200 V, V <sub>GS</sub> = 0
Gate to source cutoff voltage	V <sub>GS(off)</sub>	1.0	—	2.5	V	I <sub>D</sub> = 1mA, V <sub>DS</sub> = 10V
Static drain to source on state resistance	R <sub>DS(on)</sub>	—	0.35	0.40	Ω	I <sub>D</sub> = 4A, V <sub>GS</sub> = 10V <sup>Note4</sup>
Forward transfer admittance	y <sub>fs</sub>	4	6.5	—	S	I <sub>D</sub> = 4A, V <sub>DS</sub> = 10V <sup>Note4</sup>
Input capacitance	C <sub>iss</sub>	—	410	—	pF	V <sub>DS</sub> = 10V
Output capacitance	C <sub>oss</sub>	—	150	—	pF	V <sub>GS</sub> = 0
Reverse transfer capacitance	C <sub>rss</sub>	—	90	—	pF	f = 1MHz
Turn-on delay time	t <sub>d(on)</sub>	—	10	—	ns	I <sub>D</sub> = 4A, V <sub>GS</sub> = 10V
Rise time	t <sub>r</sub>	—	45	—	ns	R <sub>L</sub> = 7.5Ω
Turn-off delay time	t <sub>d(off)</sub>	—	100	—	ns	
Fall time	t <sub>f</sub>	—	60	—	ns	
Body-drain diode forward voltage	V <sub>DF</sub>	—	0.95	—	V	I <sub>F</sub> = 8A, V <sub>GS</sub> = 0
Body-drain diode reverse recovery time	t <sub>rr</sub>	—	100	—	ns	I <sub>F</sub> = 8A, V <sub>GS</sub> = 0 diF/ dt = 50A/μs

Note: 4. Pulse test

## Package Dimensions

Unit: mm



Hitachi Code	TO-220AB
EIAJ	SC-46
JEDEC	—

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