

## 2SK2828

Silicon N Channel MOS FET  
High Speed Power Switching

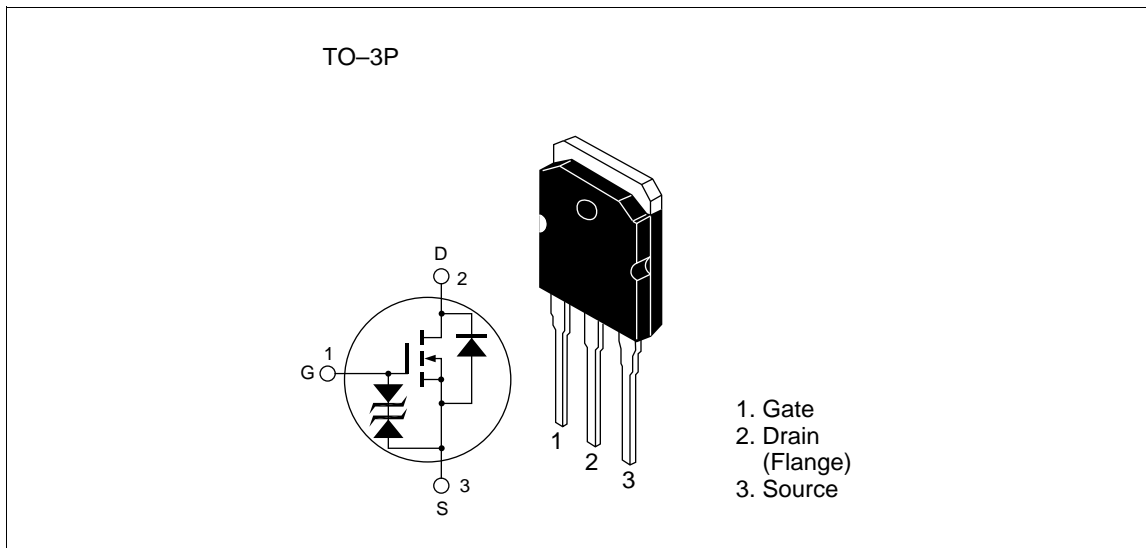
# HITACHI

2nd. Edition  
August 1996

### Features

- Low on-resistance
- High speed switching
- Low drive current
- No secondary breakdown
- Suitable for switching regulator and DC-DC converter
- Avalanche ratings

### Outline



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

Item	Symbol	Ratings	Unit
Drain to source voltage	VDSS	700	V
Gate to source voltage	VGSS	±30	V
Drain current	ID	12	A
Drain peak current	ID(pulse)*1	48	A
Body-drain diode reverse drain current	IDR	12	A
Avalanche current	IAP*3	12	A
Avalanche energy	EAR*3	7.8	mJ
Channel dissipation	Pch*2	175	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

- Note:
1.  $PW \leq 10\mu s$ , duty cycle  $\leq 1\%$
  2. Value at  $T_c = 25^\circ C$
  3. Value at  $T_{ch} = 25^\circ C$ ,  $R_g \geq 50\Omega$ ,  $L = 100\mu H$

### Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	V(BR)DSS	700	—	—	V	ID = 10mA, VGS = 0
Gate to source breakdown voltage	V(BR)GSS	±30	—	—	V	IG = ±100μA, VDS = 0
Gate to source leak current	IGSS	—	—	±10	μA	VGS = ±25V, VDS = 0
Zero gate voltage drain current	IDSS	—	—	100	μA	VDS = 560 V, VGS = 0
Gate to source cutoff voltage	VGS(off)	2.0	—	3.0	V	ID = 1mA, VDS = 10V
Static drain to source on state resistance	RDS(on)	—	0.9	1.2	Ω	ID = 6A, VGS = 10V*1
Forward transfer admittance	yfs	5.5	9.0	—	S	ID = 6A, VDS = 10V*1
Input capacitance	Ciss	—	1850	—	pF	VDS = 10V
Output capacitance	Coss	—	400	—	pF	VGS = 0
Reverse transfer capacitance	Crss	—	45	—	pF	f = 1MHz
Total gate charge	Qg	—	35	—	nc	VDD = 400V
Gate to source charge	Qgs	—	8	—	nc	VGS = 10V
Gate to drain charge	Qgd	—	10	—	nc	ID = 12A
Turn-on delay time	td(on)	—	25	—	ns	ID = 6A, RL = 5Ω
Rise time	tr	—	65	—	ns	VGS = 10V
Turn-off delay time	td(off)	—	140	—	ns	
Fall time	tf	—	55	—	ns	
Body-drain diode forward voltage	VDF	—	0.95	—	V	IF = 12A, VGS = 0
Body-drain diode reverse recovery time	trr	—	2.5	—	μs	IF = 12A, VGS = 0 diF/ dt = 100A/μs

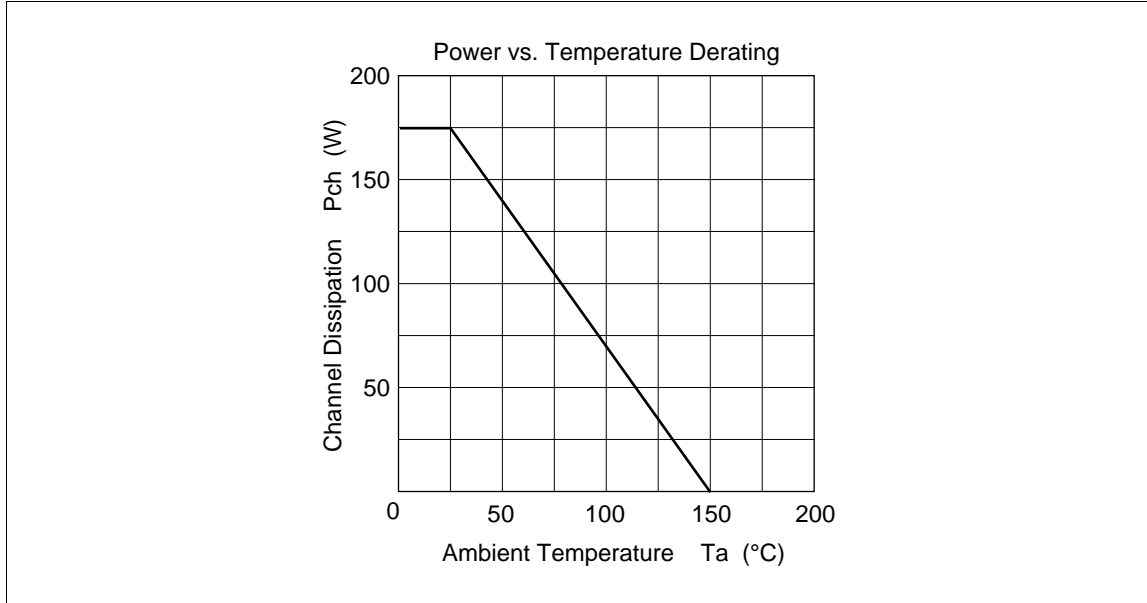
Note: 1. Pulse test

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### Main Characteristics



### Package Dimentions

Unit: mm

