2SK2568

Silicon N Channel MOS FET

Application

High speed power switching

Features

- Low on–resistance
- High speed switching
- Low drive current
- Suitable for switching regulator and DC–DC converter

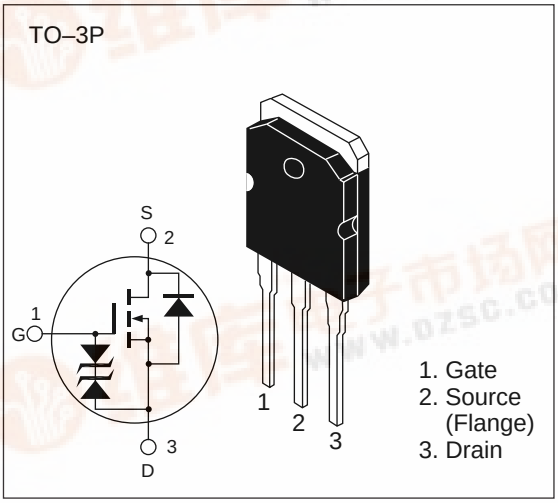


Table 1 Absolute Maximum Ratings (Ta = 25°C)

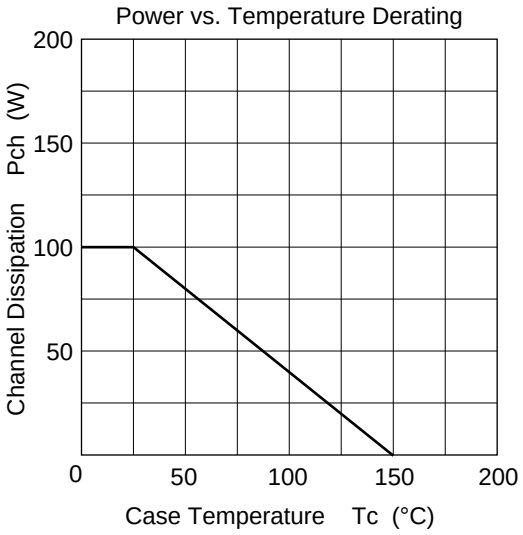
Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	500	V
Gate to source voltage	V_{GSS}	±30	V
Drain current	I_D**	12	A
Drain peak current	$I_{D(pulse)}$*	48	A
Body–drain diode reverse drain current	I_{DR}**	12	A
Channel dissipation	Pch**	100	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	–55 to +150	°C

* PW ≤ 10 µs, duty cycle ≤ 1 %
** Value at Tc = 25°C

Table 2 Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	500	—	—	V	I_D = 10 mA, V_{GS} = 0
Gate to source breakdown voltage	$V_{(BR)GSS}$	±30	—	—	V	I_G = ±100 µA, V_{DS} = 0
Gate to source leak current	I_{GSS}	—	—	±10	µA	V_{GS} = ±25 V, V_{DS} = 0
Zero gate voltage drain current	I_{DSS}	—	—	250	µA	V_{DS} = 400 V, V_{GS} = 0
Gate to source cutoff voltage	$V_{GS(off)}$	2.0	—	3.0	V	I_D = 1 mA, V_{DS} = 10 V
Static drain to source on state resistance	$R_{DS(on)}$	—	0.5	0.6	Ω	I_D = 6 A V_{GS} = 10 V *
Forward transfer admittance	$\|y_{fs}\|$	6.0	10	—	S	I_D = 6 A V_{DS} = 10 V *
Input capacitance	Ciss	—	(1560)	—	pF	V_{DS} = 10 V
Output capacitance	Coss	—	(450)	—	pF	V_{GS} = 0
Reverse transfer capacitance	Crss	—	(72)	—	pF	f = 1 MHz
Turn–on delay time	$t_{d(on)}$	—	(22)	—	ns	I_D = 6 A
Rise time	t_r	—	(78)	—	ns	V_{GS} = 10 V
Turn–off delay time	$t_{d(off)}$	—	(140)	—	ns	RL = 5 Ω
Fall tiem	t_f	—	(60)	—	ns	
Body–drain diode forward voltage	V_{DF}	—	(1.1)	—	V	I_F = 12 A, V_{GS} = 0
Body–drain diode reverse recovery time	t_{rr}	—	(105)	—	ns	I_F = 12 A, V_{GS} = 0 diF / dt = 100 A / µs

* Pulse Test


Power vs. Temperature Derating
200
150
100
50
0
50
100
150
200
Channel Dissipation Pch (W)
Case Temperature Tc (°C)