4AK26

Silicon N Channel Power MOS FET Array

Application

High speed power switching

Features

- Low on–resistance
  $R_{DS(on)} \leq 0.06\Omega$, V_{GS} = 10V, I_D = 5A
  $R_{DS(on)} \leq 0.075\Omega$, V_{GS} = 4V, I_D = 5A
- Capable of 4V gate drive
- Low drive current
- High speed switching
- High density mounting
- Suitable for motor driver and solenoid driver and lamp driver

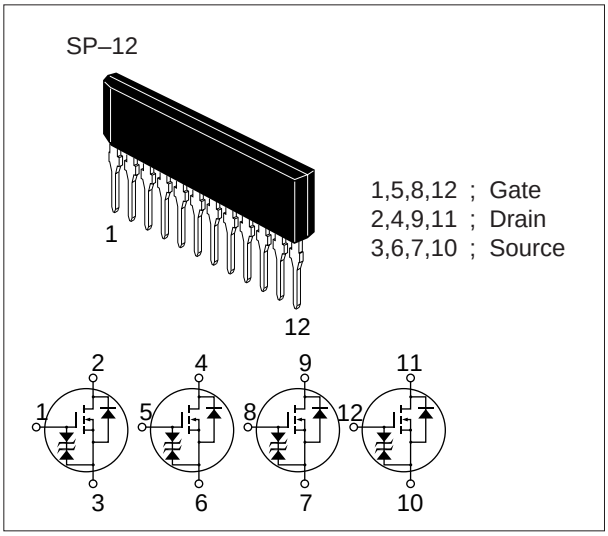


Table 1 Absolute Maximum Ratings (Ta = 25°C)

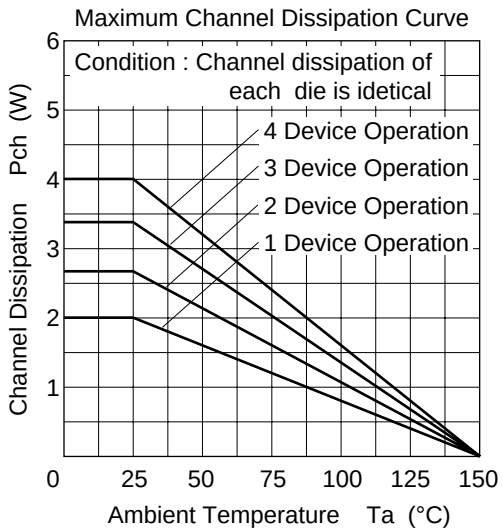
Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	60	V
Gate to source voltage	V_{GSS}	±20	V
Drain current	I_D	10	A
Drain peak current	$I_{D(pulse)}$*	32	A
Body–drain diode reverse drain current	I_{DR}	10	A
Channel dissipation	Pch(Tc = 25 °C)**	28	W
Channel dissipation	Pch**	4	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	–55 to +150	°C

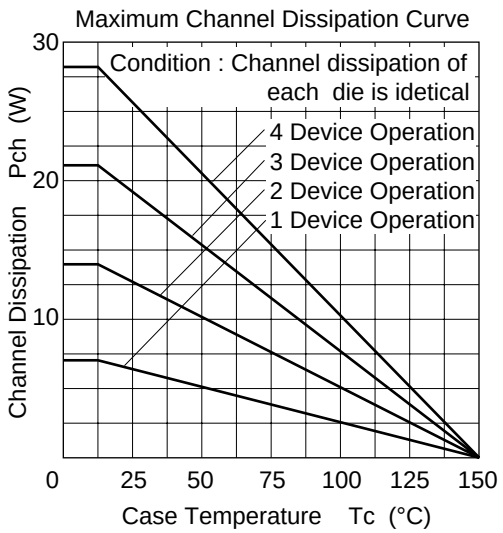
* PW ≤ 10 µs, duty cycle ≤ 1 %
** 4 Devices operation

Table 2 Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	60	—	—	V	I_D = 10 mA, V_{GS} = 0
Gate to source breakdown voltage	$V_{(BR)GSS}$	±20	—	—	V	I_G = ±100 µA, V_{DS} = 0
Gate to source leak current	I_{GSS}	—	—	±10	µA	V_{GS} = ±16 V, V_{DS} = 0
Zero gate voltage drain current	I_{DSS}	—	—	250	µA	V_{DS} = 50 V, V_{GS} = 0
Gate to source cutoff voltage	$V_{GS(off)}$	1.0	—	2.0	V	I_D = 1 mA, V_{DS} = 10 V
Static drain to source on state resistance	$R_{DS(on)}$	—	0.045	0.06	Ω	I_D = 5A V_{GS} = 10 V *
		—	0.056	0.075	Ω	I_D = 5 A V_{GS} = 4 V *
Forward transfer admittance	$\|y_{fs}\|$	10	12	—	S	I_D = 5 A V_{DS} = 10 V *
Input capacitance	Ciss	—	1400	—	pF	V_{DS} = 10 V
Output capacitance	Coss	—	720	—	pF	V_{GS} = 0
Reverse transfer capacitance	Crss	—	220	—	pF	f = 1 MHz
Turn–on delay time	$t_{d(on)}$	—	15	—	ns	I_D = 10 A
Rise time	t_r	—	95	—	ns	V_{GS} = 10 V
Turn–off delay time	$t_{d(off)}$	—	300	—	ns	R_L = 3 Ω
Fall time	t_f	—	170	—	ns	
Body–drain diode forward voltage	V_{DF}	—	1.05	—	V	I_F = 10 A, V_{GS} = 0
Body–drain diode reverse recovery time	t_{rr}	—	110	—	µs	I_F = 10 A, V_{GS} = 0, dIF / dt = 50 A / µs

* Pulse Test


Maximum Channel Dissipation Curve
Condition : Channel dissipation of each die is idetical
4 Device Operation
3 Device Operation
2 Device Operation
1 Device Operation
Channel Dissipation Pch (W)
Ambient Temperature Ta (°C)
0
25
50
75
100
125
150
1
2
3
4
5
6


Maximum Channel Dissipation Curve
Condition : Channel dissipation of each die is idetical
4 Device Operation
3 Device Operation
2 Device Operation
1 Device Operation
Channel Dissipation Pch (W)
Case Temperature Tc (°C)
0
25
50
75
100
125
150
10
20
30