

4AJ11

Silicon P Channel Power MOS FET Array

Application

High speed power switching

Features

- Low on-resistance
 $R_{DS(on)} \leq 0.13\Omega$, $V_{GS} = -10V$, $I_D = -4A$
 $R_{DS(on)} \leq 0.17\Omega$, $V_{GS} = -4V$, $I_D = -4A$
- Capable of 4V gate drive
- Low drive current
- High speed switching
- High density mounting
- Suitable for motor driver and solenoid driver and lamp driver
- Discrete packaged devices of same die
 2SJ173, 2SJ176, 2SJ219 L, 2SJ219 S

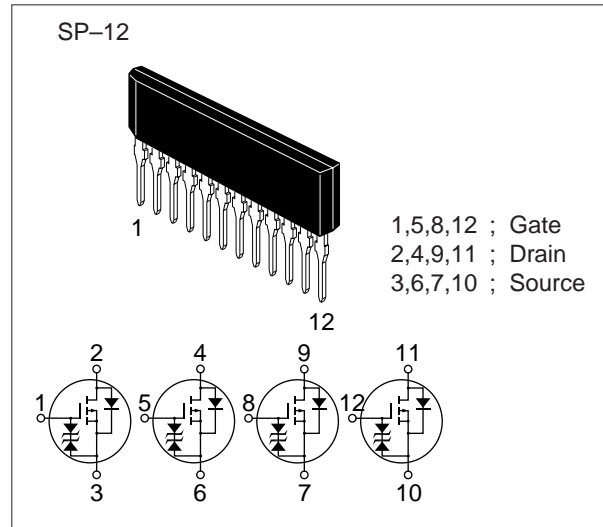


Table 1 Absolute Maximum Ratings ($T_a = 25^\circ C$)

Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	-60	V
Gate to source voltage	V_{GSS}	± 20	V
Drain current	I_D	-8	A
Drain peak current	$I_{D(pulse)^*}$	-32	A
Body-drain diode reverse drain current	I_{DR}	-8	A
Channel dissipation	$P_{ch}(T_c = 25^\circ C)^{**}$	28	W
Channel dissipation	P_{ch}^{**}	4	W
Channel temperature	T_{ch}	150	$^\circ C$
Storage temperature	T_{stg}	-55 to +150	$^\circ C$

* $PW \leq 10 \mu s$, duty cycle $\leq 1\%$

** 4 Devices operation

Table 2 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	$I_G = \pm 100\text{ }\mu\text{A}$, $V_{DS} = 0$
Gate to source leak current	I_{GSS}	—	—	± 10	μA	$V_{GS} = \pm 16\text{ V}$, $V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	-250	μA	$V_{DS} = -50\text{ V}$, $V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	-1.0	—	-2.0	V	$I_D = -1\text{ mA}$, $V_{DS} = -10\text{ V}$
Static drain to source on state resistance	$R_{DS(on)}$	—	0.09	0.13	Ω	$I_D = -4\text{ A}$ $V_{GS} = -10\text{ V}^*$
		—	0.12	0.17	Ω	$I_D = -4\text{ A}$ $V_{GS} = -4\text{ V}^*$
Forward transfer admittance	$ y_{fs} $	5.5	7.7	—	S	$I_D = -4\text{ A}$ $V_{DS} = -10\text{ V}^*$
Input capacitance	C_{iss}	—	1400	—	pF	$V_{DS} = -10\text{ V}$
Output capacitance	C_{oss}	—	720	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	C_{rss}	—	220	—	pF	$f = 1\text{ MHz}$
Turn-on delay time	$t_{d(on)}$	—	15	—	ns	$I_D = -8\text{ A}$
Rise time	t_r	—	120	—	ns	$V_{GS} = -10\text{ V}$
Turn-off delay time	$t_{d(off)}$	—	220	—	ns	$R_L = 3.75\text{ }\Omega$
Fall time	t_f	—	160	—	ns	
Body-drain diode forward voltage	V_{DF}	—	-1.05	—	V	$I_F = -8\text{ A}$, $V_{GS} = 0$
Body-drain diode reverse recovery time	t_{rr}	—	190	—	μs	$I_F = -8\text{ A}$, $V_{GS} = 0$, $dI_F / dt = 50\text{ A} / \mu\text{s}$

* Pulse Test

■ See characteristic curves of 2SJ173, 2SJ176.

