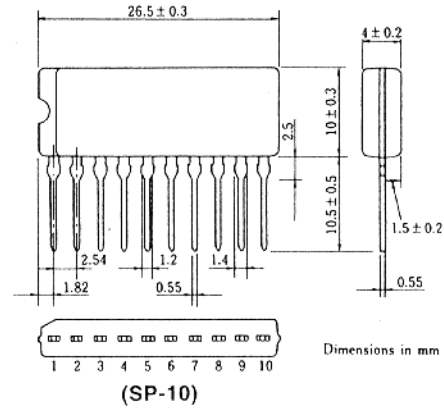


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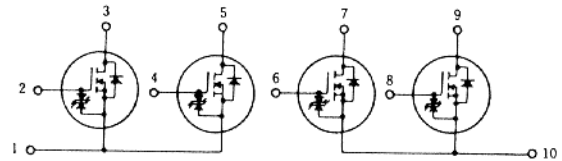
SILICON N-CHANNEL POWER MOS FET ARRAY HIGH SPEED POWER SWITCHING

■ FEATURES

- Low On-Resistance
 - $R_{DS(on)} \leq 0.07 \Omega, V_{GS} = 10 \text{ V}, I_D = 8 \text{ A}$
 - $R_{DS(on)} \leq 0.095 \Omega, V_{GS} = 4 \text{ V}, I_D = 8 \text{ A}$
- Capable of 4 V Gate Drive
- Low Drive Current
- High Speed Switching
- High Density Mounting
- Suitable for Motor Driver, Solenoid Driver and Lamp Driver
- Discrete Packaged Devices of Same Die: 2SK971, 2SK1094



■ EQUIVALENT CIRCUIT



■ ABSOLUTE MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)(1Unit)

Item	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	± 60	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current	I_D	8	A
Drain Peak Current	$I_D(\text{pulse})^*$	32	A
Body-Drain Diode Reverse Drain Current	I_{DR}	8	A
Channel Dissipation	$P_{ch}(T_c = 25^\circ\text{C})^{**}$	28	W
Channel Dissipation	P_{ch}^{**}	4	W
Channel Temperature	T_{ch}	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	$-55 \sim +150$	$^\circ\text{C}$

* $PW \leq 10 \mu\text{s}$, duty cycle $\leq 1\%$
 ** 4 Devices Operation

■ PIN CONNECTION

2.4.6.8; Gate
 3.5.7.9; Drain
 1.10 ; Source

■ ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}\text{C}$) (1Unit)

Item	Symbol	Test Condition	min.	typ.	max.	Unit
Drain-Source Breakdown Voltage	V_{BRDSS}	$I_D = 10\text{mA}, V_{GS} = 0$	60	—	—	V
Gate-Source Breakdown Voltage	V_{BRGSS}	$I_G = \pm 100\mu\text{A}, V_{DS} = 0$	± 20	—	—	V
Gate-Source Leak Current	I_{GSS}	$V_{GS} = \pm 16\text{V}, V_{DS} = 0$	—	—	± 10	μA
Zero Gate Voltage Drain Currnt	I_{DSS}	$V_{DS} = 50\text{V}, V_{GS} = 0$	—	—	250	μA
Gate-Source Cutoff Voltage	$V_{GS(off)}$	$I_D = 1\text{mA}, V_{DS} = 10\text{V}$	1.0	—	2.0	V
Static Drain-Source on State Resistance	$R_{DS(on)}$	$I_D = 8\text{A}, V_{GS} = 10\text{V}^*$	—	0.055	0.07	Ω
		$I_D = 8\text{A}, V_{GS} = 4\text{V}^*$	—	0.075	0.095	Ω
Forward Transfer Admittance	$ y_{fs} $	$I_D = 8\text{A}, V_{DS} = 10\text{V}^*$	7	12	—	S
Input Capacitance	C_{iss}	$V_{DS} = 10\text{V}, V_{GS} = 0,$ $f = 1\text{MHz}$	—	860	—	pF
Output Capacitance	C_{oss}		—	450	—	pF
Reverse Transfer Capacitance	C_{rss}		—	140	—	pF
Turn-On Delay Time	$t_{d(on)}$		—	10	—	ns
Rise Time	t_r	$I_D = 8\text{A}, V_{GS} = 10\text{V},$ $R_t = 3.75\Omega$	—	70	—	ns
Turn-off Delay Time	$t_{d(off)}$		—	180	—	ns
Fall Time	t_f		—	120	—	ns
Body-Drain Diode Forward Voltage	V_{DF}	$I_F = 8\text{A}, V_{GS} = 0$	—	1.05	—	V
Body-Drain Doide Reverse Recovery Time	t_{rr}	$I_F = 8\text{A}, V_{GS} = 0$ $di_F/dt = 50\text{A}/\mu\text{s}$	—	110	—	ns

*Pulse Test

■ See characteristic curves of 2SK971

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