HITACHI

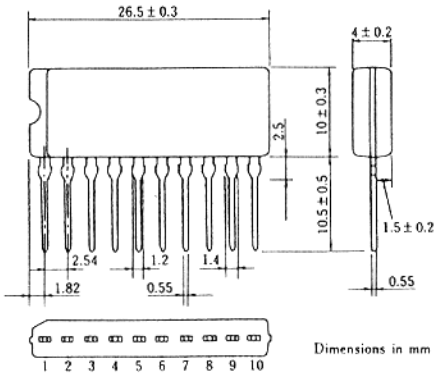
4AK22

SILICON N-CHANNEL POWER MOS FET ARRAY

HIGH SPEED POWER SWITCHING

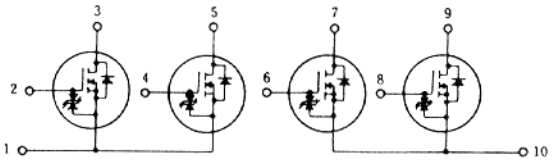
■ FEATURES

- Low On-Resistance
  R_{DS} (on) ≦ 0.4 Ω , V_{GS} = 10 V, I_D = 1.5 A
  R_{DS} (on) ≦ 0.55 Ω , V_{GS} = 4 V, I_D = 1.5 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: 2SK1254 Ⓛ , 2SK1254 Ⓢ



(SP-10)

■EQUIVALENT CIRCUIT



■ABSOLUTE MAXIMUM RATINGS (Ta = 25℃) (1Unit)

Item	Symbol	Rating	Unit
Drain-Source Voltage	V_{DSS}	120	V
Gate-Source Voltage	V_{GSS}	±20	V
Drain Current	I_D	3	A
Drain Peak Current	$I_{D(pulse)}$*	12	A
Body-Drain Diode Reverse Drain Current	I_{DR}	3	A
Channel Dissipation	$Pch(Tc=25℃)$**	28	W
Channel Dissipation	Pch**	4	W
Channel Temperature	Tch	150	℃
Storage Temperature	$Tstg$	−55～+150	℃

*PW≦10μs, duty cycle≦1%

**4 Devices Operation

■ PIN CONNECTION

2. 4. 6. 8 ; Gate
3. 5. 7. 9 ; Drein
1. 10 ; Source

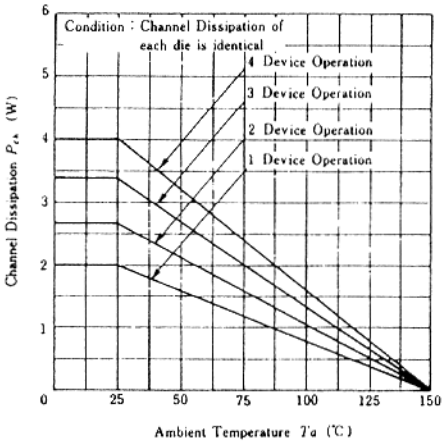
■ELECTRICAL CHARACTERISTICS (Ta = 25℃) (1 Unit)

Item	Symbol	Test Condition	min.	typ.	max.	Unit
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	I_D = 10mA, V_{GS} = 0	120	—	—	V
Gate-Source Breakdown Voltage	$V_{(BR)DSS}$	I_G = ±100 μA, V_{DS} = 0	±20	—	—	V
Gate-Source Leak Current	I_{GSS}	V_{GS} = ±16V, V_{DS} = 0	—	—	±10	μA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = 100V, V_{GS} = 0	—	—	100	μA
Gate-Source Cutoff Voltage	$V_{GS(off)}$	I_D = 1mA, V_{DS} = 10V	1.0	—	2.0	V
Static Drain-Source On State Resistance	$R_{DS(on)}$	I_D = 1.5A, V_{GS} = 10V*	—	0.3	0.4	Ω
		I_D = 1.5A, V_{GS} = 4V*	—	0.35	0.55	Ω
Forward Transfer Admittance	$\|yfs\|$	I_D = 1.5A, V_{DS} = 10V*	2.0	3.5	—	S
Input Capacitance	Ciss	V_{DS} = 10V, V_{GS} = 0, f = 1MHz	—	420	—	pF
Output Capacitance	Coss		—	190	—	pF
Reverse Transfer Capacitance	Crss		—	25	—	pF
Turn-on Delay Time	td (on)	I_D = 1.5A, V_{GS} = 10V, R_L = 20Ω	—	5	—	ns
Rise Time	t_r		—	20	—	ns
Turn-off Delay Time	td (off)		—	160	—	ns
Fall Time	t_f		—	40	—	ns
Body-Drain Diode Forward Voltage	V_{DF}	I_F = 3A, V_{GS} = 0	—	0.95	—	V
Body-Drain Doide Reverse Recovery Time	t_{rr}	I_F = 3A, V_{GS} = 0 di_F/dt = 50A/ μs	—	160	—	ns

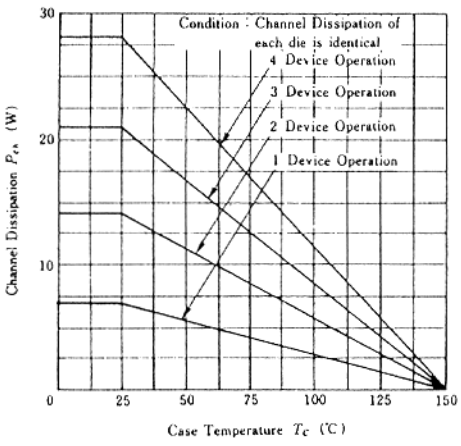
* Pulse Test

■See characteristic curves of 2SK1254Ⓛ, 2SK1254Ⓢ

MAXIMUM CHANNEL DISSIPATION CURVE



MAXIMUM CHANNEL DISSIPATION CURVE



MAXIMUM SAFE OPERATION AREA