

2SK1094

Silicon N-Channel MOS FET

Application

High speed power switching

Features

- Low on-resistance
- High speed switching
- Low drive current
- 4 V gate drive device
 - Can be driven from 5 V source
- Suitable for motor drive, DC-DC converter, power switch and solenoid drive

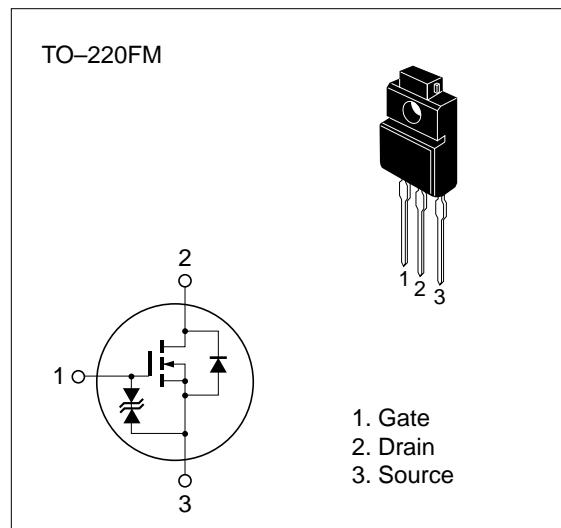


Table 1 Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V _{DSS}	60	V
Gate to source voltage	V _{GSS}	±20	V
Drain current	I _D	15	A
Drain peak current	I _{D(pulse)} *	60	A
Body to drain diode reverse drain current	I _{DR}	15	A
Channel dissipation	P _{ch} **	25	W
Channel temperature	T _{ch}	150	°C
Storage temperature	T _{stg}	–55 to +150	°C

* PW ≤ 10 µs, duty cycle ≤ 1 %

** Value at T_C = 25 °C

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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)}	—	0.055 0.075	0.065 0.095	Ω	I _D = 8 A, V _{GS} = 10 V * I _D = 8 A, V _{GS} = 4 V *
Forward transfer admittance	y _{fs}	7	12	—	S	I _D = 8 A, V _{DS} = 10 V *
Input capacitance	C _{iss}	—	860	—	pF	V _{DS} = 10 V, V _{GS} = 0,
Output capacitance	C _{oss}	—	450	—	pF	f = 1 MHz
Reverse transfer capacitance	C _{rss}	—	140	—	pF	
Turn-on delay time	t _{d(on)}	—	10	—	ns	I _D = 8 A, V _{GS} = 10 V,
Rise time	t _r	—	70	—	ns	R _L = 3.75 Ω
Turn-off delay time	t _{d(off)}	—	180	—	ns	
Fall time	t _f	—	120	—	ns	
Body to drain diode forward voltage	V _{DF}	—	1.3	—	V	I _F = 15 A, V _{GS} = 0
Body to drain diode reverse recovery time	t _{rr}	—	135	—	ns	I _F = 15 A, V _{GS} = 0, di _F /dt = 50 A/µs

* Pulse Test

See characteristic curves of 2SK971.

