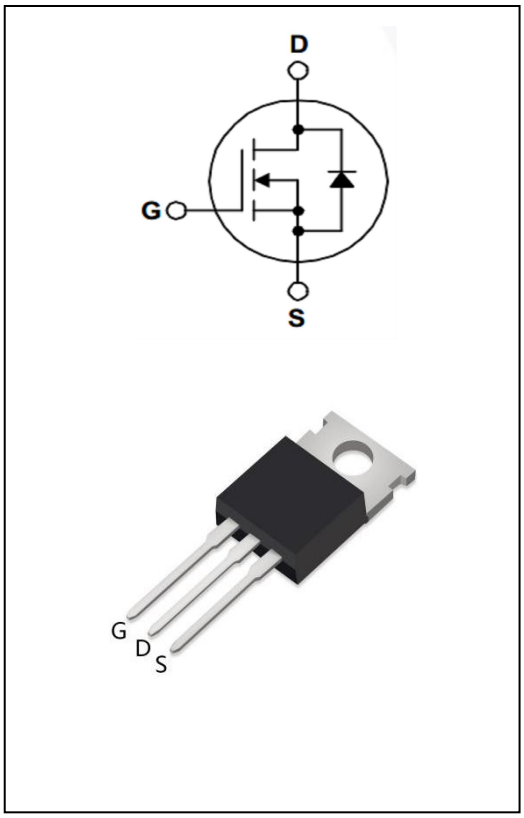
Silicon N-Channel Power MOSFET

Description

The TH8N50PC uses advanced technology and design to provide excellent $R_{DS(ON)}$. It can be used in a wide variety of applications.



General Features

- V_{DS}=500V,I_D=8A
- Low ON Resistance
- Low Reverse transfer capacitances
- 100% Single Pulse avalanche energy Test

Application

- Power switching application
- Adapter and charger

Electrical Characteristics @ Ta=25℃ (unless otherwise specified)

a) Absolute Maximum Ratings:

Symbol	Parameter	Value	Units
V_{DSS}	Drain-to-Source Breakdown Voltage	500	V
I_D	Drain Current (continuous) at Tc=25℃	8	A
I_{DM}	Drain Current (pulsed)	32	A
V_{GS}	Gate to Source Voltage	+/-30	V
P_{tot}	Total Dissipation at Tc=25℃	75	W
T_j	Max. Operating Junction Temperature	175	℃
E_{AS}	Single Pulse Avalanche Energy	440	mJ

b) Electrical Parameters:

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
V_{DS}	Drain-source Voltage	V_{GS}=0V, I_D=250μA	500			V
$R_{DS(on)}$	Static Drain-to-Source on-Resistance	V_{GS}=10V, I_D=4A		0.7	0.9	Ω
$V_{GS(th)}$	Gated Threshold Voltage	V_{DS}=V_{GS}, I_D=250μA	2.0	3.0	4.0	V
I_{DSS}	Drain to Source leakage Current	V_{DS}=500V, V_{GS}= 0V			1.0	μA
$I_{GSS(F)}$	Gated Body Foward Leakage	V_{GS}= +20V			100	nA
$I_{GSS(R)}$	Gated Body Reverse Leakage	V_{GS}= -20V			-100	nA
C_{iss}	Input Capacitance	V_{GS}=0V, V_{DS}=25V, f=1.0MHZ		1136		pF
C_{oss}	Output Capacitance			112		pF
C_{rss}	Reverse Transfer Capacitance			7		pF

c) Switching Characteristics

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
$t_{d(on)}$	Turn-on Delay Time	V_{DD}=250V,I_D=8A, R_G=10Ω		18		nS
t_r	Turn-on Rise Time			20		nS
$t_{d(off)}$	Turn-off Delay Time			44		nS
t_f	Turn-off Fall Time			15		nS
Q_g	Total Gate Charge	V_{DS}=250V I_D=8A V_{GS}=10V		24		nC
Q_{gs}	Gate-Source Charge			5		nC
Q_{gd}	Gate-Drain Charge			9		nC

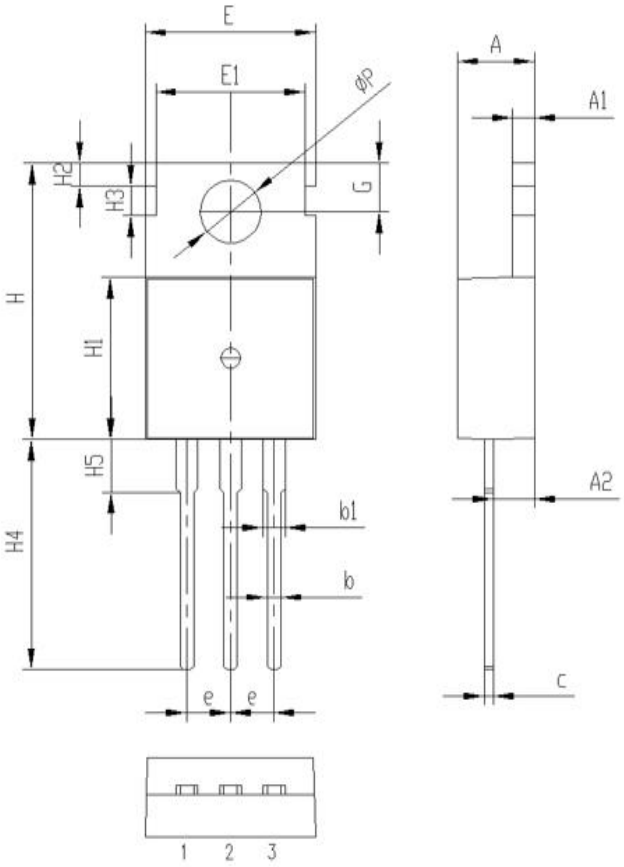
d) Source-Drain Diode Characteristics

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
I_{SD}	S-D Current(Body Diode)				8	A
I_{SDM}	Pulsed S-D Current(Body Diode)				32	A
V_{SD}	Diode Forward Voltage	V_{GS}=0V, I_{DS}=15A			1.5	V
t_{rr}	Reverse Recovery Time	T_J=25℃,I_F=88A di/dt=100A/us			374	nS
Q_{rr}	Reverse Recovery Charge				1830	μC
	*Pulse Test: Pulse Width <= 300μs, Duty Cycle< =2%					

Symbol	Parameter	Typ	Units
$R_{\theta JC}$	Junction-to-Case	2.0	℃/W

Package Information

TO-220C PACKAGE



Symbol	单位 mm		
	Min	Nom	Max
A	4.30	4.5	4.70
A1	1.20	1.30	1.40
A2	2.20	2.4	2.60
b	0.60	0.8	1.00
b1	1.20	1.30	1.40
c	0.40	0.5	0.60
e	2.44	2.54	2.64
E	9.80	10.0	10.2
E1	8.50	8.70	8.90
H	15.5	15.7	15.9
H1	9.00	9.2	9.40
H2	1.10	1.34	1.50
H3	1.50	1.7	1.90
H4	12.9	13.3	13.7
H5	2.80	3.0	3.20
G	2.60	2.8	3.00
ΦP	3.40	3.6	3.80

Notice

Thunder Microelectronics Incorporated Limited reserves the right to make changes without further notice to any products or specifications herein. When use the product, be sure to obtain the latest specification.

Thunder Microelectronics Incorporated Limited does not assume any liability arising out of the application or any product described herein. When using Thunder Microelectronics Incorporated Limited products in your equipment, you are requested to take adequate safety measures to prevent the equipment from causing a physical injury ,fire or other problem if any of the products become faulty.

-Headquarters

WuXi Thunder Microelectronics Incorporated Limited

Building E1-901, No.200 LingHu Road, XinWu district,WuXi,China 214135

Tel:+86-510-85160109 Fax:+86-510-85160109