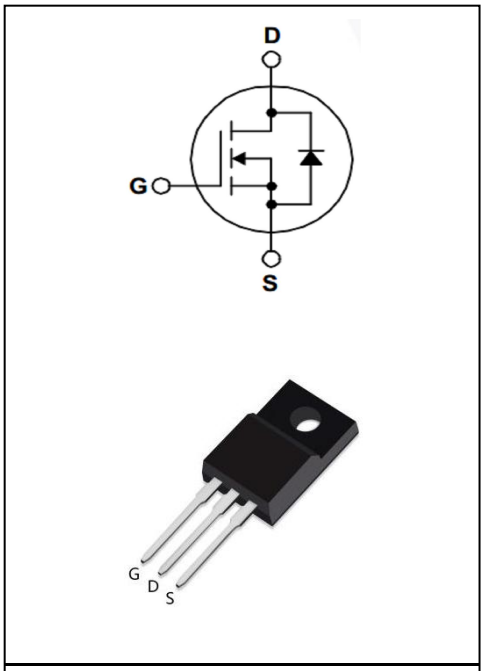
Silicon N-Channel Power MOSFET

Description

The TH4N65PF uses advanced technology and design to provide excellent $R_{DS(ON)}$. It can be used in a wide variety of applications.



THUNDER TO-220F

General Features

- V_{DS}=650V,I_D=4A
- 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	650	V
I_D	Drain Current (continuous) at Tc=25℃	4	A
I_{DM}	Drain Current (pulsed)	16	A
V_{GS}	Gate to Source Voltage	+/-30	V
P_{tot}	Total Dissipation at Tc=25℃	75	W
T_j	Max. Operating Junction Temperature	150	℃
E_{AS}	Single Pulse Avalanche Energy	180	mJ

b) Electrical Parameters:

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
V_{DS}	Drain-source Voltage	V_{GS}=0V, I_D=250μA	650			V
$R_{DS(on)}$	Static Drain-to-Source on-Resistance	V_{GS}=10V, I_D=2A		2.0	2.5	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}=650V, V_{GS}= 0V			1.0	μA
$I_{GSS(F)}$	Gated to Source Foward Leakage	V_{GS}= +30V			100	nA
$I_{GSS(R)}$	Gated to Source Reverse Leakage	V_{GS}= -30V			-100	nA
C_{iss}	Input Capacitance	V_{GS}=0V, V_{DS}=25V, f=1.0MHZ		544		pF
C_{oss}	Output Capacitance			55		pF
C_{rss}	Reverse Transfer Capacitance			8.5		pF

c) Switching Characteristics

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
$t_{d(on)}$	Turn-on Delay Time	V_{DD}=325V,I_D=4A, R_G=4.7Ω		10		nS
t_r	Turn-on Rise Time			11		nS
$t_{d(off)}$	Turn-off Delay Time			31		nS
t_f	Turn-off Fall Time			16		nS
Q_g	Total Gate Charge	V_{DS}=325V I_D=4A V_{GS}=10V		14.5		nC
Q_{gs}	Gate-Source Charge			3		nC
Q_{gd}	Gate-Drain Charge			6		nC

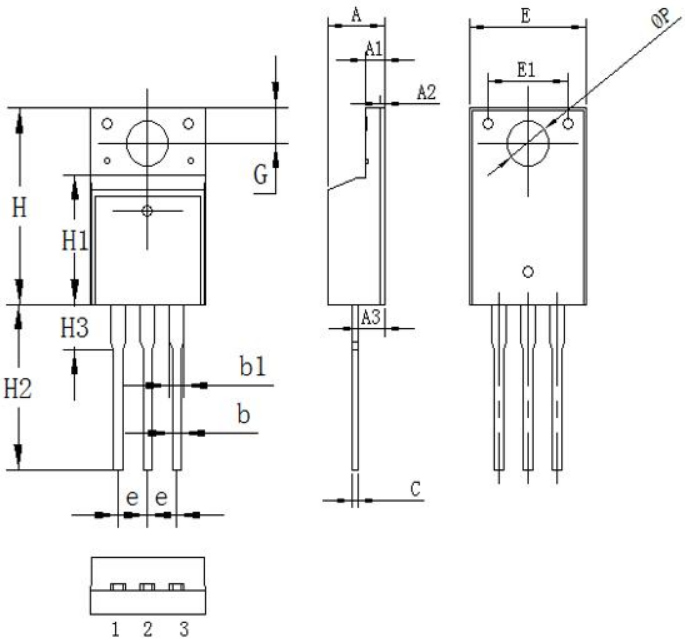
d) Source-Drain Diode Characteristics

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
I_{SD}	S-D Current(Body Diode)				4	A
I_{SDM}	Pulsed S-D Current(Body Diode)				20	A
V_{SD}	Diode Forward Voltage	V_{GS}=0V, I_{DS}=4A			1.5	V
t_{rr}	Reverse Recovery Time	T_J=25℃,I_F=4A di/dt=100A/us		430		nS
Q_{rr}	Reverse Recovery Charge			1.27		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-220F PACKAGE



基本尺寸

Symbol	单位 mm		
	Min	Nom	Max
A	4.55	4.75	4.95
A1	2.40	2.60	2.80
A2	0.40	0.60	0.80
A3	2.10	2.30	2.50
b1	1.10	1.30	1.50
b	0.60	0.80	1.00
c	0.42	0.50	0.58
e	2.30	2.50	2.70
E	9.9	10.1	10.3
E1	6.8	7	7.2
H	15.8	16.0	16.2
H1	9.10	9.30	9.50
H2	12.5	13.0	13.5
H3	3.10	3.30	3.50
G	3.00	3.20	3.40
ΦP	3.00	3.20	3.40

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