Silicon N Channel Power MOSFET

Description

The HXN0650A is n-channel power trench MOSFET with latest technology. So fast switching speed and low on-resistance. Usually used at power switching application . It is also intended for any applications with low gate drive requirements .

Product Summary

BVDS	RDSON	ID
60V	16mΩ	50A

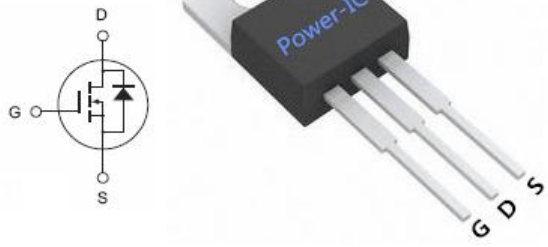
Features

- **Latest Trench Power MOSFET technology**
- **Low On-state Resistance**
- **High Current Density**
- **Low Gate Charge**
- **100% UIS Test**

Applications

- **Motor Driver**
- **Power Management**

TO-220 Package



1、Absolute maximum ratings

Symbol	Parameter	Value	Unit
V_{DS}	Drain-source voltage (V_{GS} = 0)	60	V
V_{GS}	Gate-source voltage	±25	V
I_D (1)	Drain current (continuous) at TC = 25℃	50	A
I_{DM} (2)	Drain current (pulsed)	200	A

P_D	Power dissipation at TC = 25℃	200	W
E_{AS} (3)	Single pulse avalanche energy	450	mJ
Tj	Operating junction temperature	-55 to 150	℃

1. Current limited by package
2. Pulse width limited by safe operating area
3. Starting Tj= 25 ℃， ID= 30A, VDD= 30V，L=1mH

2、Thermal data

Symbol	Parameter	Min.	Typ.	Max.	Unit
$R_{\theta JA}$	Thermal Resistance Junction-Ambient		62.5		℃/ W
$R_{\theta JC}$	Thermal Resistance Junction-Case		0.5		℃/ W

3、Electrical characteristics

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
$V_{(BR)DSS}$	Drain-source breakdown	I_D=250μA, V_{GS}= 0	60			V
I_{DSS}	Zero gate voltage drain	V_{DS}=Max rating			1	μA
I_{GSS}	Gate body leakage current	V_{GS} =±25V			±100	nA
$V_{GS(th)}$	Gate threshold voltage	V_{DS}= V_{GS}	2	3	4	V
$R_{DS(on)}$	Static drain-source on	V_{GS}= 10V		16		mΩ
C_{iss}	Input capacitance	V_{DS} =25V		3000		pF
C_{oss}	Output capacitance	f = 1 MHz		230		pF
C_{rss}	Reverse transfer	V_{GS} = 0		170		pF
Q_g	Total gate charge	V_{DD} = 30V		30		nC
Q_{gs}	Gate-source charge	I_D = 40A		12		nC
Q_{gd}	Gate-drain charge	V_{GS} =10V		9		nC
I_{SD}	Source-drain current				50	A

I_{SDM} (1)	Source-drain current (pulsed)				200	A
V_{SD} (2)	Forward on voltage	I_{SD} = 50A, V_{GS} = 0			1.2	V

1. Pulse width limited by safe operating area
2. Pulsed: pulse duration=300μs, duty cycle 1.5%