

Silicon N Channel Power MOSFET

Description

The HXN0680 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 .

Features

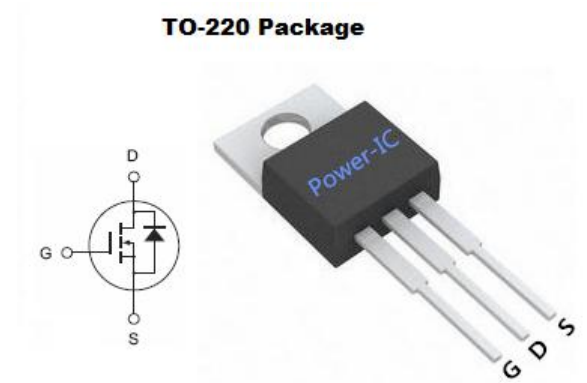
- Latest Trench Power MOSFET technology
- Low On-state Resistance
- High Current Density
- Low Gate Charge
- 100% UIS Test

Product Summery

BVDS	RDSON	ID
60V	6.5mΩ	80A

Applications

- Moter Driver
- Power Management



1、 Absolute maximum ratings

Symbol	Parameter	Value	Unit
V_{DS}	Drain-source voltage ($V_{GS} = 0$)	60	V
V_{GS}	Gate-source voltag	± 25	V
$I_D^{(1)}$	Drain current (continuous) at $TC = 25\text{ }^{\circ}\text{C}$	80	A
$I_{DM}^{(2)}$	Drain current (pulsed)	320	A

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P_D	Power dissipation at $T_C = 25\text{ }^{\circ}\text{C}$	180	W
$E_{AS}^{(3)}$	Single pulse avalanche energy	600	mJ
T_j	Operating junction temperature	-55 to 150	$^{\circ}\text{C}$

1. Current limited by package
2. Pulse width limited by safe operating area
3. Starting $T_j = 25\text{ }^{\circ}\text{C}$, $I_D = 35\text{A}$, $V_{DD} = 30\text{V}$, $L = 1\text{mH}$

2、Thermal data

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

3、Electrical characteristics

Symbol	Parameter	Test conditions	Min.	Typ.	Max.	Unit
$V_{(BR)DSS}$	Drain-source breakdown	$I_D = 250\mu\text{A}$, $V_{GS} = 0$	60			V
I_{DSS}	Zero gate voltage drain	$V_{DS} = \text{Max rating}$			1	μA
I_{GSS}	Gate body leakage current	$V_{GS} = \pm 25\text{V}$			± 100	nA
$V_{GS(th)}$	Gate threshold voltage	$V_{DS} = V_{GS}$	2	3	4	V
$R_{DS(on)}$	Static drain-source on	$V_{GS} = 10\text{V}$		6.5		m Ω
C_{iss}	Input capacitance	$V_{DS} = 25\text{V}$		3800		pF
C_{oss}	Output capacitance	$f = 1\text{ MHz}$		420		pF
C_{rss}	Reverse transfer	$V_{GS} = 0$		220		pF
Q_g	Total gate charge	$V_{DD} = 30\text{V}$		80		nC
Q_{gs}	Gate-source charge	$I_D = 40\text{A}$		11		nC
Q_{gd}	Gate-drain charge	$V_{GS} = 10\text{V}$		21		nC
I_{SD}	Source-drain current				80	A

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$I_{SDM}^{(1)}$	Source-drain current (pulsed)				320	A
$V_{SD}^{(2)}$	Forward on voltage	$I_{SD} = 80A, V_{GS} = 0$			1.2	V

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