

### Description

The XYD8290A 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

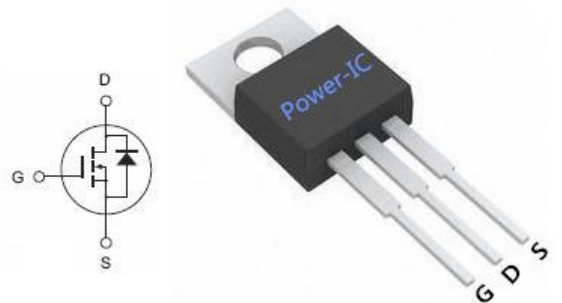
### Product Summary

BVDS	RDSON	ID
80V	6.5mΩ	90A

### Applications

- Motor Driver
- Power Management

TO-220 Package



### 1、 Absolute maximum ratings

Symbol	Parameter	Value	Unit
$V_{DS}$	Drain-source voltage ( $V_{GS} = 0$ )	80	V
$V_{GS}$	Gate-source voltage	$\pm 25$	V
$I_{D(1)}$	Drain current (continuous) at $T_C = 25^\circ C$	90	A
$I_{DM}^{(2)}$	Drain current (pulsed)	300	A

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$P_D$	Power dissipation at $T_C = 25^\circ\text{C}$	160	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  $T_j = 25^\circ\text{C}$ ,  $I_D = 40\text{A}$ ,  $V_{DD} = 30\text{V}$ ,  $L = 1\text{mH}$

## 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	$I_D = 250\mu\text{A}$ , $V_{GS} = 0$	80			V
$I_{DSS}$	Zero gate voltage drain	$V_{DS} = \text{Max rating}$			1	$\mu\text{A}$
$I_{GSS}$	Gate body leakage current	$V_{GS} = \pm 25\text{V}$			$\pm 100$	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 $\Omega$
$C_{iss}$	Input capacitance	$V_{DS} = 25\text{V}$		4200		pF
$C_{oss}$	Output capacitance	$f = 1\text{MHz}$		350		pF
$C_{rss}$	Reverse transfer	$V_{GS} = 0$		220		pF
$Q_g$	Total gate charge	$V_{DD} = 30\text{V}$		90		nC
$Q_{gs}$	Gate-source charge	$I_D = 40\text{A}$		28		nC
$Q_{gd}$	Gate-drain charge	$V_{GS} = 10\text{V}$		22		nC
$I_{SD}$	Source-drain current				80	A

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$I_{SDM}^{(1)}$	Source-drain current (pulsed)				300	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 $\mu$ s, duty cycle 1.5%