



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



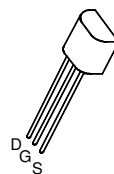
# N-CHANNEL ENHANCEMENT MODE VERTICAL DMOS FET

## ZVN4210A

ISSUE 2 – MARCH 94

### FEATURES

- \* 100 Volt  $V_{DS}$
- \*  $R_{DS(on)} = 1.5\Omega$
- \* Spice model available



E-Line  
TO92 Compatible

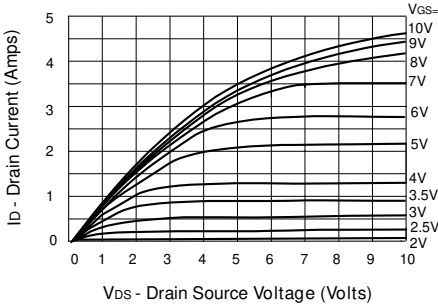
### ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Drain-Source Voltage	$V_{DS}$	100	V
Continuous Drain Current at $T_{amb}=25^{\circ}C$	$I_D$	450	mA
Pulsed Drain Current	$I_{DM}$	6	A
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Power Dissipation at $T_{amb}=25^{\circ}C$	$P_{tot}$	700	mW
Operating and Storage Temperature Range	$T_j; T_{stg}$	-55 to +150	$^{\circ}C$

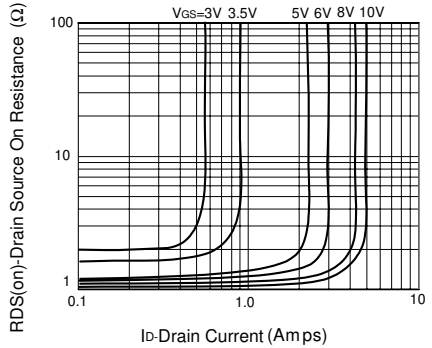
### ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}C$ unless otherwise stated).

PARAMETER	SYMBOL	MIN.	MAX.	UNIT	CONDITIONS.
Drain-Source Breakdown Voltage	$BV_{DSS}$	100		V	$I_D=1mA, V_{GS}=0V$
Gate-Source Threshold Voltage	$V_{GS(th)}$	0.8	2.4	V	$I_D=1mA, V_{DS}=V_{GS}$
Gate-Body Leakage	$I_{GSS}$		100	nA	$V_{GS}=\pm 20V, V_{DS}=0V$
Zero Gate Voltage Drain Current	$I_{DSS}$		10 100	$\mu A$ $\mu A$	$V_{DS}=100V, V_{GS}=0$ $V_{DS}=80V, V_{GS}=0V, T=125^{\circ}C(2)$
On-State Drain Current(1)	$I_{D(on)}$	2.5		A	$V_{DS}=25V, V_{GS}=10V$
Static Drain-Source On-State Resistance (1)	$R_{DS(on)}$		1.5 1.8	$\Omega$	$V_{GS}=10V, I_D=1.5A$ $V_{GS}=5V, I_D=500mA$
Forward Transconductance(1)(2)	$g_{fs}$	250		mS	$V_{DS}=25V, I_D=1.5A$
Input Capacitance (2)	$C_{iss}$		100	pF	$V_{DS}=25V, V_{GS}=0V, f=1MHz$
Common Source Output Capacitance (2)	$C_{oss}$		40	pF	
Reverse Transfer Capacitance (2)	$C_{rss}$		12	pF	
Turn-On Delay Time (2)(3)	$t_{d(on)}$		4	ns	$V_{DD}\approx 25V, I_D=1.5A$
Rise Time (2)(3)	$t_r$		8	ns	
Turn-Off Delay Time (2)(3)	$t_{d(off)}$		20	ns	
Fall Time (2)(3)	$t_f$		30	ns	

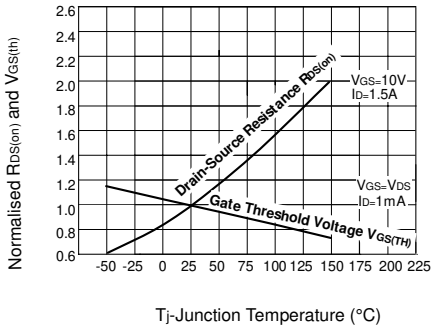
## TYPICAL CHARACTERISTICS



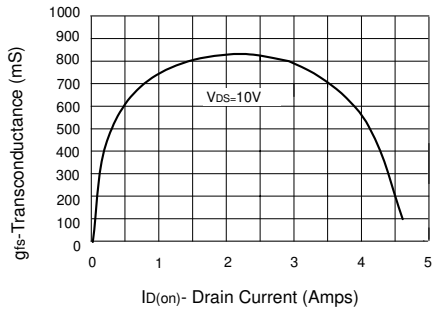
**Saturation Characteristics**



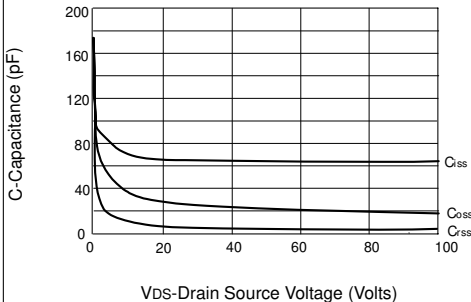
**On-resistance v drain current**



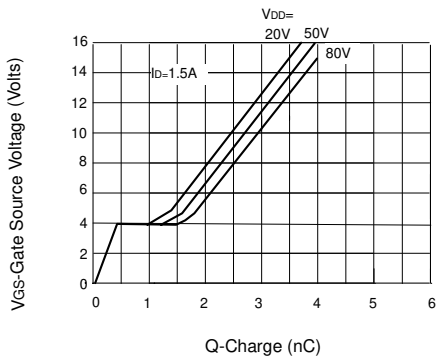
**Normalised  $R_{DS(on)}$  and  $V_{GS(th)}$  v Temperature**



**Transconductance v drain current**



**Capacitance v drain-source voltage**



**Gate charge v gate-source voltage**