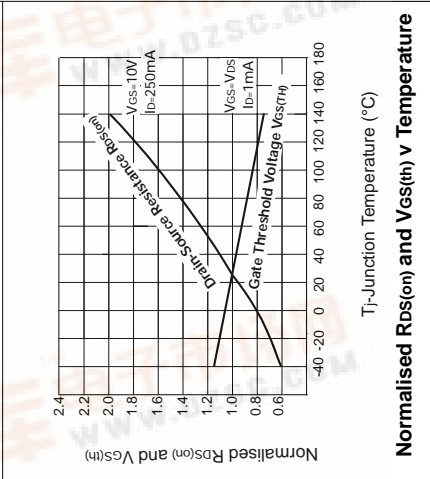
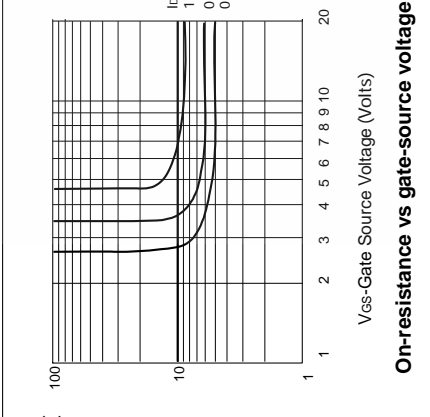
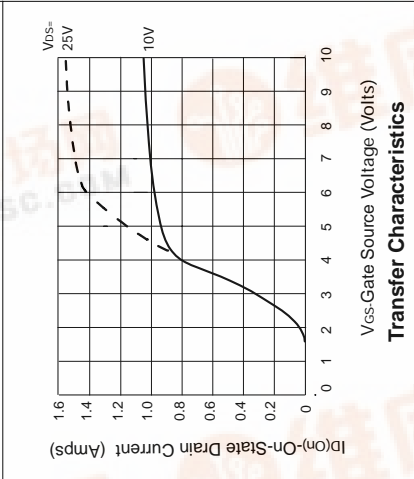
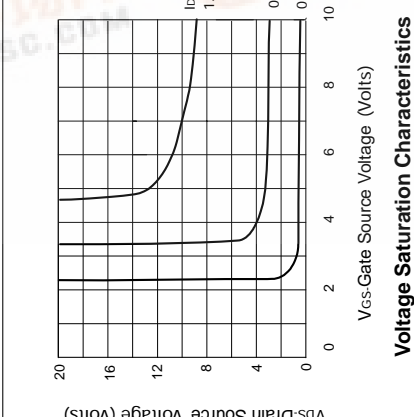
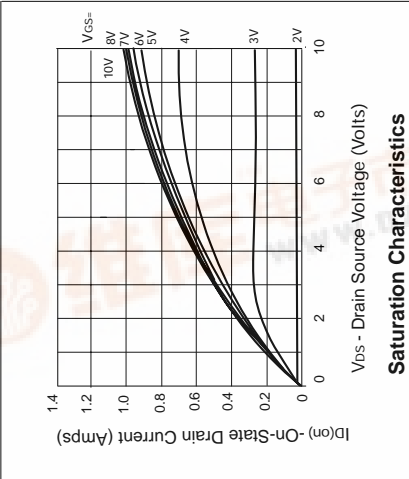
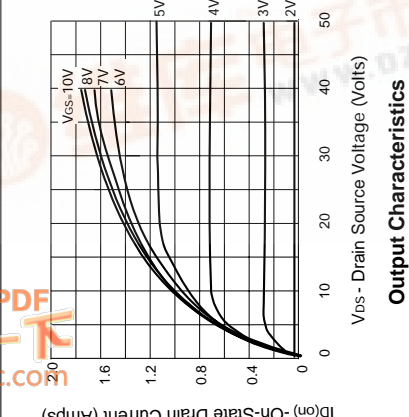




ZVN2120A

TYPICAL CHARACTERISTICS



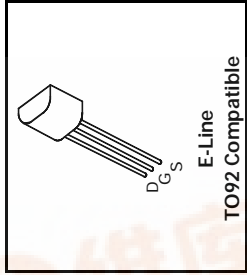
N-CHANNEL ENHANCEMENT MODE VERTICAL DMOS FET

ISSUE 2 – MARCH 94

FEATURES

- * 200 Volt V_{DS}
- * $R_{DS(on)} = 10\Omega$

ZVN2120A



ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Drain-Source Voltage	V_{DS}	200	V
Continuous Drain Current at $T_{amb}=25^\circ\text{C}$	I_D	180	mA
Pulsed Drain Current	I_{DM}	2	A
Gate Source Voltage	V_{GS}	± 20	V
Power Dissipation at $T_{amb}=25^\circ\text{C}$	P_{Tot}	700	mW
Operating and Storage Temperature Range	T_j, T_{stg}	-55 to +150	$^\circ\text{C}$

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

PARAMETER	SYMBOL	MIN.	MAX.	UNIT	CONDITIONS.
Drain-Source Breakdown Voltage	BV_{DSS}	200		V	$I_D = 1\text{mA}, V_{GS} = 0\text{V}$
Gate-Source Threshold Voltage	$V_{GS(th)}$	1	3	V	$I_D = 1\text{mA}, V_{DS} = V_{GS}$
Gate-Body Leakage	I_{GSS}		20	nA	$V_{GS} = \pm 20\text{V}, V_{DS} = 0\text{V}$
Zero Gate Voltage Drain Current	I_{DSS}		10 100	μA μA	$V_{DS} = 200\text{V}, V_{GS} = 0$ $V_{DS} = 160\text{V}, V_{GS} = 0\text{V}, T = 125^\circ\text{C}(2)$
On-State Drain Current(1)	$I_{D(on)}$	500		mA	$V_{DS} = 25\text{V}, V_{GS} = 10\text{V}$
Static Drain-Source On-State Resistance (1)	$R_{DS(on)}$		10	Ω	$V_{GS} = 10\text{V}, I_D = 250\text{mA}$
Forward Transconductance (1)(2)	g_{fs}	100		mS	$V_{DS} = 25\text{V}, I_D = 250\text{mA}$
Input Capacitance (2)	C_{iss}		85	pF	$V_{DS} = 25\text{V}, V_{GS} = 0\text{V}, f = 1\text{MHz}$
Common Source Output Capacitance (2)	C_{oss}		20	pF	
Reverse Transfer Capacitance (2)	C_{rss}		7	pF	
Turn-On Delay Time (2)(3)	$t_{d(on)}$		8	ns	
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		12	ns	

(1) Measured under pulsed conditions. Width=300 μs . Duty cycle $\leq 2\%$
 (2) Sample test.

N-CHANNEL ENHANCEMENT MODE VERTICAL DMOS FET

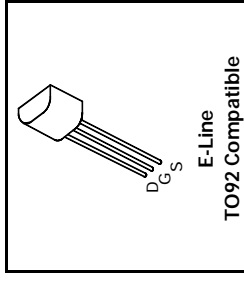
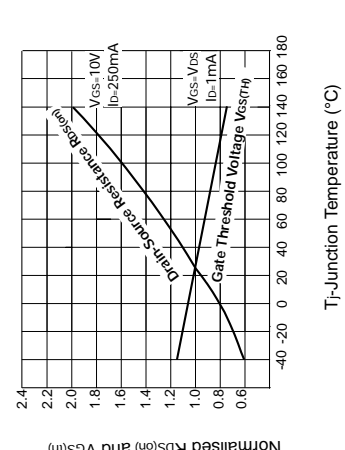
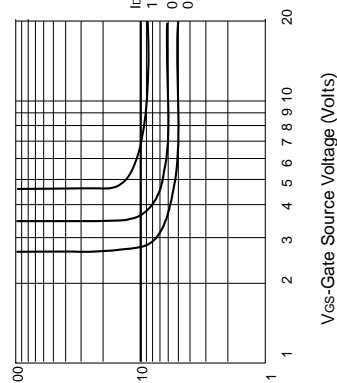
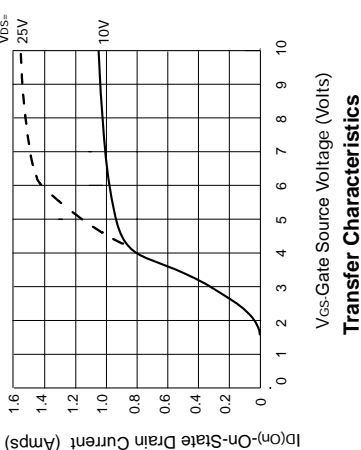
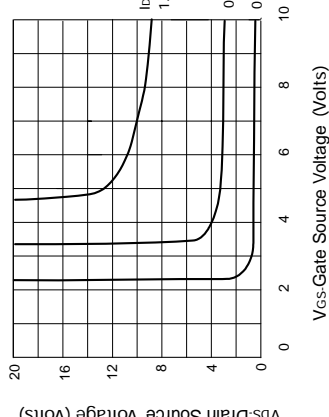
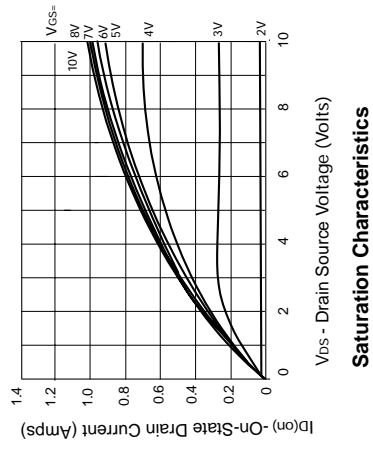
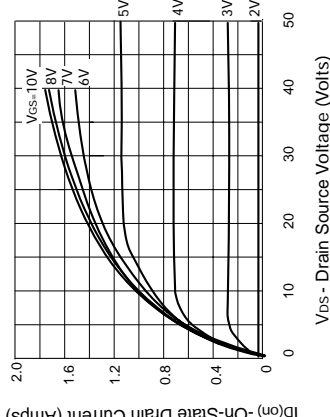
ISSUE 2 – MARCH 94

FEATURES

- * 200 Volt V_{DS}
- * $R_{DS(on)} = 10\Omega$

ZVN2120A

TYPICAL CHARACTERISTICS



ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Drain-Source Voltage	V_{DS}	200	V
Continuous Drain Current at $T_{amb}=25^{\circ}C$	I_D	180	mA
Pulsed Drain Current	I_{DM}	2	A
Gate Source Voltage	V_{GS}	± 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	$^{\circ}C$

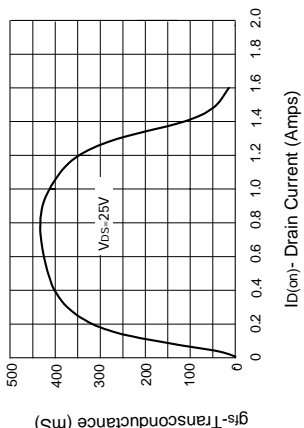
ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}C$ unless otherwise stated).

PARAMETER	SYMBOL	MIN.	MAX.	UNIT	CONDITIONS.
Drain-Source Breakdown Voltage	BV_{DSS}	200		V	$I_D = 1mA, V_{GS} = 0V$
Gate-Source Threshold Voltage	$V_{GS(th)}$	1	3	V	$I_D = 1mA, V_{DS} = V_{GS}$
Gate-Body Leakage	I_{GSS}		20	nA	$V_{GS} = \pm 20V, V_{DS} = 0V$
Zero Gate Voltage Drain Current	I_{DSS}		10 100	μA μA	$V_{DS} = 200V, V_{GS} = 0$ $V_{DS} = 160V, V_{GS} = 0V,$ $T = 125^{\circ}C(2)$
On-State Drain Current(1)	$I_{D(on)}$	500		mA	$V_{DS} = 25V, V_{GS} = 10V$
Static Drain-Source On-State Resistance (1)	$R_{DS(on)}$		10	Ω	$V_{GS} = 10V, I_D = 250mA$
Forward Transconductance (1)(2)	g_{fs}	100		mS	$V_{DS} = 25V, I_D = 250mA$
Input Capacitance (2)	C_{iss}		85	pF	$V_{DS} = 25V, V_{GS} = 0V, f = 1MHz$
Common Source Output Capacitance (2)	C_{oss}		20	pF	
Reverse Transfer Capacitance (2)	C_{rss}		7	pF	
Turn-On Delay Time (2)(3)	$t_{d(on)}$		8	ns	
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		12	ns	

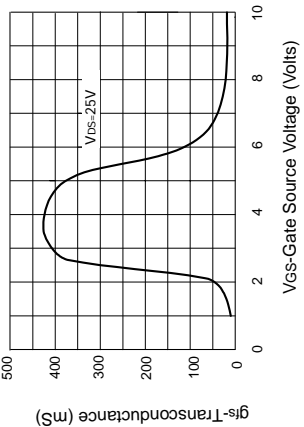
(1) Measured under pulsed conditions. Width=300 μs . Duty cycle $\leq 2\%$
 (2) Sample test.

ZVN2120A

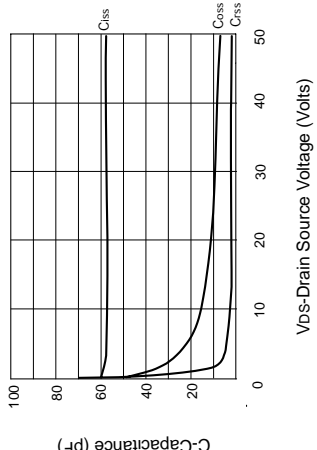
TYPICAL CHARACTERISTICS



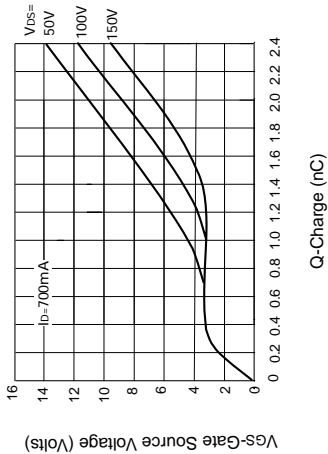
Transconductance v drain current



Transconductance v gate-source voltage



Capacitance v drain-source voltage



Gate charge v gate-source voltage