

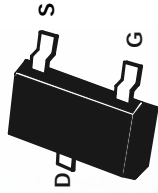
# SOT23 N-CHANNEL ENHANCEMENT MODE VERTICAL DMOS FET

ISSUE 2 - DECEMBER 1995

ZVN4106F

ZVN4106F

PARMARKING DETAIL - MZ



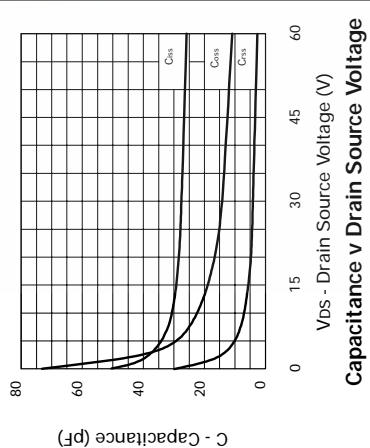
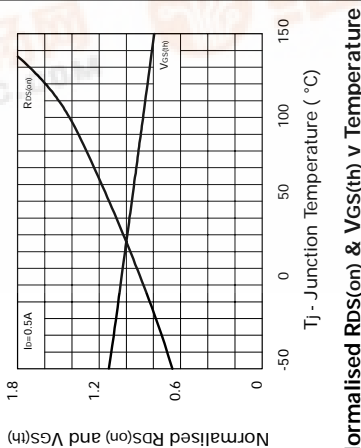
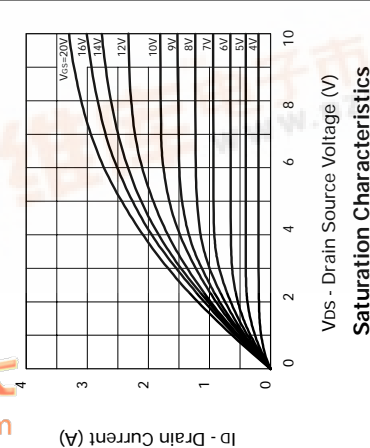
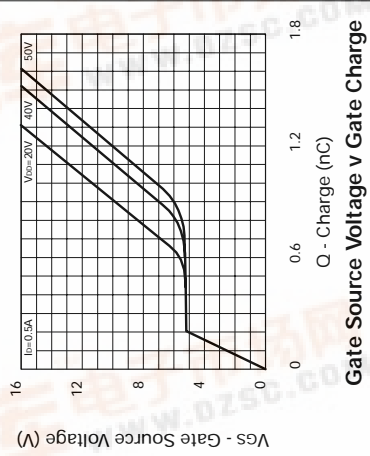
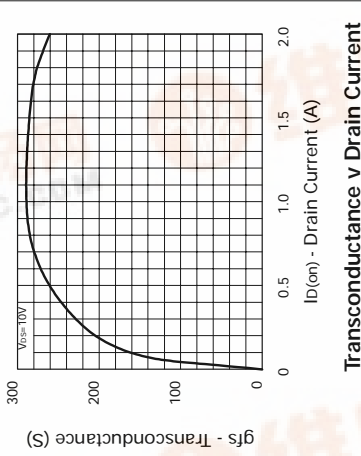
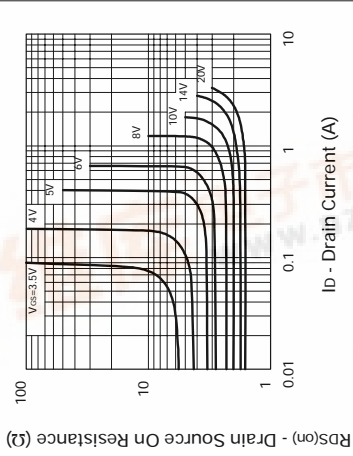
## ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Drain-Source Voltage	$V_{DS}$	60	V
Continuous Drain Current at $T_{amb}=25^{\circ}C$	$I_D$	0.2	A
Pulsed Drain Current	$I_{DM}$	3	A
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Max Power Dissipation at $T_{amb}=25^{\circ}C$	$P_{tot}$	330	mW
Operating and Storage Temperature Range	$T_j, T_{stg}$	-55 to +150	$^{\circ}C$

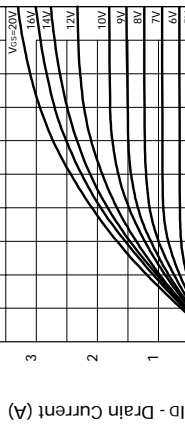
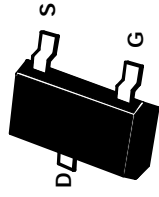
## ELECTRICAL CHARACTERISTICS (at $T_{amb} = 25^{\circ}C$ unless otherwise stated).

PARAMETER	SYMBOL	MIN.	MAX.	UNIT	CONDITIONS.
Drain-Source Breakdown Voltage	$BV_{DSS}$	60		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	$I_{GSS}$		100	nA	$V_{GS}=\pm 20V, V_{DS}=0V$
Zero Gate Voltage Drain Current	$I_{DSS}$		10 50	$\mu A$ $\mu A$	$V_{DS}=60V, V_{GS}=0$ $V_{DS}=48V, V_{GS}=0V, T=125^{\circ}C(2)$
On-State Drain Current(1)	$I_{D(on)}$	1		A	$V_{DS}=25V, V_{GS}=10V$
Static Drain-Source On-State Resistance (1)	$R_{DS(on)}$		2.5 5	$\Omega$ $\Omega$	$V_{GS}=10V, I_D=500mA$ $V_{GS}=5V, I_D=200mA$
Forward Transconductance(1)(2)	$g_{fs}$	150		mS	$V_{DS}=25V, I_D=250mA$
Input Capacitance (2)	$C_{iss}$		35	pF	
Common Source Output Capacitance (2)	$C_{oss}$		25	pF	$V_{DS}=25V, V_{GS}=0V, f=1MHz$
Reverse Transfer Capacitance (2)	$C_{rss}$		8	pF	
Turn-On Delay Time (2)(3)	$T_{d(on)}$		5	ns	
Rise Time (2)(3)	$T_r$		7	ns	
Turn-Off Delay Time (2)(3)	$T_{d(off)}$		6	ns	$V_{DD}=25V, I_D=150mA$
Fall Time (2)(3)	$T_f$		8	ns	

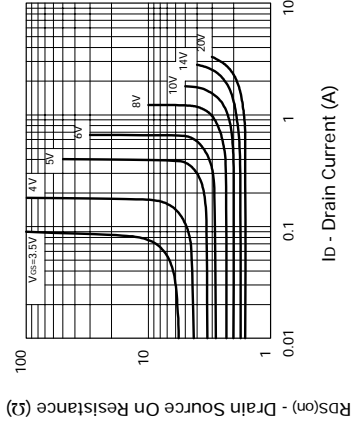
(1) Measured under pulsed conditions. Width=300 $\mu s$ . Duty cycle  $\leq 2\%$ . (2) Sample test.  
(3) Switching times measured with 500 $\Omega$  source impedance and <5ns rise time on a pulse generator. Spice parameter data is available upon request for this device.



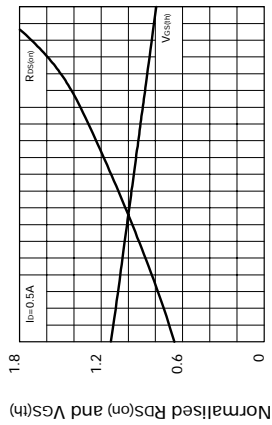
PARMARKING DETAIL - MZ



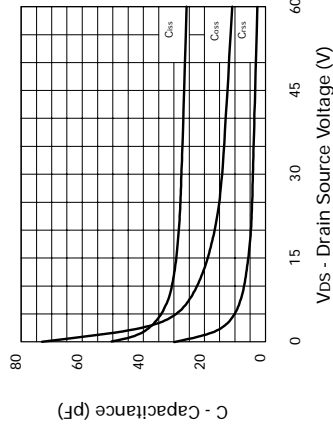
**Saturation Characteristics**



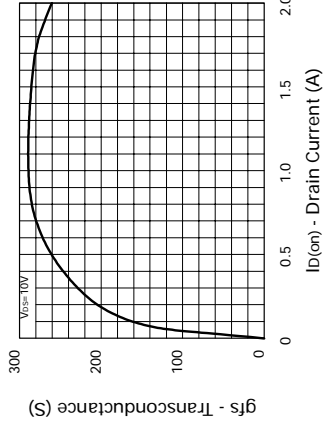
**On-Resistance v Drain Current**



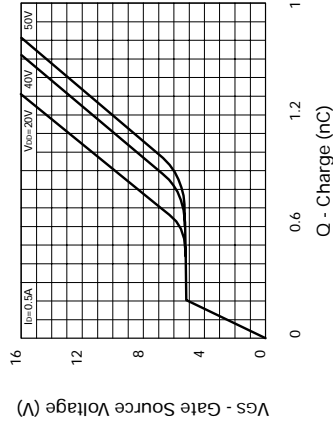
**Normalised RDS(on) & VGS(th) v Temperature**



**Capacitance v Drain Source Voltage**



**Transconductance v Drain Current**



**Gate Source Voltage v Gate Charge**

**ABSOLUTE MAXIMUM RATINGS.**

PARAMETER	SYMBOL	VALUE	UNIT
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Continuous Drain Current at $T_{amb}=25^{\circ}C$	$I_D$	0.2	A
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Forward Transconductance(1)(2)	$g_{fs}$	150		mS	$V_{DS}=25V, I_D=250mA$
Input Capacitance (2)	$C_{iss}$		35	pF	
Common Source Output Capacitance (2)	$C_{oss}$		25	pF	$V_{DS}=25V, V_{GS}=0V, f=1MHz$
Reverse Transfer Capacitance (2)	$C_{rss}$		8	pF	
Turn-On Delay Time (2)(3)	$T_{d(on)}$		5	ns	
Rise Time (2)(3)	$T_r$		7	ns	
Turn-Off Delay Time (2)(3)	$T_{d(off)}$		6	ns	$V_{DD}=25V, I_D=150mA$
Fall Time (2)(3)	$T_f$		8	ns	

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