



**THE DATASHEET OF  
ZVN0124ASTOA**



# ZVN0124A

## N-CHANNEL ENHANCEMENT MODE VERTICAL DMOS FET

ISSUE 1 – MARCH 94

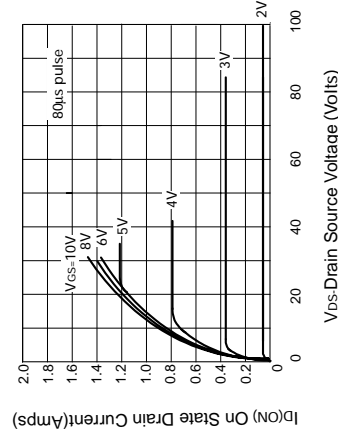
### FEATURES

- \* 240 Volt  $V_{DS}$
- \*  $R_{DS(on)} = 16\Omega$

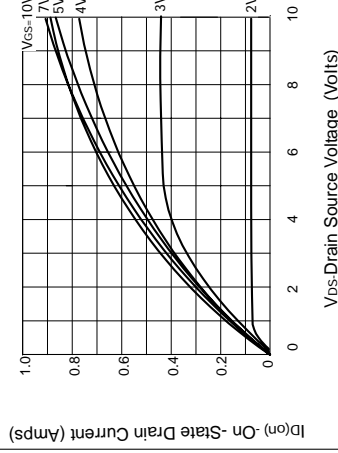
### APPLICATIONS

- \* Telephone handsets

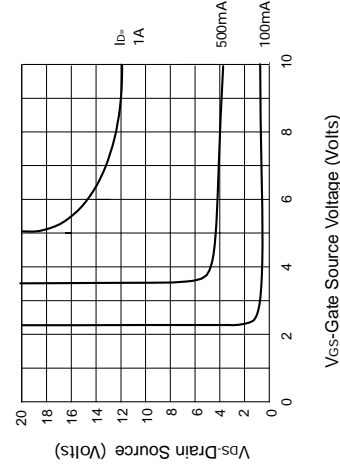
## TYPICAL CHARACTERISTICS



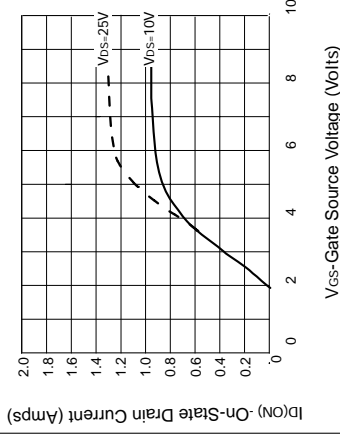
**Output Characteristics**



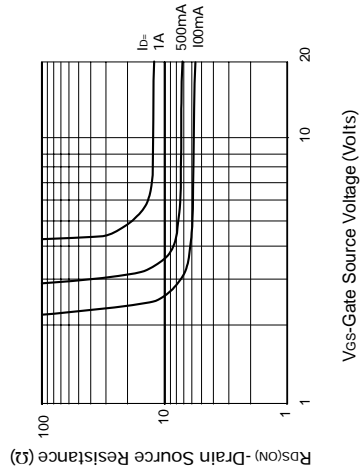
**Saturation Characteristics**



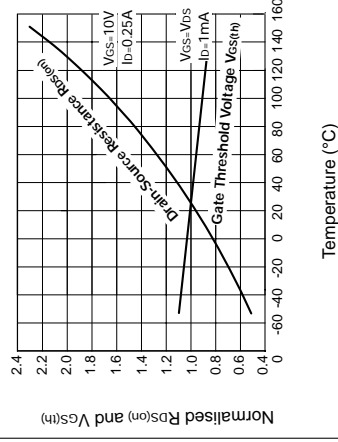
**Voltage Saturation Characteristics**



**Transfer Characteristics**



**On-resistance vs gate-source voltage**



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

### ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL
Drain-Source Voltage	$BV_{DSS}$
Continuous Drain Current at $T_{amb}=25^{\circ}C$	$I_{D(on)}$
Pulsed Drain Current	$R_{DS(on)}$
Gate Source Voltage	$I_{DSS}$
Power Dissipation at $T_{amb}=25^{\circ}C$	$I_{BSS}$
Operating and Storage Temperature Range	$I_{D(on)}$

### ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL
Drain-Source Breakdown Voltage	$BV_{DSS}$
Gate-Source Threshold Voltage	$V_{GS(th)}$
Gate-Body Leakage Current	$I_{GSS}$
Zero Gate Voltage Drain Current	$I_{DSS}$
On-State Drain Current (1)	$I_{D(on)}$
Static Drain-Source On-State Resistance (1)	$R_{DS(on)}$
Forward Transconductance (1)(2)	$g_{fs}$
Input Capacitance (2)	$C_{iss}$
Common Source Output Capacitance (2)	$C_{oss}$
Reverse Transfer Capacitance (2)	$C_{riss}$
Turn-On Delay Time (2)(3)	$t_{d(on)}$
Rise Time (2)(3)	$t_r$
Turn-Off Delay Time (2)(3)	$t_{d(off)}$
Fall Time (2)(3)	$t_f$

(1) Measured under pulsed conditions. With  $V_{GS} = 10V$ ,  $V_{DS} = 25V$ ,  $I_D = 1A$ ,  $t_{pulse} = 100\mu s$ ,  $t_{off} = 10\mu s$ ,  $f = 1kHz$ .  
 (2) Sample test.

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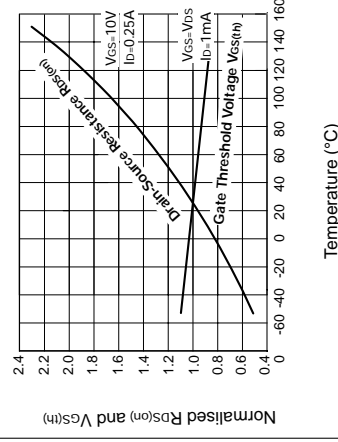
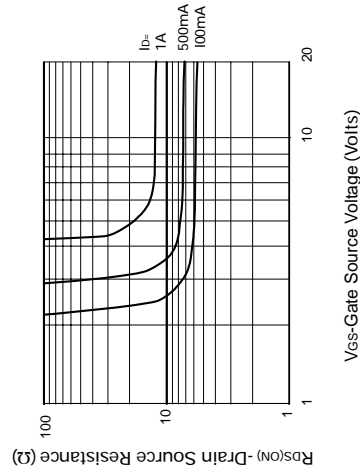
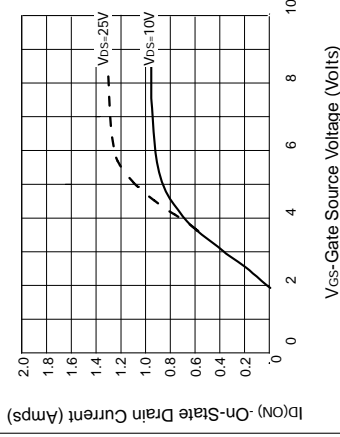
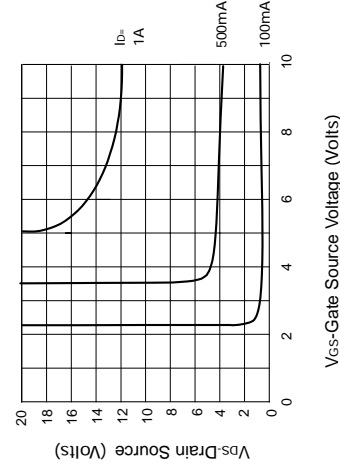
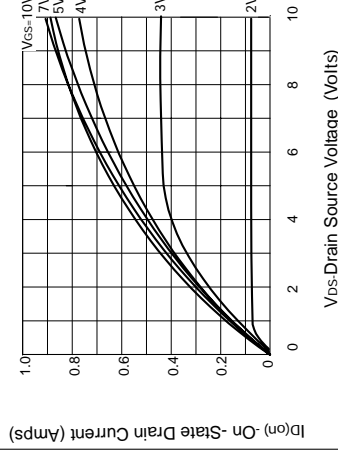
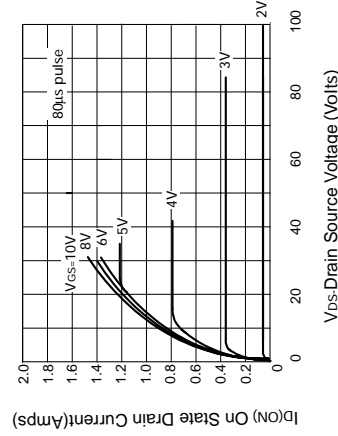
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## TYPICAL CHARACTERISTICS



On-resistance vs gate-source voltage

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

### ABSOLUTE MAXIMUM RATINGS

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Power Dissipation at $T_{amb}=25^{\circ}C$	$I_{D(on)}$
Operating and Storage Temperature Range	$R_{DS(on)}$

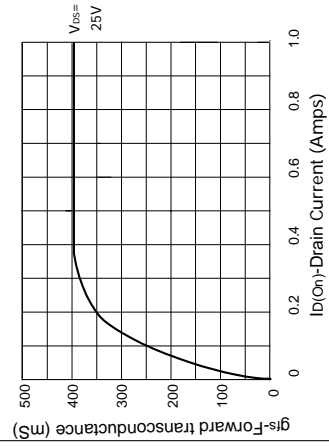
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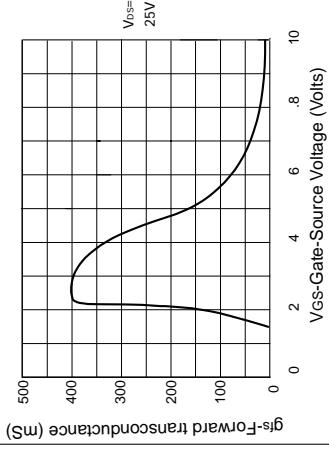
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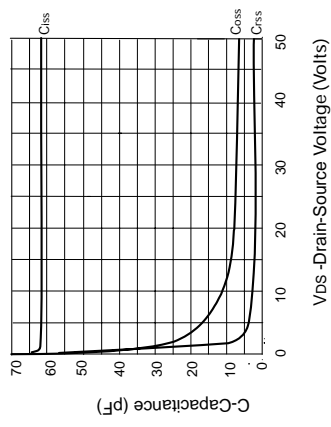
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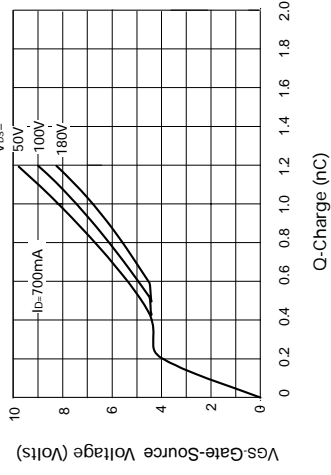
Transconductance v drain current



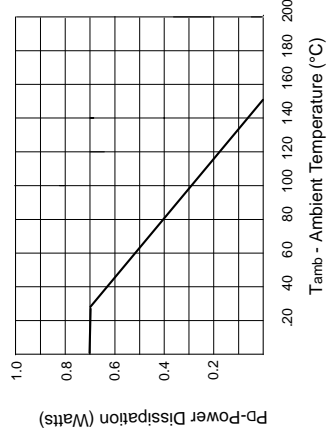
Transconductance v gate-source voltage



Capacitance v drain-source voltage



Gate charge v gate-source voltage



Power v temperature derating curve (ambient)

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