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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!



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# P-CHANNEL ENHANCEMENT MODE VERTICAL DMOS FET

## ZVP4424A

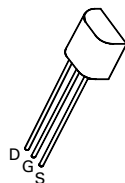
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### FEATURES

- \* 240 Volt  $V_{DS}$
- \*  $R_{DS(on)}=9\Omega$
- \* Low threshold

### APPLICATIONS

- \* Electronic Hook Switch



**E-Line**  
**TO92 Compatible**

### ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Drain-Source Voltage	$V_{DS}$	-240	V
Continuous Drain Current at $T_{amb}=25^{\circ}C$	$I_D$	-200	mA
Pulsed Drain Current	$I_{DM}$	-1	A
Gate Source Voltage	$V_{GS}$	$\pm 40$	V
Power Dissipation at $T_{amb}=25^{\circ}C$	$P_{tot}$	750	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).

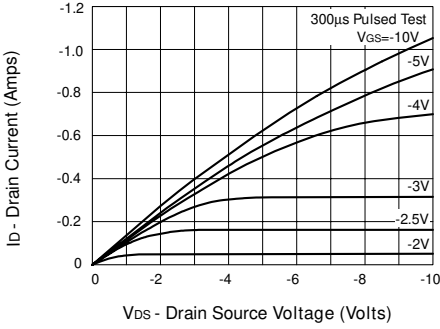
PARAMETER	SYMBOL	MIN.	TYP	MAX.	UNIT	CONDITIONS.
Drain-Source Breakdown Voltage	$BV_{DSS}$	-240			V	$I_D=-1mA, V_{GS}=0V$
Gate-Source Threshold Voltage	$V_{GS(th)}$	-0.7	-1.4	-2.0	V	$I_D=-1mA, V_{DS}=V_{GS}$
Gate-Body Leakage	$I_{GSS}$			100	nA	$V_{GS}=\pm 40V, V_{DS}=0V$
Zero Gate Voltage Drain Current	$I_{DSS}$			-10 -100	$\mu A$ $\mu A$	$V_{DS}=-240V, V_{GS}=0$ $V_{DS}=-190V, V_{GS}=0V, T=125^{\circ}C$
On-State Drain Current	$I_{D(on)}$	-0.75	-1.0		A	$V_{DS}=-10V, V_{GS}=-10V$
Static Drain-Source On-State Resistance	$R_{DS(on)}$		7.1 8.8	9 11	$\Omega$ $\Omega$	$V_{GS}=-10V, I_D=-200mA$ $V_{GS}=-3.5V, I_D=-100mA$
Forward Transconductance (1) (2)	$g_{fs}$	125			mS	$V_{DS}=-10V, I_D=-0.2A$
Input Capacitance (2)	$C_{iss}$		100	200	pF	$V_{DS}=-25V, V_{GS}=0V, f=1MHz$
Common Source Output Capacitance (2)	$C_{oss}$		18	25	pF	
Reverse Transfer Capacitance (2)	$C_{rss}$		5	15	pF	
Turn-On Delay Time (2)(3)	$t_{d(on)}$		8	15	ns	$V_{DD} \approx -50V, I_D = -0.25A,$ $V_{GEN} = -10V$
Rise Time (2)(3)	$t_r$		8	15	ns	
Turn-Off Delay Time (2)(3)	$t_{d(off)}$		26	40	ns	
Fall Time (2)(3)	$t_f$		20	30	ns	

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

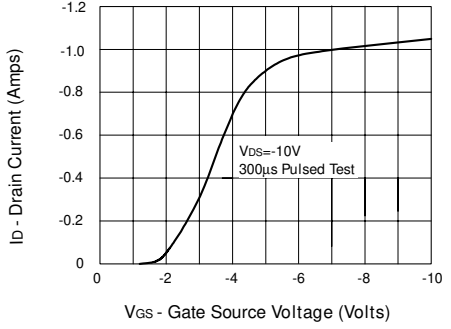
(3) Switching times measured with 50 $\Omega$  source impedance and <5ns rise time on a pulse generator

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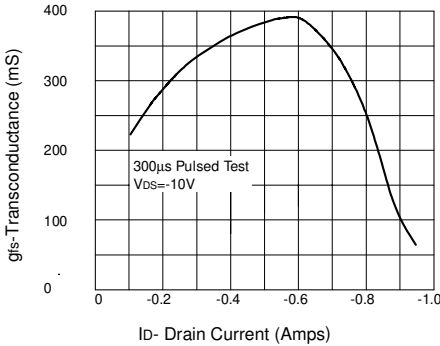
## TYPICAL CHARACTERISTICS



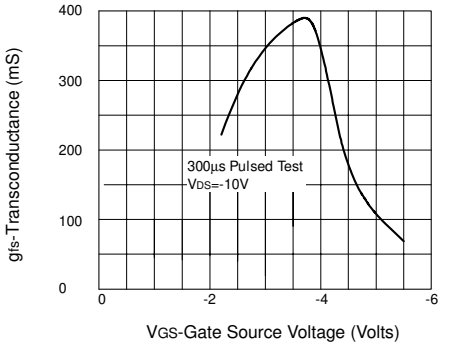
**Saturation Characteristics**



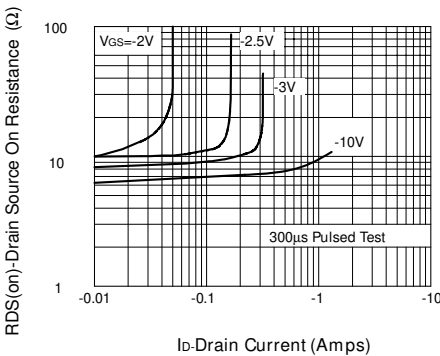
**Transfer Characteristics**



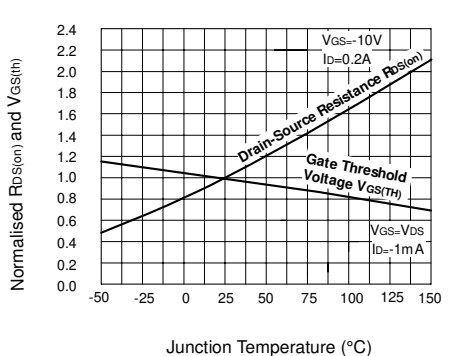
**Transconductance v drain current**



**Transconductance v gate-source voltage**



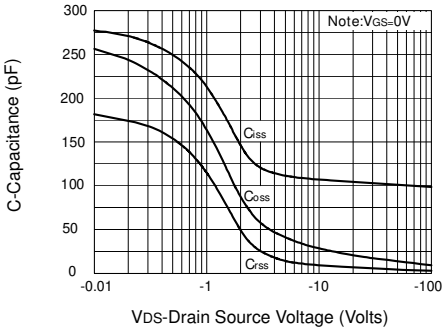
**On-resistance vs Drain Current**



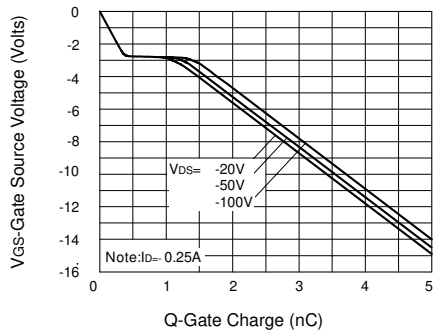
**Normalised R<sub>DS(on)</sub> and V<sub>GS(th)</sub> vs Temperature**

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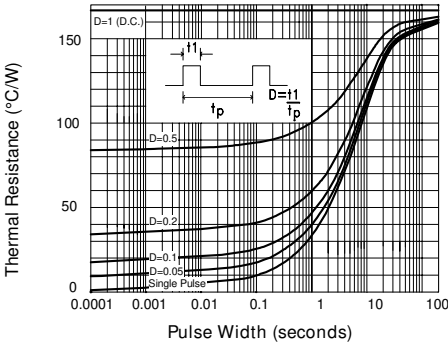
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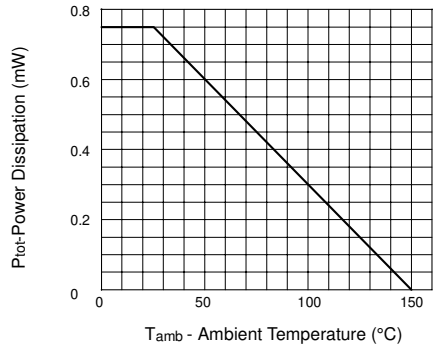
**Capacitance v drain-source voltage**



**Gate charge v gate-source voltage**



**Maximum transient thermal impedance**



**Derating Curve**