

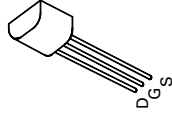
# P-CHANNEL ENHANCEMENT MODE VERTICAL DMOS FET

ISSUE 2 – MARCH 94

## FEATURES

- \* 450 Volt  $V_{DS}$
- \*  $R_{DS(on)} = 150\Omega$

# ZVP0545A



E-Line  
TO92 Compatible

## ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Drain-Source Voltage	$V_{DS}$	-450	V
Continuous Drain Current at $T_{amb}=25^{\circ}\text{C}$	$I_D$	-45	mA
Pulsed Drain Current	$I_{DM}$	-400	mA
Gate Source Voltage	$V_{GS}$	$\pm 20$	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	$BV_{DSS}$	-450		V	$I_D = -1\text{mA}, V_{GS} = 0\text{V}$
Gate-Source Threshold Voltage	$V_{GS(th)}$	-1.5	-4.5	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	$I_{DSS}$		-20 -2	$\mu\text{A}$ mA	$V_{DS} = -450\text{V}, V_{GS} = 0\text{V}$ $V_{DS} = -360\text{V}, V_{GS} = 0\text{V}, T = 125^{\circ}\text{C}(2)$
On-State Drain Current(1)	$I_{D(on)}$	-100		mA	$V_{DS} = -25\text{V}, V_{GS} = -10\text{V}$
Static Drain-Source On-State Resistance (1)	$R_{DS(on)}$		150	$\Omega$	$V_{GS} = -10\text{V}, I_D = -50\text{mA}$
Forward Transconductance (1)(2)	$g_{fs}$	40		mS	$V_{DS} = -25\text{V}, I_D = -50\text{mA}$
Input Capacitance (2)	$C_{iss}$		120	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)	$C_{rss}$		5	pF	
Turn-On Delay Time (2)(3)	$t_{d(on)}$		10	ns	
Rise Time (2)(3)	$t_r$		15	ns	$V_{DD} = -25\text{V}, I_D = -50\text{mA}$
Turn-Off Delay Time (2)(3)	$t_{d(off)}$		15	ns	
Fall Time (2)(3)	$t_f$		20	ns	

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

(2) Sample test.