

P-CHANNEL ENHANCEMENT MODE VERTICAL DMOS FET

ZVP4105A

ISSUE 2 – MARCH 94

FEATURES

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



E-Line
TO92 Compatible

ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	VALUE	UNIT
Drain-Source Voltage	V_{DS}	-50	V
Continuous Drain Current at $T_{amb}=25^{\circ}C$	I_D	-175	mA
Pulsed Drain Current	I_{DM}	-520	mA
Gate Source Voltage	V_{GS}	± 20	V
Power Dissipation at $T_{amb}=25^{\circ}C$	P_{tot}	625	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}	-50		V	$I_D=-0.25mA, V_{GS}=0V$
Gate-Source Threshold Voltage	$V_{GS(th)}$	-0.8	-2.0	V	$I_D=-1mA, V_{DS}=V_{GS}$
Gate-Body Leakage	I_{GSS}		10	nA	$V_{GS}=\pm 20V, V_{DS}=0V$
Zero Gate Voltage Drain Current	I_{DSS}		-15 -60 -100	μA μA nA	$V_{DS}=-50V, V_{GS}=0V$ $V_{DS}=-50V, V_{GS}=0V, T=125^{\circ}C(2)$ $V_{DS}=-25V, V_{GS}=0V$
Static Drain-Source On-State Resistance (1)	$R_{DS(on)}$		10	Ω	$V_{GS}=-5V, I_D=-100mA$
Forward Transconductance (1)(2)	g_{fs}	50		mS	$V_{DS}=-25V, I_D=-100mA$
Input Capacitance (2)(4)	C_{iss}		40	pF	$V_{DS}=-25V, V_{GS}=0V, f=1MHz$
Common Source Output Capacitance (2)(4)	C_{oss}		15	pF	
Reverse Transfer Capacitance (2)(4)	C_{rss}		6	pF	
Turn-On Delay Time (2)(3)(4)	$t_{d(on)}$		10	ns	$V_{DD}\approx -30V, I_D=-270mA$
Rise Time (2)(3)(4)	t_r		10	ns	
Turn-Off Delay Time (2)(3)(4)	$t_{d(off)}$		18	ns	
Fall Time (2)(3)(4)	t_f		25	ns	

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

(2) Sample test.

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