

VP2410 SERIES

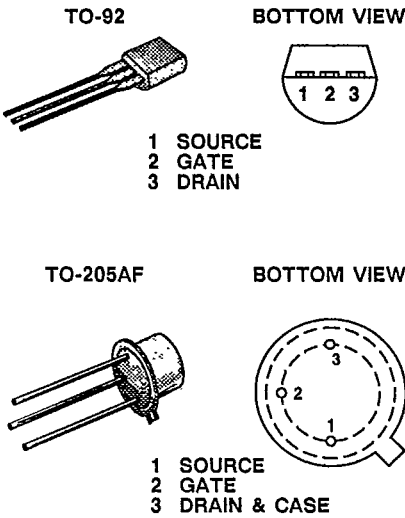
P-Channel Enhancement-Mode MOS Transistors



PRODUCT SUMMARY

PART NUMBER	V _{(BR)DSS} (V)	r _{DS(ON)} (Ω)	I _D (A)	PACKAGE
VP2410L	-240	10	-0.18	TO-92
VP2410B	-240	10	-0.17	TO-205AF

Performance Curves: VPDV24 (See Section 7)



ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	VP2410L	VP2410B	UNITS
Drain-Source Voltage		V _{DS}	-240	-240	V
Gate-Source Voltage		V _{GS}	±30	±20	
Continuous Drain Current	T _A = 25°C	I _D	-0.18	-0.17	A
	T _A = 100°C		-0.11	-0.10	
Pulsed Drain Current ¹		I _{DM}	-0.72	-0.70	
Power Dissipation	T _A = 25°C	P _D	0.80	0.73	W
	T _A = 100°C		0.32	0.22	
Operating Junction and Storage Temperature		T _J , T _{stg}	-55 to 150		°C
Lead Temperature (1/16" from case for 10 seconds)		T _L	300		

THERMAL RESISTANCE

THERMAL RESISTANCE	SYMBOL	VP2410L	VP2410B	UNITS
Junction-to-Ambient	R _{thJA}	156	170	°C/W

¹Pulse width limited by maximum junction temperature



VP2410 SERIES

ELECTRICAL CHARACTERISTICS¹

T-37-25

LIMITS

		LIMITS				
PARAMETER	SYMBOL	TEST CONDITIONS	TYP ²	VP2410		UNIT
				MIN	MAX	
STATIC						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} = 0 V, I _D = -5 μA	-255	-240		V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = -2.5 mA	-2.25	-0.8	-2.5	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V V _{GS} = ± 20 V T _J = 125°C	± 1 ± 5		± 10 ± 50	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = -180 V V _{GS} = 0 V T _J = 125°C	-0.001 -0.40		-1.0 -100	μA
On-State Drain Current ³	I _{D(ON)}	V _{DS} = -10 V, V _{GS} = -4.5 V	-300	-150		mA
Drain-Source On-Resistance ³	r _{DS(ON)}	V _{GS} = -10 V, I _D = -100 mA	7			Ω
		V _{GS} = -4.5 V I _D = -100 mA	8.5		10	
		T _J = 125°C	15.5		20	
Forward Transconductance ³	g _{FS}	V _{DS} = -10 V, I _D = -100 mA	175	125		mS
Common Source Output Conductance ³	g _{OS}	V _{DS} = -10 V, I _D = -50 mA	125			
DYNAMIC						
Input Capacitance	C _{iss}	V _{DS} = -25 V V _{GS} = 0 V f = 1 MHz	65		95	pF
Output Capacitance	C _{oss}		20		30	
Reverse Transfer Capacitance	C _{rss}		8		15	
SWITCHING						
Turn-On Time	t _{d(ON)}	V _{DD} = -25 V, R _L = 250 Ω I _D = -100 mA, V _{GEN} = -10 V R _G = 25 Ω (Switching time is essentially independent of operating temperature)	7		15	ns
	t _r		18		30	
Turn-Off Time	t _{d(OFF)}		45		70	
	t _f		45		60	

NOTES: 1. $T_A = 25^\circ\text{C}$ unless otherwise noted.

2. For design aid only, not subject to production testing.

3. Pulse test; $PW = 300\text{ }\mu\text{s}$, duty cycle $\leq 2\%$.