

TP2010L, TP2410L

P-Channel Enhancement-Mode MOS Transistors



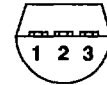
PRODUCT SUMMARY

PART NUMBER	$V_{(BR)DSS}$ (V)	$r_{DS(ON)}$ (Ω)	I_D (A)
TP2010L	-200	10	-0.18
TP2410L	-240	10	-0.18

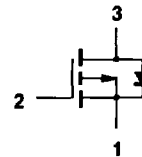
Performance Curves: VPDV24

TO-92 (TO-226AA)

BOTTOM VIEW



- 1 SOURCE
- 2 GATE
- 3 DRAIN



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS	SYMBOL	LIMITS		UNITS
		TP2010L	TP2410L	
Drain-Source Voltage	V_{DS}	-200	-240	V
Gate-Source Voltage	V_{GS}	± 20	± 20	
Continuous Drain Current	I_D	$T_A = 25^\circ\text{C}$	-0.18	A
		$T_A = 100^\circ\text{C}$	-0.11	
Pulsed Drain Current ¹	I_{DM}	-0.72	-0.72	
Maximum Power Dissipation	P_D	$T_A = 25^\circ\text{C}$	0.80	W
		$T_A = 100^\circ\text{C}$	0.32	
Operating Junction & Storage Temperature Range	T_J, T_{stg}	-55 to 150		$^\circ\text{C}$
Lead Temperature (¹ / ₁₆ " from case for 10 sec.)	T_L	300		

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	LIMITS	UNITS
Junction-to-Ambient	R_{thJA}	156	K/W

¹Pulse width limited by maximum junction temperature.

SPECIFICATIONS ^a				LIMITS			
PARAMETER	SYMBOL	TEST CONDITIONS	TYP ^b	MIN	MAX	UNIT	
STATIC							
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{ V}$ $I_D = -10\ \mu\text{A}$	TP2010L	-220	-200	V	
			TP2410L	-255	-240		
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = -1\text{ mA}$	-1.9	-1	-2.4		
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\text{ V}, V_{GS} = \pm 20\text{ V}$ $T_J = 125^\circ\text{C}$			± 10	nA	
					± 50		
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 0.8 \times V_{(BR)DSS}, V_{GS} = 0\text{ V}$ $T_J = 125^\circ\text{C}$			-1	μA	
					-100		
On-State Drain Current ^c	$I_{D(ON)}$	$V_{DS} = -10\text{ V}, V_{GS} = -4.5\text{ V}$	-300	-100		mA	
Drain-Source On-Resistance ^c	$r_{DS(ON)}$	$V_{GS} = -4.5\text{ V}, I_D = -100\text{ mA}$ $T_J = 125^\circ\text{C}$	8.5		10	Ω	
			15.5		20		
Forward Transconductance ^c	g_{FS}	$V_{DS} = -10\text{ V}, I_D = -100\text{ mA}$	175	125		mS	
DYNAMIC							
Input Capacitance	C_{iss}	$V_{GS} = 0\text{ V}, V_{DS} = -25\text{ V}, f = 1\text{ MHz}$	90		110	pF	
Output Capacitance	C_{oss}		30		50		
Reverse Transfer Capacitance	C_{rss}		10		15		
SWITCHING							
Turn-On Time	t_{ON}	$V_{DD} = -25\text{ V}, R_L = 250\ \Omega, I_D = -100\text{ mA}$ $V_{GEN} = -10\text{ V}, R_G = 25\ \Omega$ (Switching time is essentially independent of operating temperature)	25		45	ns	
Turn-Off Time	t_{OFF}		90		130		

NOTES:

- a. $T_A = 25^\circ\text{C}$ unless otherwise noted.
- b. For design aid only, not subject to production testing.
- c. Pulse test: Pulse Width $\leq 300\ \mu\text{sec}$, Duty Cycle $\leq 2\%$.