

ND2410 SERIES

N-Channel Depletion-Mode MOS Transistors

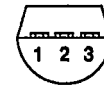
Siliconix
incorporated

T-27-25

TO-92



BOTTOM VIEW

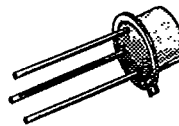


- 1 SOURCE
- 2 GATE
- 3 DRAIN

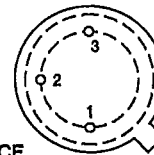
PRODUCT SUMMARY

PART NUMBER	$V_{(BR)DSV}$ (V)	$r_{DS(ON)}$ (Ω)	I_D (A)	PACKAGE
ND2410L	240	10	0.18	TO-92
ND2410B	240	10	0.46	TO-205AF

TO-205AF



BOTTOM VIEW



- 1 SOURCE
- 2 GATE
- 3 DRAIN & CASE

Performance Curves: VDDV24 (See Section 7)

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	ND2410L	ND2410B ²	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	0.46	A
	T _A = 100°C		0.12	0.29	
Pulsed Drain Current ¹		I _{DM}	0.90	1	
Power Dissipation	T _A = 25°C	P _D	0.80	5	W
	T _A = 100°C		0.32	2	
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	ND2410L	ND2410B	UNITS
Junction-to-Ambient	R_{thJA}	156	125	$^\circ\text{C/W}$

¹Pulse width limited by maximum junction temperature²Reference case for all temperature testing



T-27-25

ND2410 SERIES

ELECTRICAL CHARACTERISTICS ¹				LIMITS					
PARAMETER	SYMBOL	TEST CONDITIONS	TYP ²	ND2410L		ND2410B		UNIT	
				MIN	MAX	MIN	MAX		
STATIC									
Drain-Source Breakdown Voltage	V _{(BR)DSV}	V _{GS} = -5 V, I _D = 1 μA	260	240		240		V	
Gate-Source Cutoff Voltage	V _{GS(OFF)}	V _{DS} = 5 V, I _D = 10 μA	-1.7	-0.5	-2.5	-0.5	-2.5		
Gate-Body Leakage	I _{GSS}	V _{DS} = 0 V V _{GS} = ±20 V T _J = 125°C	±0.1 ±5		±10 ±50		±10 ±50	nA	
Drain Cutoff Current	I _{D(OFF)}	V _{DS} = 180 V V _{GS} = -5 V T _J = 125°C	0.04 7.5		1 200		1 200	μA	
Drain Saturation Current ³	I _{DSS}	V _{DS} = 10 V, V _{GS} = 0 V	120	40		40		mA	
Drain-Source On-Resistance ³	r _{DS(ON)}	V _{GS} = 2 V, I _D = 30 mA	4.5					Ω	
		V _{GS} = 0 V I _D = 30 mA T _J = 125°C	5 10		10 25		20 25		
Forward Transconductance ³	g _{FS}	V _{DS} = 10 V, I _D = 30 mA	110					mS	
Common Source Output Conductance ³	g _{OS}		70					μS	
DYNAMIC									
Input Capacitance	C _{iss}	V _{DS} = 25 V V _{GS} = -5 V f = 1 MHz	70		120		120	pF	
Output Capacitance	C _{oss}		20		30		30		
Reverse Transfer Capacitance	C _{rss}		10		15		15		
SWITCHING									
Turn-On Time	t _{d(ON)}	V _{DD} = 25 V, R _L = 830 Ω I _D = 30 mA, V _{GEN} = -5 V R _G = 25 Ω	15					ns	
	t _r		75						
Turn-Off Time	t _{d(OFF)}	(Switching time is essentially independent of operating temperature)	40						
	t _f		100						

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- NOTES: 1. $T_A = 25^\circ\text{C}$ unless otherwise noted, $T_C = 25^\circ\text{C}$ for ND2410B.
 2. For design aid only, not subject to production testing.
 3. Pulse test; $PW = 300\text{ }\mu\text{s}$, duty cycle $\leq 2\%$.