

P-CHANNEL ENHANCEMENT MODE D-MOS FETs 8-CHANNEL ARRAYS

ORDERING INFORMATION

18 Pin Plastic DIP	AP0120NA	AP0130NA	AP0140NA
Description (each channel)	-200V, 600 Ω	-300V, 600 Ω	-400V, 700 Ω

FEATURES

- Ultra-Low Channel OFF Leakage, <-800pA
- High Channel-to-Channel Isolation
- N-Channel Complements available
- Industry Standard Pin-Out

ABSOLUTE MAXIMUM RATINGS ($T_A = +25^\circ\text{C}$ per channel, unless otherwise specified)

Drain-Source Voltage

AP0120N	-200V
AP0130N	-300V
AP0140N	-400V

Drain-Gate Voltage ($V_{GS} = 0$)

AP0120N	-200V
AP0130N	-300V
AP0140N	-400V

Channel-to-Channel Isolation Voltage

Drain-to-Drain Voltage ($V_{GS} = 0$)

AP0120N	-200V
AP0130N	-300V
AP0140N	-400V

Gate-Source Voltage

Operating and Storage Temperature $\pm 40^\circ\text{C}$

Range

-55 to $+85^\circ\text{C}$

Lead Temperature (1/16" from mounting)

Surface for 10 sec.) $+300^\circ\text{C}$

APPLICATIONS

- Electrostatic Array Drivers
- Electroluminescent Panel Drivers
- Converters
- Multi-Channel Array Drivers

Continuous Drain Current, Total Package

	$T_A = +25^\circ\text{C}$	$T_C = +25^\circ\text{C}$
AP0120N, AP0130N	-25mA	-40mA
AP0140N	-20mA	-35mA

Continuous Drain Current, Single Channel

	$T_A = +25^\circ\text{C}$	$T_C = +25^\circ\text{C}$
AP0120N, AP0130N,		
AP0140N	-15mA	-25mA

Continuous Device Dissipation

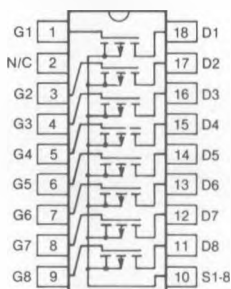
	$T_A = +25^\circ\text{C}$	$T_C = +25^\circ\text{C}$
Total Package	.64W	2.0W
Single Channel	30W	1.0W

Linear Derating Factor

	$T_A = +25^\circ\text{C}$	$T_C = +25^\circ\text{C}$
Total Package	10.67mW/ $^\circ\text{C}$	33.2mW/ $^\circ\text{C}$
Single Channel	5mW/ $^\circ\text{C}$	16.6mW/ $^\circ\text{C}$

PIN CONFIGURATION & SCHEMATIC DIAGRAM

TOP VIEW



PACKAGE DIMENSIONS

18-Pin Plastic DIP

(See Package 11)

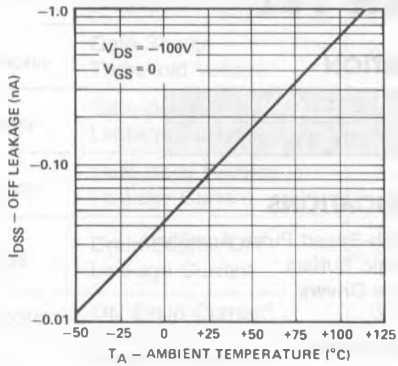
ELECTRICAL CHARACTERISTICS ($T_A = +25^\circ\text{C}$ per channel unless otherwise noted)

#	CHARACTERISTIC			MIN	TYP	MAX	UNIT	TEST CONDITIONS
1	STATIC	BV _{DSS} Drain-Source Breakdown Voltage	AP0120N	-200			V	I _O = -100 μ A, V _{GS} = 0
2			AP0130N	-300				
3			AP0140N	-400				
4		I _{oss} Drain-Source OFF Leakage Current				-5.0	nA	V _{DS} = -100V, V _{GS} = 0 (NOTE 1)
5		I _{obs} Gate-Body Leakage Current				± 10	nA	V _{GS} = ± 20 V, V _{DS} = 0
6						± 1.0	μ A	V _{GS} = ± 40 V, V _{DS} = 0
7		V _{GS(th)} Gate-Source Threshold Voltage		-2.0		-5.0	V	V _{DS} = V _{GS} , I _D = -0.5mA
8		r _{DS(on)} Drain-Source ON Resistance	AP0120N, AP0130N			600	ohms	I _D = -10mA, V _{GS} = -10V
9			AP0140N			700		
10		I _{D(on)} Drain-Source ON Current		-15			mA	V _{DS} = -25V, V _{GS} = -10V
11	DYNAMIC	g _{fs} Common-Source Forward Transconductance		3.0			mmhos	V _{DS} = -25V, I _D = -5mA f = 1KHz
12		C _{iss} Common-Source Input Capacitance			8.0	10	pF	V _{DS} = -25V, V _{GS} = 0, f = 1MHz
13		C _{OSS} Common-Source Output Capacitance			1.5	2.0		
14		Common-Source Reverse Transfer Capacitance			0.8	1.0		
15		t _{d(on)} Turn-ON Delay Time			6		nS	V _{DD} = -25V, V _{GS(on)} = -10V R _L = 500 Ω R _G = 51 Ω
16		t _r Rise time			6			
17		t _{d(off)} Turn-OFF Delay Time			8			
18		t _f Fall Time			6			

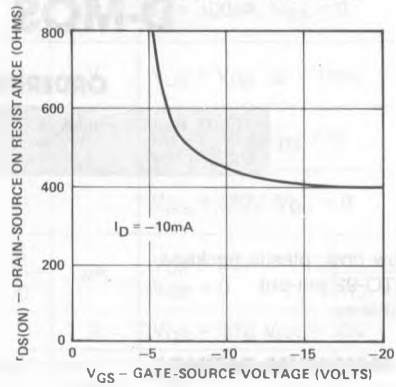
Note 1: Limit is OFF leakage of all 8 segments in parallel.

TYPICAL PERFORMANCE CHARACTERISTICS ($T_A = +25^\circ\text{C}$, per channel, unless otherwise specified)

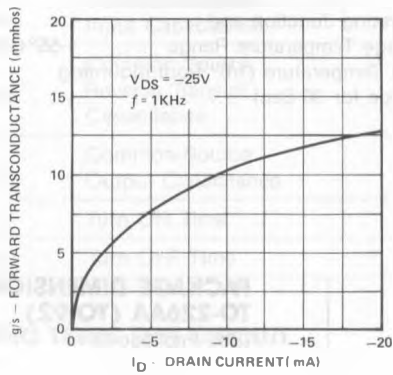
DRAIN-SOURCE OFF LEAKAGE
—vs—
AMBIENT TEMPERATURE



DRAIN-SOURCE ON RESISTANCE
—vs—
GATE-SOURCE VOLTAGE



FORWARD TRANSCONDUCTANCE
—vs—
ON DRAIN CURRENT



ON DRAIN CURRENT
—vs—
GATE-SOURCE VOLTAGE

