

TOPAZ

SEMICONDUCTOR

T-43-25
SD5200

N-CHANNEL ENHANCEMENT-MODE QUAD D-MOS FET DRIVER ARRAY

ORDERING INFORMATION

Sorted Chips in Waffle Pack	SD5200CHP
16-Pin Plastic Dual In-Line Package	SD5200N
Description	30V, 80 ohm

FEATURES

- Normally OFF configuration
- Low Interelectrode capacitance
- High-speed switching

APPLICATIONS

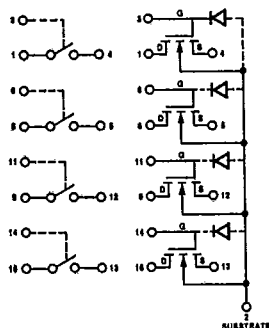
- +30V Analog Switch Drivers
- Wide-Band Dual Differential Amplifiers

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

V_{DS} Drain-Source Voltage +30Vdc
 V_{SD} Source-Drain Voltage +0.5Vdc
 V_{DB} Drain-Body Voltage +30Vdc
 V_{SB} Source-Body Voltage +15Vdc
 V_{GS} Gate-Source Voltage +25Vdc
 V_{GB} Gate-Body Voltage +25Vdc
 Gate-Body Voltage -0.3Vdc
 V_{GD} Gate-Drain Voltage +25Vdc
 I_D Continuous Drain Current 50mA

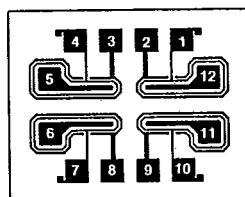
P_D Total Package Power Dissipation
 (at or below $T_A = +25^\circ\text{C}$) 640mW
 Linear Derating Factor 10.7mW/ $^\circ\text{C}$
 P_D Single Device Power Dissipation
 (at or below $T_A = +25^\circ\text{C}$) 300mW
 Linear Derating Factor 5.0mW/ $^\circ\text{C}$
 T_J Operating Junction Temperature
 Range -55 to +85 $^\circ\text{C}$
 T_S Storage Temperature Range .. -55 to +150 $^\circ\text{C}$

SCHEMATIC DIAGRAM



Note: Pin numbers correspond to
Package Pin-out

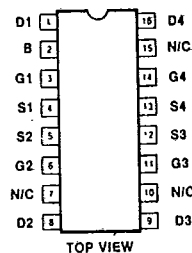
CHIP CONFIGURATION



PAD NO.	PAD FUNCTION	PAD NO.	PAD FUNCTION
1	Gate No. 1	7	Gate No. 3
2	Source No. 1	8	Source No. 3
3	Source No. 2	9	Source No. 4
4	Gate No. 2	10	Gate No. 4
5	Drain No. 2	11	Drain No. 4
6	Drain No. 3	12	Drain No. 1

Dimensions: .041 x .033 x .013 inches

PIN CONFIGURATION



DIMENSIONS
16-Pin Plastic DIP
See Package 10

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 T-43-25-
SD5200
ELECTRICAL CHARACTERISTICS ($T_A = +25^\circ\text{C}$ unless otherwise noted)

#	CHARACTERISTIC		SD5200			UNITS	TEST CONDITIONS
			MIN	TYP	MAX		
1	STATIC	BV_{DS} Drain-Source Breakdown Voltage	30	35		V	$I_D = 10\mu\text{A}, V_{GS} = V_{BS} = 0$
2		BV_{SB} Source-Substrate Breakdown Voltage	15			V	$I_S = 10\mu\text{A}, V_{GB} = 0$ Drain Open
3		I_{GBS} Gate-Body Leakage Current			1.0	μA	$V_{GB} = 25\text{V}, V_{DB} = V_{SB} = 0$
4		$V_{GS(th)}$ Gate-Source Threshold Voltage	0.5	1.0	2.0	V	$V_{DS} = V_{GS}, I_D = 1.0\mu\text{A}$ $V_{SB} = 0$
5		$r_{DS(on)}$ Drain-Source ON Resistance		50	80	ohms	$V_{GS} = 5\text{V}$
6				30		ohms	$V_{GS} = 10\text{V}$
7				23		ohms	$V_{GS} = 15\text{V}$
8				19		ohms	$V_{GS} = 20\text{V}$
9	DYNAMIC	g_{fs} Common-Source Forward Transconductance	10	12		mmhos	$V_{DS} = 10\text{V}, I_D = 20\text{mA}$ $f = 1\text{KHz}, V_{SB} = 0$
10		$C_{(gs + gd + gb)}$ Gate Node Capacitance		2.4	3.5	pF	$f = 1\text{MHz}$ $V_{DS} = 10\text{V}$ $V_{GS} = V_{BS} = -15\text{V}$
11		$C_{(gd + db)}$ Drain Node Capacitance		1.3	1.5	pF	
12		$C_{(gs + sb)}$ Source Node Capacitance		3.5	4.0	pF	
13		$C_{(dg)}$ Reverse Transfer Capacitance		0.3	0.5	pF	
14		C_T Cross Talk		-107		dB	

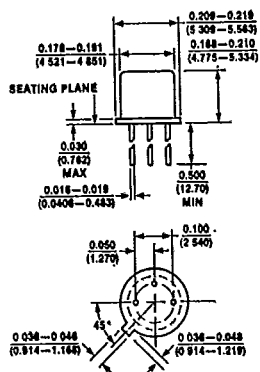
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PACKAGE DATA

T-90-20 -

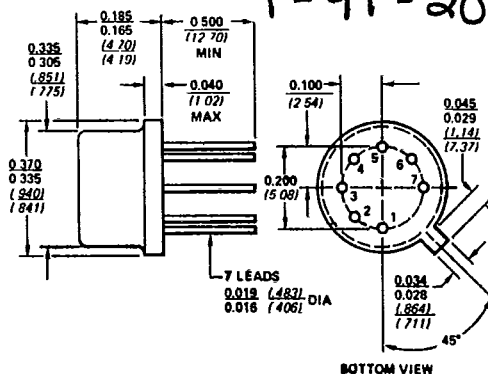
T-91-20

Package 1 (TO-18) TO-206AA



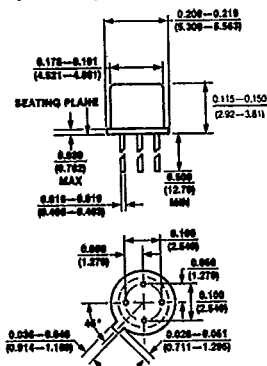
All Dimensions in Inches and (millimeters)

Package 4 (TO-78)



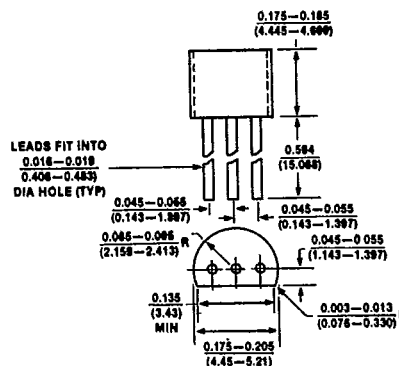
All Dimensions in Inches and (millimeters)

Package 2 (TO-52) 4-Lead



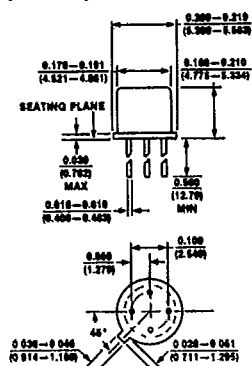
All Dimensions in Inches and (millimeters)

Package 5 (TO-92) TO-226AA



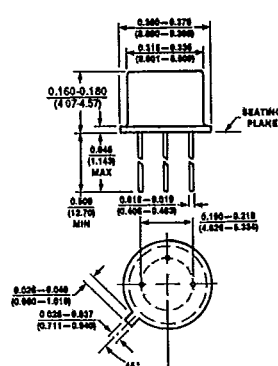
All Dimensions in Inches and (millimeters)

Package 3 (TO-72) TO-206AF



All Dimensions in Inches and (millimeters)

Package 6 (TO-39) TO-205AF

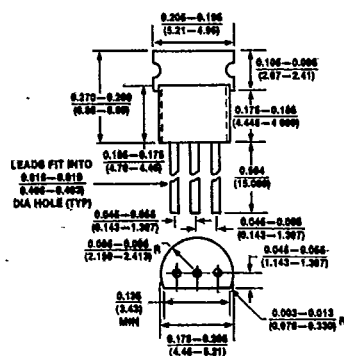


All Dimensions in Inches and (millimeters)

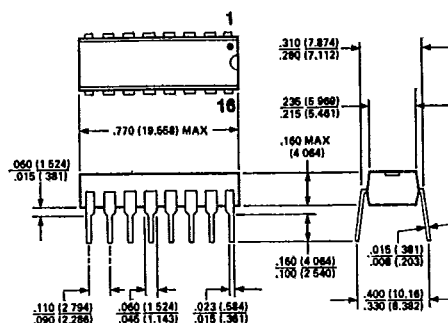
T-90-20 —
PACKAGE DATA
T-91-20

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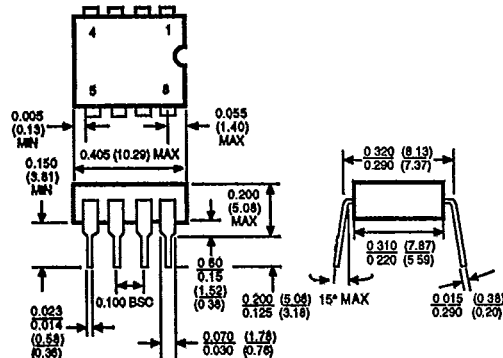
Package 7 (TO-237)



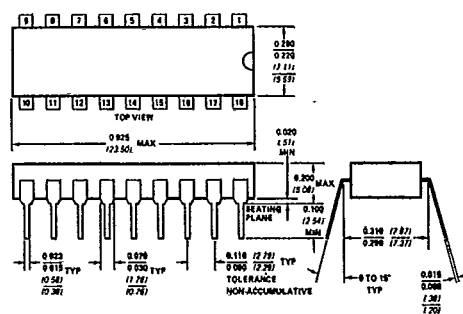
All Dimensions In inches and (millimeters)

Package 10 16-Pin Plastic Dip

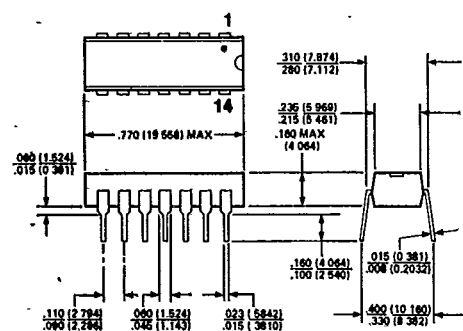
All Dimensions in Inches and (millimeters)

Package 8 8-Pin Plastic Dip

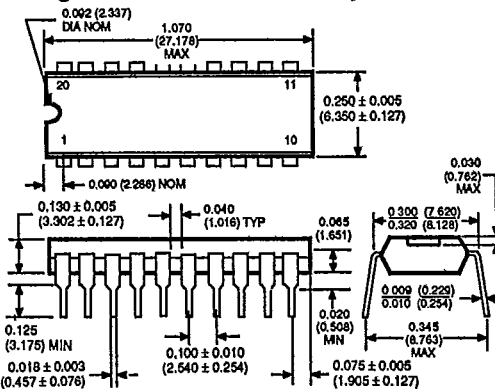
All Dimensions In Inches and (millimeters)

Package 11 18-Pin Plastic Dip

All Dimensions in inches and (millimeters)

Package 9 14-Pin Plastic Dip

All Dimensions in inches and (millimeters)

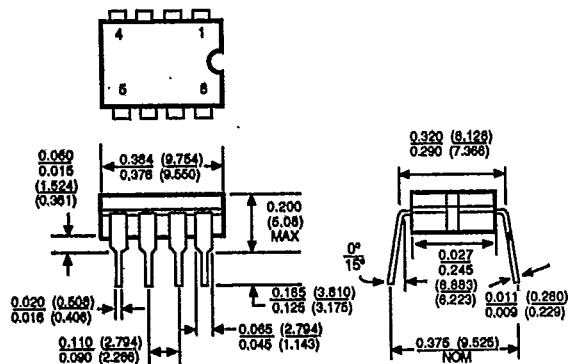
Package 12 20-Pin Plastic Dip

All Dimensions in Inches and (millimeters)

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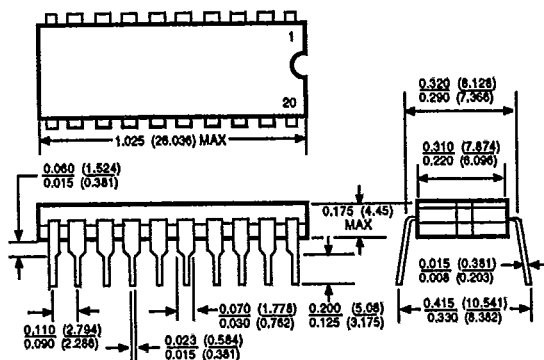
 T-90-20
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Package 13 8-Pin Ceramic Dip



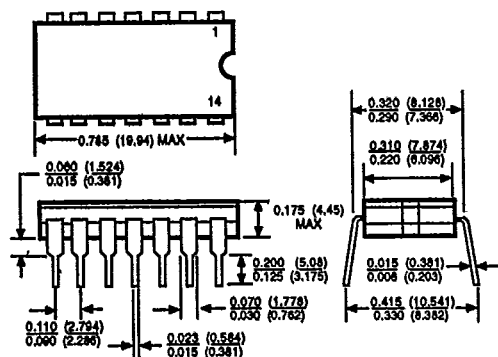
All Dimensions in Inches and (millimeters)

Package 16 20-Pin Ceramic Dip



All Dimensions in Inches and (millimeters)

Package 14 (TO-116) 14-Pin Ceramic Dip



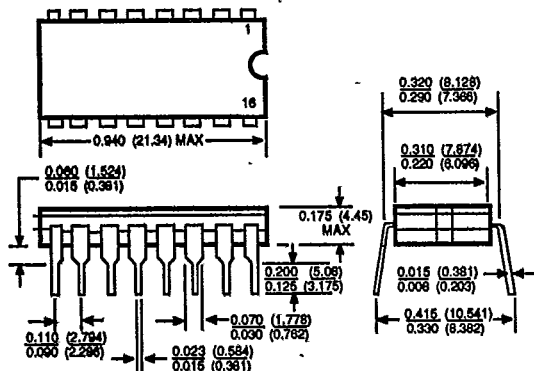
All Dimensions in Inches and (millimeters)

Package 17

NONE

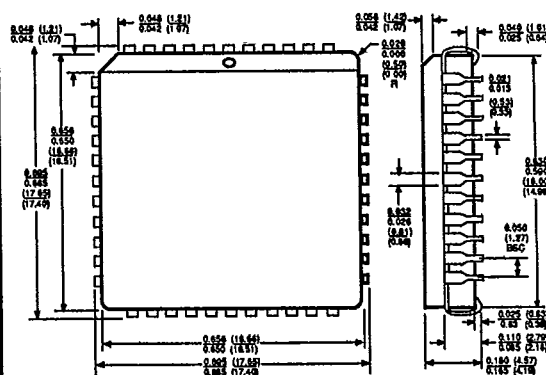
All Dimensions in Inches and (millimeters)

Package 15 16-Pin Ceramic Dip



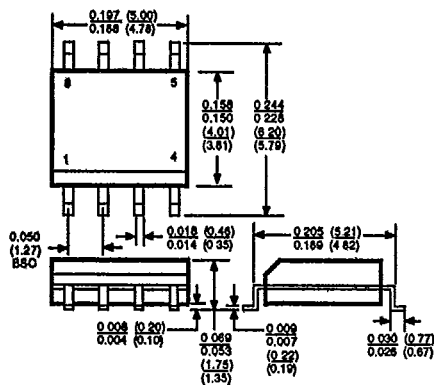
All Dimensions in Inches and (millimeters)

Package 18 PLCC-44

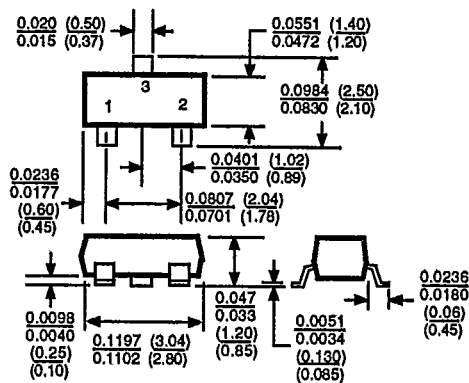


All Dimensions in Inches and (millimeters)

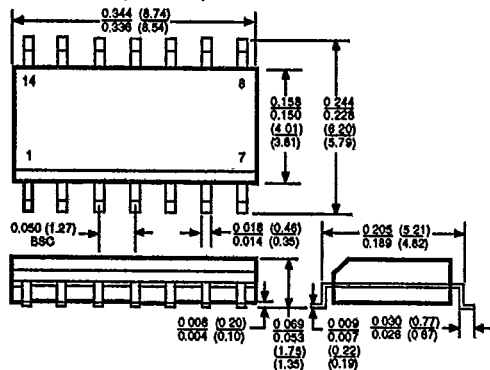
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PACKAGE DATA
 T-91-20 -
Package 19 (SO-8)

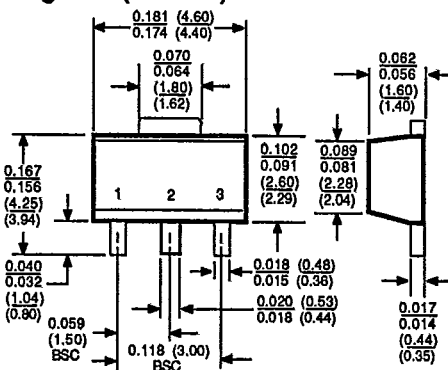
All Dimensions in Inches and (millimeters)

Package 22 (SOT-23) TO-236AA

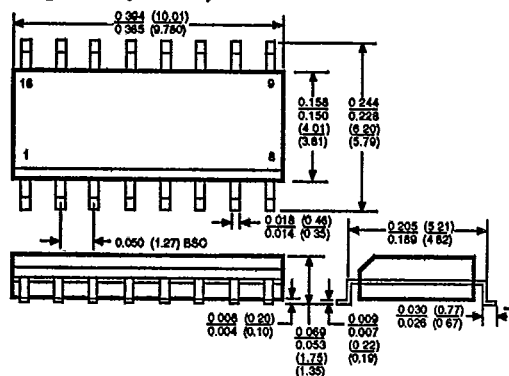
All Dimensions in Inches and (millimeters)

Package 20 (SO-14)

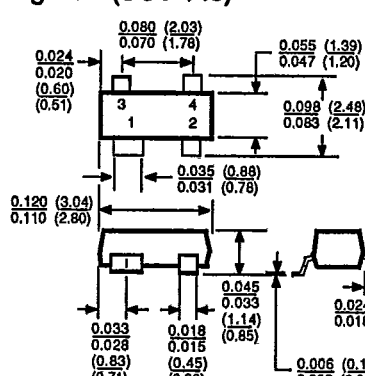
All Dimensions in Inches and (millimeters)

Package 23 (SOT-89) TO-243AA

All Dimensions in Inches and (millimeters)

Package 21 (SO-16)

All Dimensions in Inches and (millimeters)

Package 24 (SOT-143)

All Dimensions in Inches and (millimeters)