



TDA2320A

STEREO AMPLIFIER

- WIDE SUPPLY VOLTAGE RANGE: 3 TO 30V
- SINGLE OR SPLIT SUPPLY OPERATION
- VERY LOW CURRENT CONSUMPTION:
0.8mA
- VERY LOW DISTORTION: 0.03% TYPICAL

DESCRIPTION

The TDA2320A is a stereo class A preamplifier intended for application in portable cassette players and high quality audio systems.

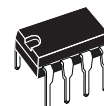
The TDA2320A is a monolithic integrated circuit in a 8 lead plastic dip.

ORDER CODE

Part Number	Temperature Range	Package	
		N	D
TDA2320A	-40°C, +105°C	•	•

Example : TDA2320AN

N = Dual in Line Package (DIP)

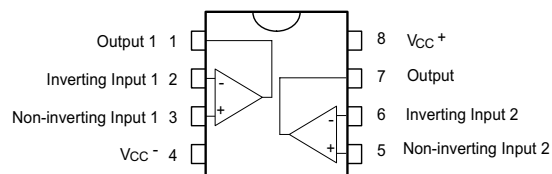


N
DIP8
(Plastic Package)

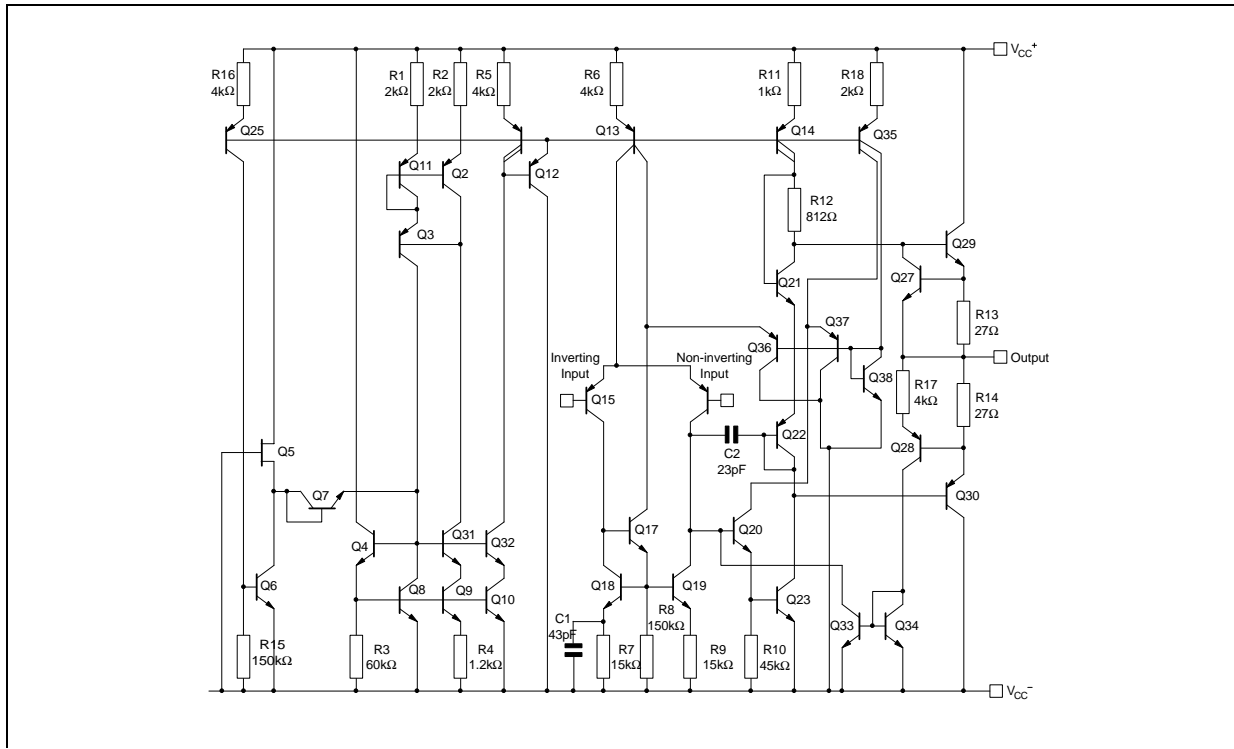


D
SO8
(Plastic Micropackage)

PIN CONNECTIONS (top view)



SCHEMATIC DIAGRAM (1/2 TDA2320A)



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CC}	Supply Voltage	36	V
P_{tot}	Total Power Dissipation at $T_{amb} = 70^{\circ}\text{C}$ ¹⁾	400	mW
T_{stg}, T_j	Storage and Junction Temperature	-40 to 150	$^{\circ}\text{C}$

1. Power dissipation must be considered to ensure maximum junction temperature (T_j) is not exceeded.

ELECTRICAL CHARACTERISTICS $V_{CC} = 15V$, $T_{amb} = 25^{\circ}C$ (unless otherwise specified)

Symbol	Parameter	Min.	Typ.	Max.	Unit
V_{CC}	Supply Voltage	3		30	V
I_{CC}	Supply Current		0.8	2	mA
I_{ib}	Input Bias Current		150	500	mV
V_{io}	Input Offset Voltage $R_s \leq 10k\Omega$		1	5	mV
I_{io}	Input Offset Current		10	50	nA
A_{vd}	Open Loop Voltage Gain $V_{CC} = 15V$ $f = 333Hz$ $f = 1kHz$ $f = 10kHz$ $f = 1kHz$		80 70 50 70		dB
V_{opp}	Output Voltage Swing ($f = 1kHz$, $R_L = 600\Omega$) $V_{CC} = 15V$ $V_{CC} = 4.5V$		13 2.5		V
GBP	Gain-bandwidth Product $f = 200kHz$	1.5	2.5		MHz
FPB	Power Bandwidth $V_o = 5V_{pp}$, THD = 1%	40	70		kHz
SR	Slew Rate (see note 1)	1	1.6		V/ μs
e_n	Equivalent Input Noise Voltage Curve A $R_s = 50\Omega$ $R_s = 600\Omega$ $R_s = 5k\Omega$ B = 22Hz to 22kHz $R_s = 50\Omega$ $R_s = 600\Omega$ $R_s = 5k\Omega$ $f = 1kHz$ $R_s = 600\Omega$		1 1.1 1.5 1.3 1.5 2 9		μV μV μV μV μV μV nV/ \sqrt{Hz}
THD	Distortion ($V_o = 2V$, $A_v = 20dB$) $f = 1kHz$ $f = 10kHz$		0.03 0.08		%
PSRR	Power Supply Rejection Ratio $f = 100Hz$		80		dB
V_{o1}/V_{o2}	Channel Separation $f = 1kHz$		100		dB

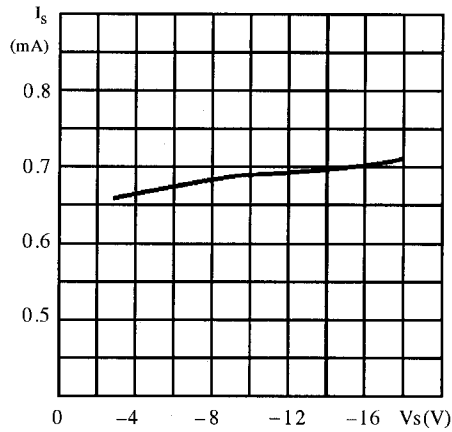
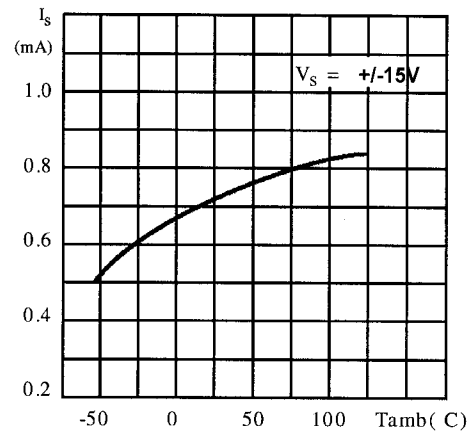
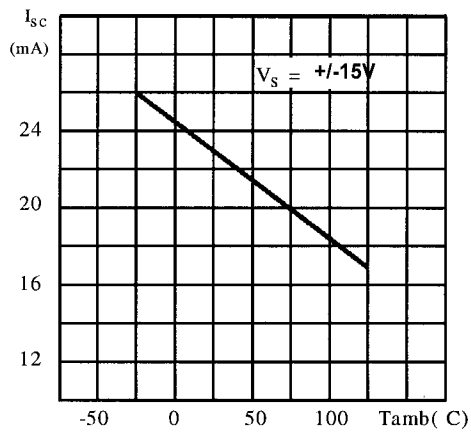
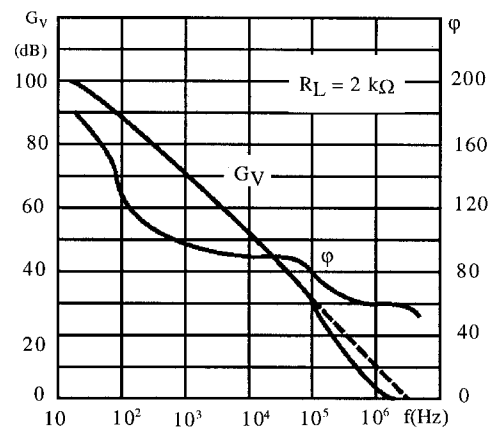
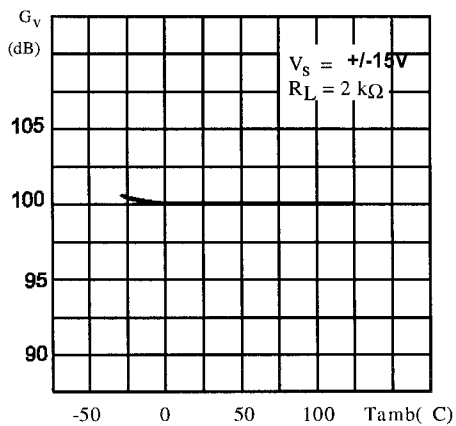
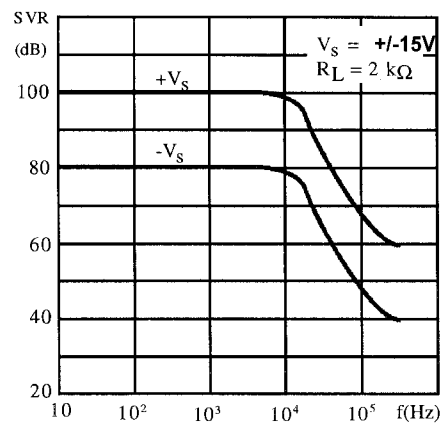
Figure 1 : Supply Current versus Supply Voltage**Figure 2 : Supply Current versus Ambient Temperature****Figure 3 : Output Short Circuit Current versus Ambient Temperature****Figure 4 : Open Loop Frequency and Phase Response****Figure 5 : Output Loop Gain versus Ambient Temperature****Figure 6 : Supply Voltage Rejection versus Frequency**

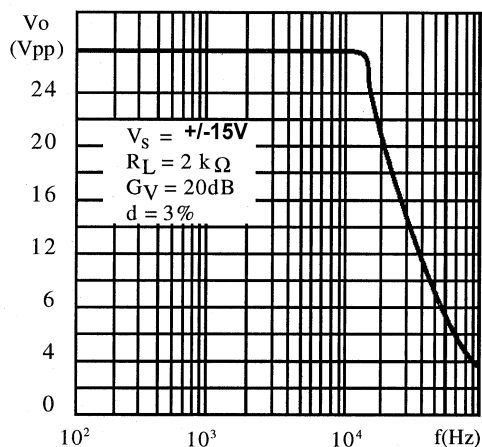
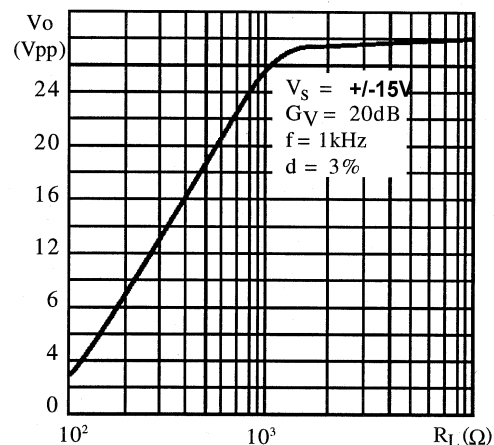
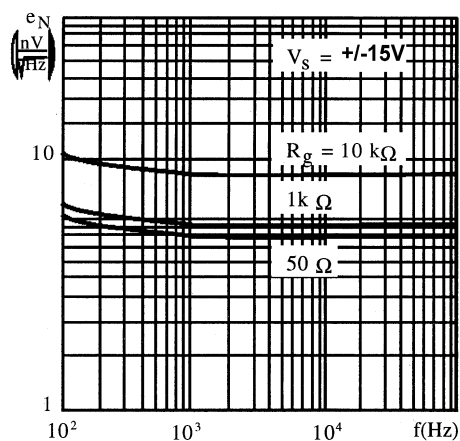
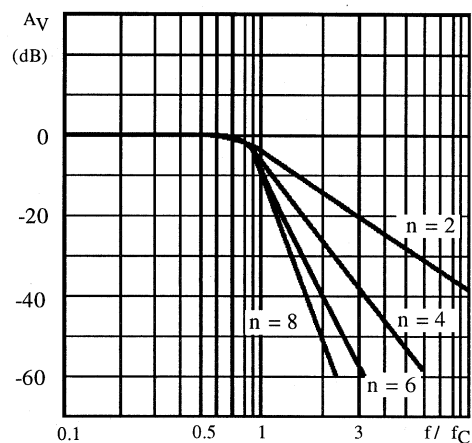
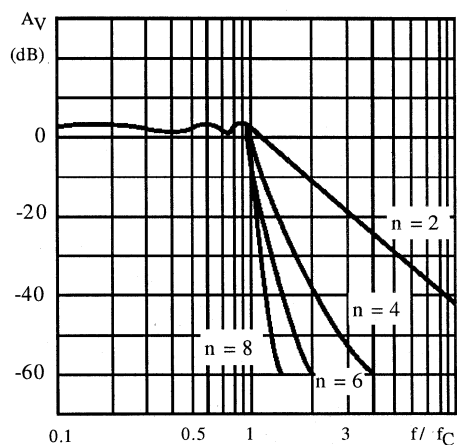
Figure 7 : Large Signal Frequency Response**Figure 8 : Output Voltage Swing versus Load Resistance****Figure 9 : Total Input Noise versus Frequency****Figure 10 : Amplitude Response****Figure 11 : Amplitude Response ($\pm 1\text{dB}$ ripple)**

Figure 12 : Filter Configuration

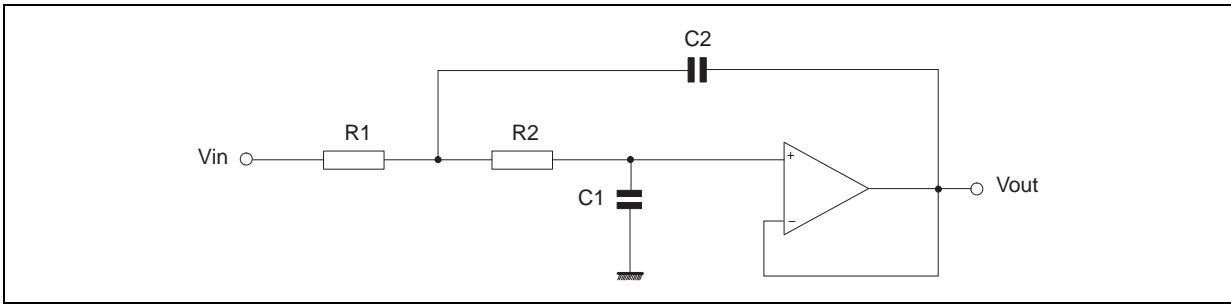


Figure 13 : 5th Order Low-pass Filter (Butterworth) with Unity Gain configuration

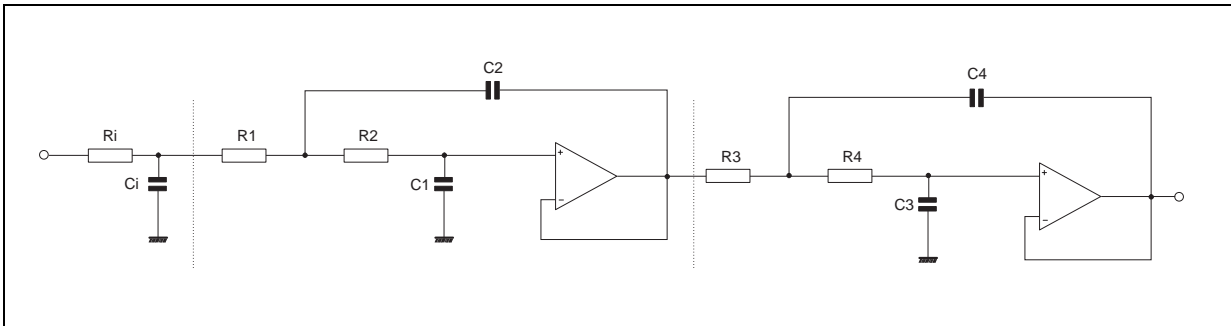
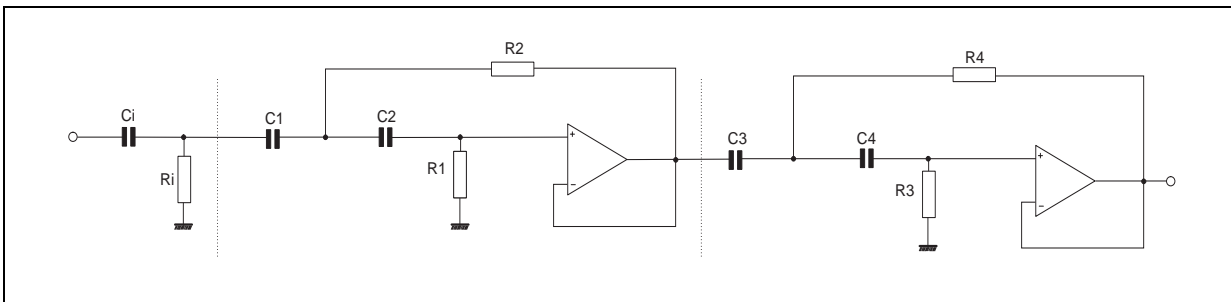
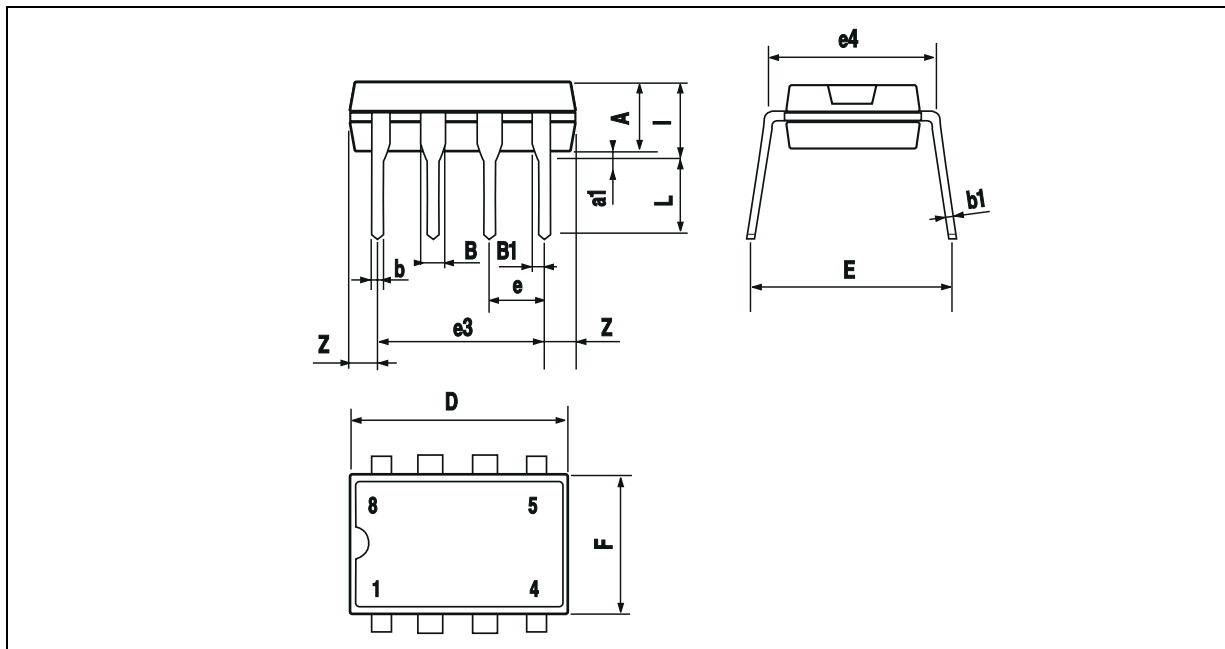


Figure 14 : 5th Order High-pass Filter (Butterworth) with Unity Gain configuration

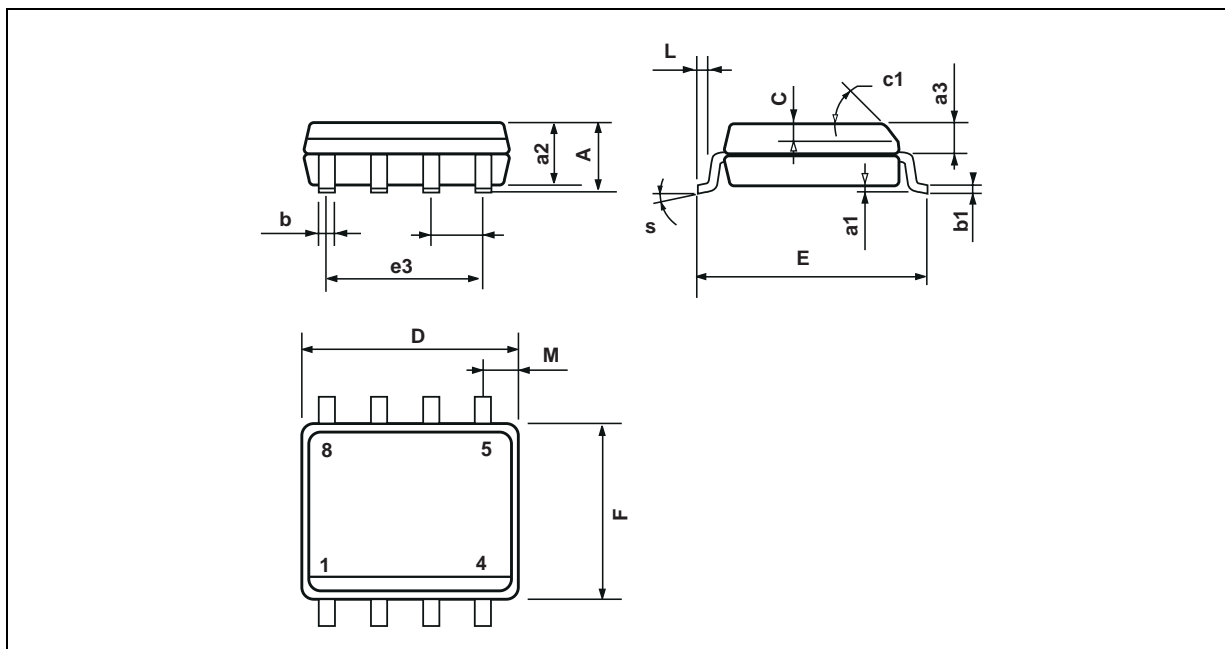


PACKAGE MECHANICAL DATA
8 PINS - PLASTIC DIP



Dimensions	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A		3.32			0.131	
a1	0.51			0.020		
B	1.15		1.65	0.045		0.065
b	0.356		0.55	0.014		0.022
b1	0.204		0.304	0.008		0.012
D			10.92			0.430
E	7.95		9.75	0.313		0.384
e		2.54			0.100	
e3		7.62			0.300	
e4		7.62			0.300	
F			6.6			0.260
i			5.08			0.200
L	3.18		3.81	0.125		0.150
Z			1.52			0.060

PACKAGE MECHANICAL DATA **8 PINS - PLASTIC MICROPACKAGE (SO)**



Dimensions	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A			1.75			0.069
a1	0.1		0.25	0.004		0.010
a2			1.65			0.065
a3	0.65		0.85	0.026		0.033
b	0.35		0.48	0.014		0.019
b1	0.19		0.25	0.007		0.010
C	0.25		0.5	0.010		0.020
c1	45° (typ.)					
D	4.8		5.0	0.189		0.197
E	5.8		6.2	0.228		0.244
e		1.27			0.050	
e3		3.81			0.150	
F	3.8		4.0	0.150		0.157
L	0.4		1.27	0.016		0.050
M			0.6			0.024
S	8° (max.)					

Information furnished is believed to be accurate and reliable. However, STMicroelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of STMicroelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. STMicroelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of STMicroelectronics.

© The ST logo is a registered trademark of STMicroelectronics

© 2001 STMicroelectronics - Printed in Italy - All Rights Reserved
 STMicroelectronics GROUP OF COMPANIES

Australia - Brazil - Canada - China - Finland - France - Germany - Hong Kong - India - Israel - Italy - Japan - Malaysia
 Malta - Morocco - Singapore - Spain - Sweden - Switzerland - United Kingdom - United States

© <http://www.st.com>

This datasheet has been download from:

www.datasheetcatalog.com

Datasheets for electronics components.