



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China





# STABP01

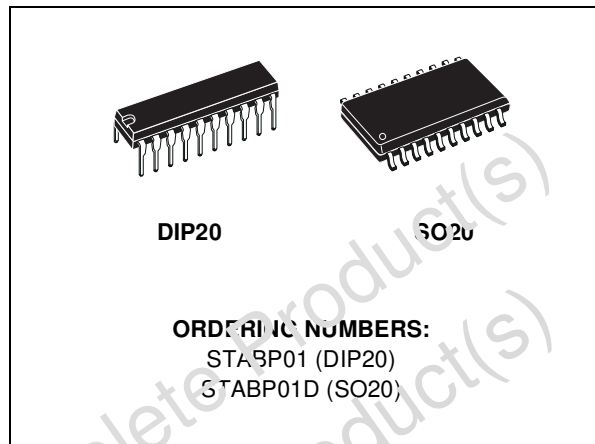
## BASH® DIGITAL FIDELITY DIGITAL PROCESSOR

### ■ BASH® LICENCE REQUIRED

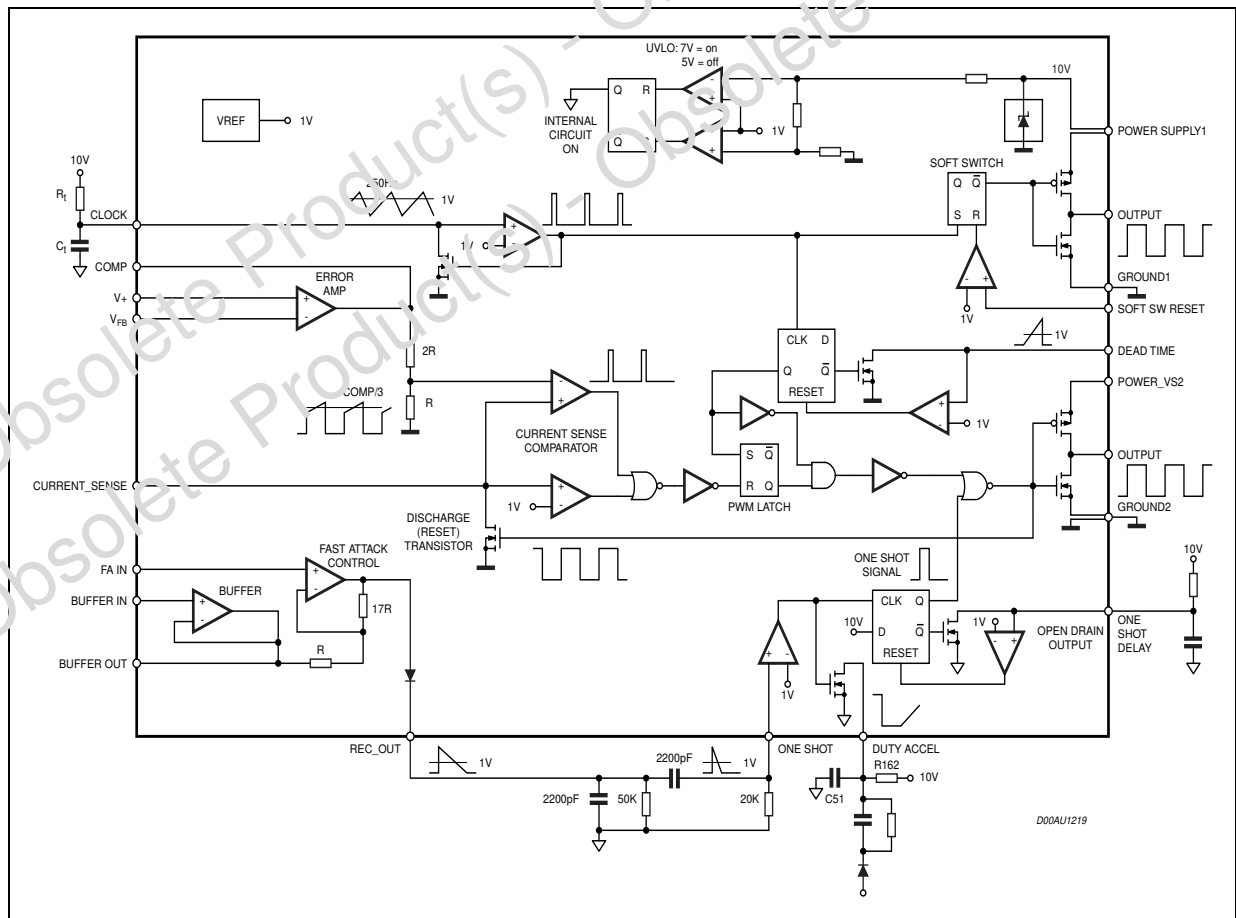
#### DESCRIPTION

The STABP01 processor is used to control the BASH® Digital Converter. When used in conjunction with BASH® amplifiers a fully integrated high efficiency power amplifier is realized.

By analyzing the audio input, the Processor determines the appropriate on/off events and generates a digital pulse for the Digital Converter. The converter turns this pulse into a power signal that feeds the power amplifier. The feedback system allows the processor to constantly adapt to the audio signal and regenerate the digital pulse thereby maintaining a constant voltage across the output devices.



#### BLOCK DIAGRAM



# STABP01

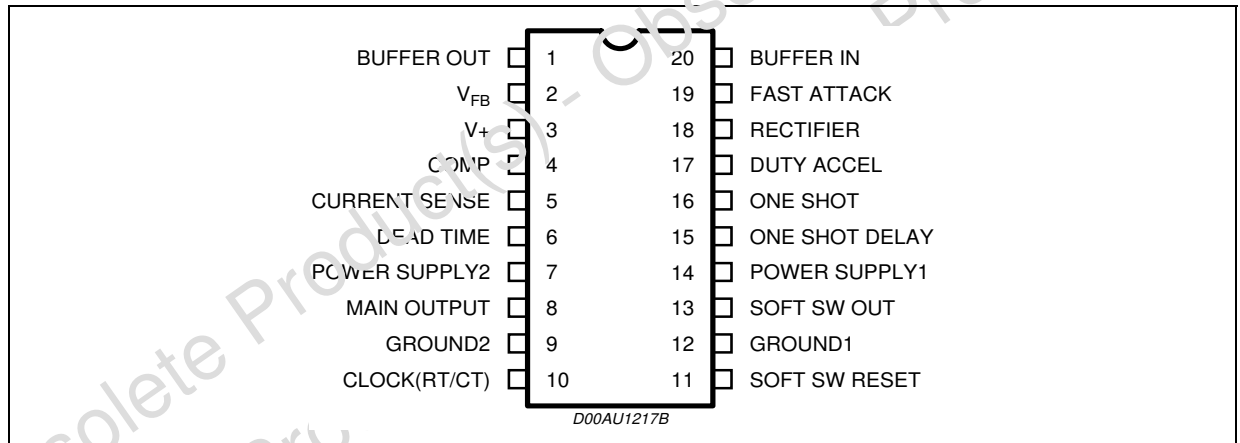
## ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
Vs	Supply Voltage	10.5	V
Io	Output Current	±0.6	A
Eo	Output Energy(capacitive load)	5	μJ
Vi	Analog Input Voltage	-0.3 to 8	V
Io	Error Amplifier Output Sink Current	10	mA
P <sub>tot</sub>	Power Dissipation at Tamb	500	mW
T <sub>stg</sub>	Storage Ambient Temperature	-65 to 150	°C
T <sub>L</sub>	Lead Temperature (soldering 10s)	300	°C
T <sub>op</sub>	Operating Temperature Range	-25 to 85	°C

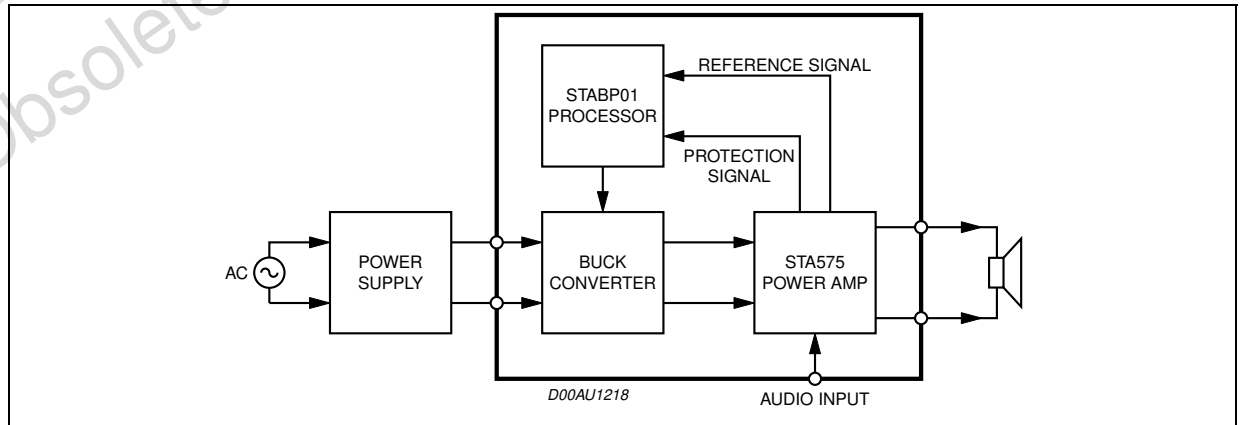
## THERMAL DATA

Symbol	Parameter	SO20	DIP20	Unit
R <sub>th j-amb</sub>	Thermal Resistance junction-ambient soldered on PCB	95	90	°C/W

## PIN CONNECTION



## TYPICAL APPLICATION CIRCUIT



**ELECTRICAL CHARACTERISTICS** ( $V_s = 10V$ ;  $R_t = 22k\Omega$ ;  $C_t = 2.2nF$ ;  $t = 25^\circ C$  unless otherwise specified)

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
<b>OSCILLATOR SECTION</b>						
fs	Initial Accuracy (*)	$T_j=25^\circ C$ , SW Out Off	225	250	300	kHz
Ts	Temperature Stability	$T_{min}<T_{amb}<T_{max}$		5		%
	Amplitude	Vpin10 Peak to Peak		0.5		V
<b>ERROR AMP SECTION</b>						
Ib	Input Bias Current				1	$\mu A$
AVOL	Open loop Gain		65	90		dB
B	Unity Gain Bandwidth		0.7	1		MHz
SVR	Supply Voltage Rejection	$6<V_s<10V$	60	70		dB
ICMR	Input Common Mode Range				8	V
CMRR	Common Mode Rejection Ratio			90		dB
OR	Output Voltage Range	$I = 1mA$	0.5		8.5	V
<b>CURRENT SENSE SECTION</b>						
Gv	Gain	$V_4/V_5$ , $V_5 < 1V$ , Duty Cycle = 80%	2.7	3	3.3	V/V
V5	Maximum Input Signal	$V_4 = 5V$	0.9	1	1.1	V
Ib	Input Bias Current	$V_5 < 0.9V$ ,			1	$\mu A$
Odt	Delay to Output (minimum output pulse)			150	300	ns
<b>OUTPUT SECTION</b>						
VOL	Output Low Level	$I_{sink}=20mA$ $I_{sink}=200mA$		0.1 1.5	0.4 2.2	V V
VOH	Output High Level	$I_{source}=20mA$ $I_{source}=200mA$	9.6 7.8	9.9 8.5		V V
tr	Rise Time	$T_j=25^\circ C$ $C_L=1nF$		50	150	ns
tf	Fall Time	$T_j=25^\circ C$ $C_L=1nF$		50	150	ns
<b>UNDER-VOLTAGE LOCKOUT SECTION</b>						
UVstart	Start Threshold		6.3	7	7.7	V
UVstop	Min Operating Voltage After Turn-on		4.5	5	5.5	V
<b>TOTAL STANDBY CURRENT</b>						
Ist	Start-up Current			0.5	1	mA
Is	Operating Supply Current			10	20	mA

## STABP01

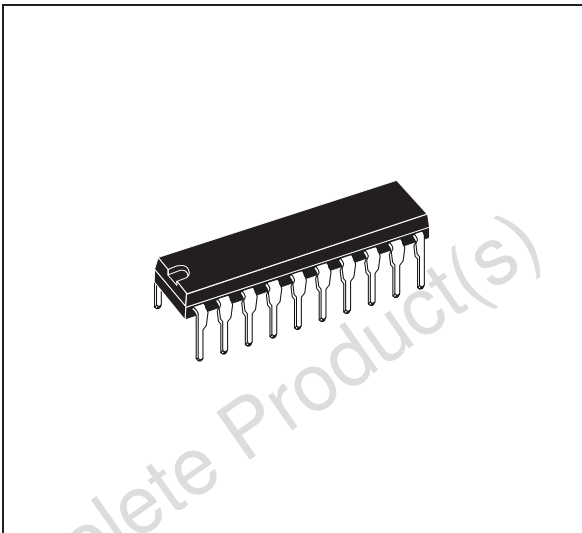
### ELECTRICAL CHARACTERISTICS (continued)

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
<b>BUFFER SECTION</b>						
I <sub>b</sub>	Input Bias Current				1	μA
B	Unity Gain Bandwidth		0.7	1		MHz
SVR	Supply Voltage Rejection	6<V <sub>s</sub> <10V	60	70		dB
I <sub>CMR</sub>	Input Common Mode Range		0		9	V
O <sub>R</sub>	Output Range	I = 1mA	0.5		8.5	V
<b>SOFT SWITCH SECTION</b>						
V <sub>OL</sub>	Output Low Level	I <sub>sink</sub> =20mA I <sub>sink</sub> =200mA		0.1	0.4	V
				1.5	2.2	V
V <sub>OH</sub>	Output High Level	I <sub>source</sub> =20mA I <sub>source</sub> =200mA	9.6	9.9		V
			7.3	8.5		V
t <sub>r</sub>	Rise Time	T <sub>j</sub> =25°C CL=1nF		50	150	ns
t <sub>f</sub>	Fall Time	T <sub>j</sub> =25°C CL=1nF		50	150	ns
V <sub>reset</sub>	Reset Level			1		V
<b>FAST ATTACK CONTROL SECTION</b>						
G <sub>diff</sub>	Differential Gain		16	18	20	V/V
OS <sub>th</sub>	Level for one shot		0.9	1	1.1	V
OSD <sub>th</sub>	Level for one shot delay		0.9	1	1.1	V
I <sub>15leak</sub>	Leakage pin 15	V <sub>15</sub> = 0.8V			0.2	μA
I <sub>17leak</sub>	Leakage pin 17	V <sub>17</sub> = 10V, V <sub>16</sub> = 0V			0.2	μA

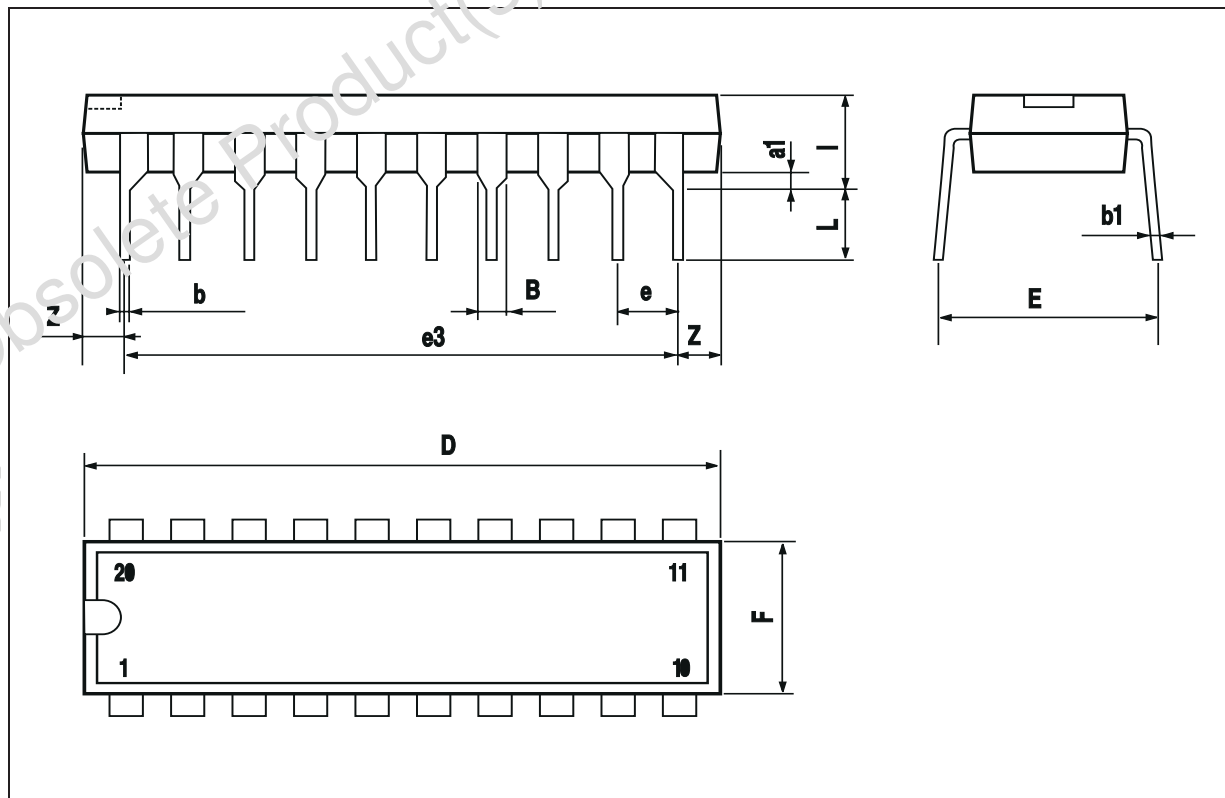
(\*) R<sub>t</sub>, C<sub>t</sub> = 1% precision component

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
a1	0.254			0.010		
B	1.39		1.65	0.055		0.065
b		0.45			0.018	
b1		0.25			0.010	
D			25.4			1.000
E		8.5			0.335	
e		2.54			0.100	
e3		22.86			0.900	
F			7.1			0.280
I			3.93			0.155
L		3.3			0.130	
Z			1.34			0.053

**OUTLINE AND MECHANICAL DATA**



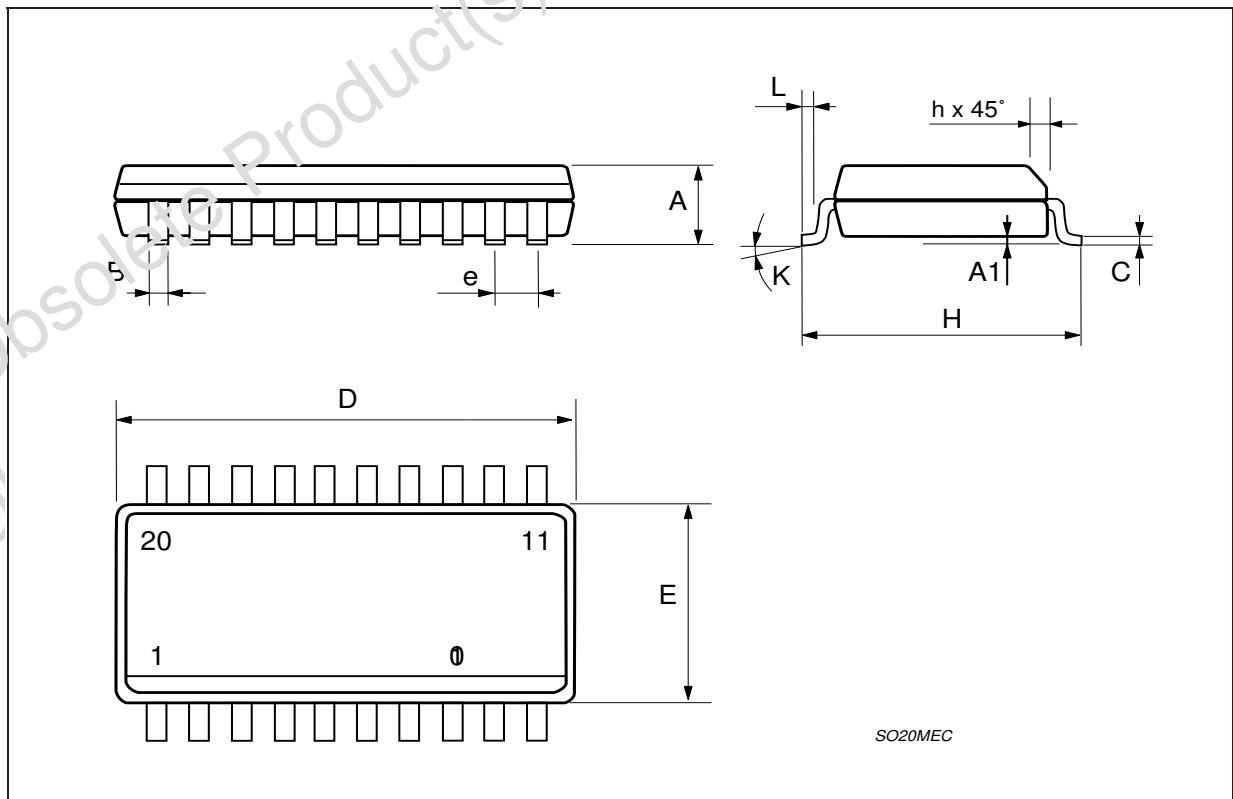
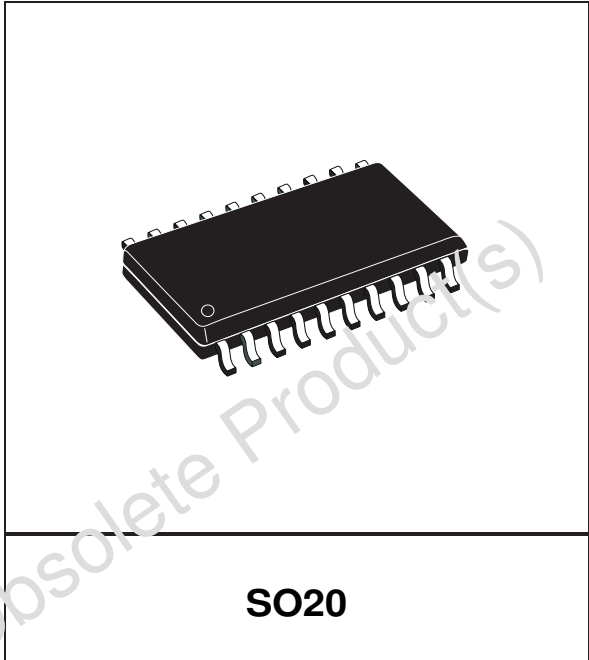
**DIP20**



**STABP01**

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	2.35		2.65	0.093		0.104
A1	0.1		0.3	0.004		0.012
B	0.33		0.51	0.013		0.020
C	0.23		0.32	0.009		0.013
D	12.6		13	0.496		0.512
E	7.4		7.6	0.291		0.299
e		1.27			0.050	
H	10		10.65	0.394		0.419
h	0.25		0.75	0.010		0.030
L	0.4		1.27	0.016		0.050
K	0° (min.)8° (max.)					

**OUTLINE AND MECHANICAL DATA**



Obsolete Product(s) - Obsolete Product(s)  
Obsolete Product(s) - Obsolete Product(s)

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  
© 2000 STMicroelectronics - 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>