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LP83053--PS2 Keyboard Controller

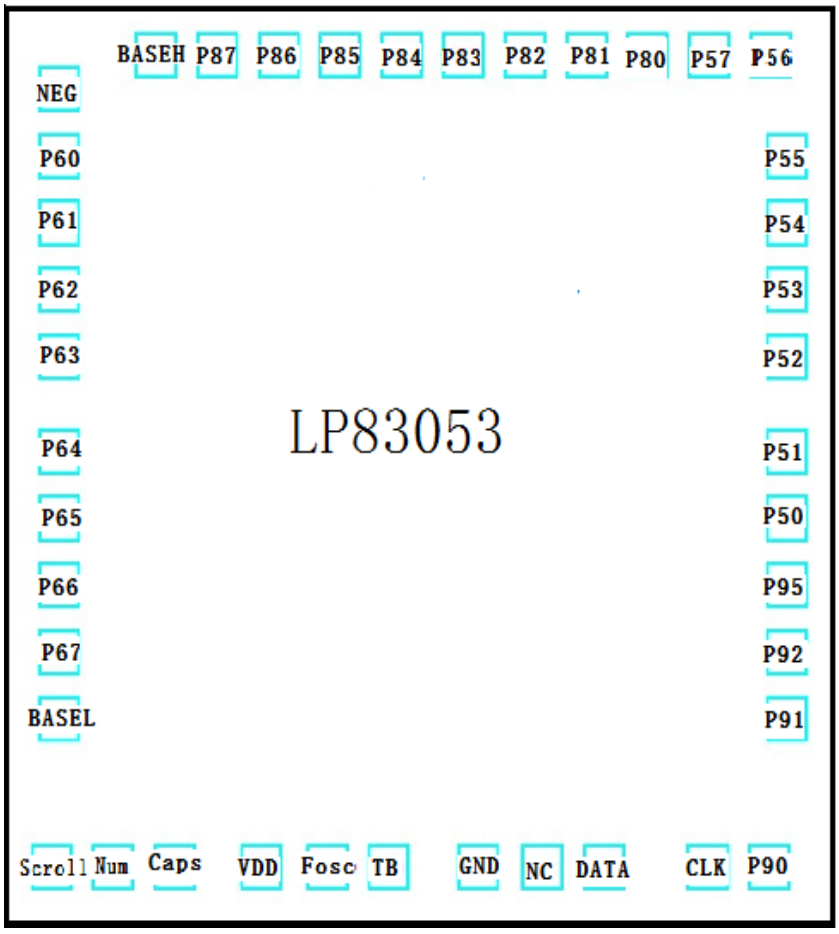
Features:

•Built-in MCU
•Support Carbon-Line membrane
•Low cost - eliminate need external components.
•Support scan code set 1, 2 and 3.
•Support PC AT and PS/2 keyboard.
•Low power CMOS device technology.
•Internal pull-up resistor.
•Built-in 4K ROM and 128 bytes SRAM
•Built-in power-on reset
•Built-in RC oscillator with an external resistor
•Support WINDOWSTM 95, 98, 2000,xp,vista
•104/107 keys with multi-media or other special application keyboard encoder.
•3 LED sink pins with internal serial resistors

General Description:

This chip is dedicated to a keyboard encoder ,specially designed for IBM PC AT and all compatible machines. The controller controls all scan codes, three LEDs status, scan timing and communications between the keyboard and PC. It is easy to implement a high performance, low cost keyboard with the minimal external components. With a watchdog timer that prevents system standstill.

IC Bonding Pad:



Pad Name & Description:

PAD	Description	PAD	Description
GND	Ground	P83	Column 8 Low output scan line
DATA	DATA line for communication	P84	Column 9 Low output scan line
CLK	CLOCK line for communication	P85	Column 0 Low output scan line
P90	Column 1 Low output scan line	P86	Column 16 Low output scan line
P91	Column 2 Low output scan line	P87	Column 17 Low output scan line
P92	NO use	P60	Row 0 Input scan line, internal pull high
P95	Reset for system (option)	P61	Row 1 Input scan line, internal pull high
P50	Column 3 Low output scan line	P62	Row 2 Input scan line, internal pull high
P51	Column 4 Low output scan line	P63	Row 3 Input scan line, internal pull high
P52	Column 5 Low output scan line	P64	Row 4 Input scan line, internal pull high
P53	Column 6 Low output scan line	P65	Row 5 Input scan line, internal pull high
P54	Column 7 Low output scan line	P66	Row 6 Input scan line, internal pull high
P55	Column 14 Low output scan line	P67	Row 7 Input scan line, internal pull high
P56	Column 13 Low output scan line	Scroll	Scroll Lock Indicator
P57	Column 12 Low output scan line	Num	NUM Lock Indicator
P80	Column 11 Low output scan line	Caps	Caps Lock Indicator
P81	Column 15 Low output scan line	VDD	+5V Power Supply
P82	Column 10 Low output scan line	Rosc	Connect 51K OHM resistor for 4 MHz oscillation

DC Electrical Characteristics: (Vdd=5V. GND=0V, TA=25 ℃, Fosc=4Mz, unless otherwise specified)

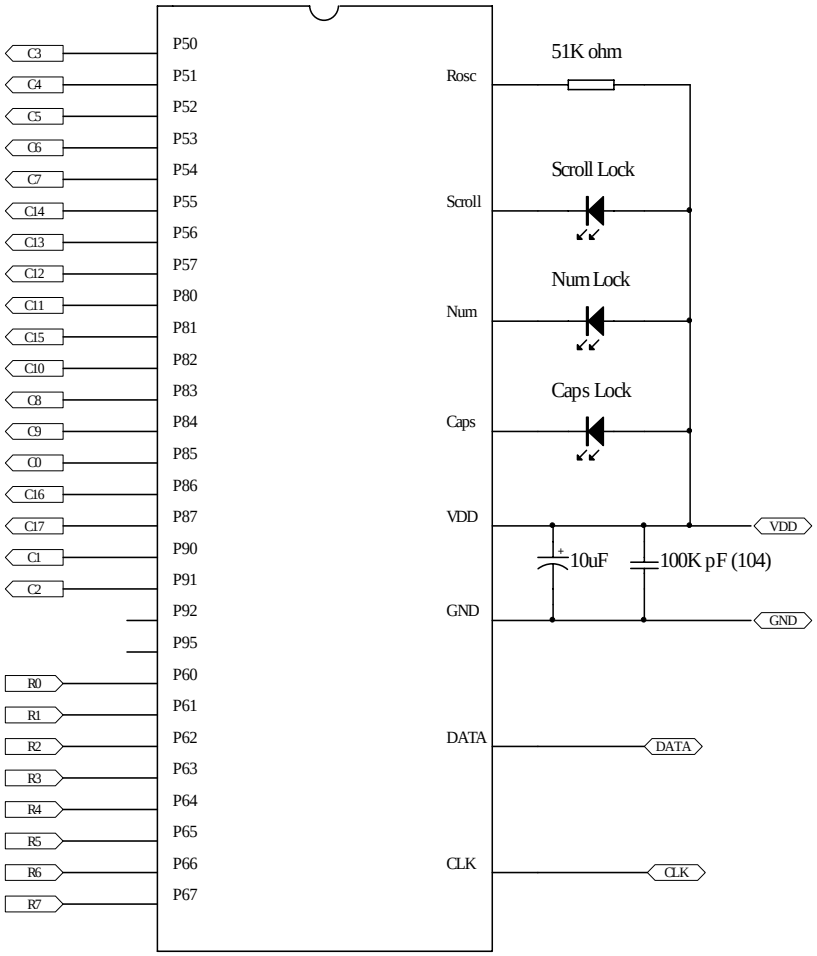
Symbol	Parameter	Min	Type	Max	Unit	Conditions
Icc	Power Supply Current			20	mA	No load
Vih	Input High Voltage	2			V	
Vil	Input Low Voltage			0.8	V	
Voh1	Output High Voltage (Port 0,1,2,3)	2.4			V	Ioh=-100uA
Voh2	Output Low Voltage (CLK>DATA)	2.4			V	Ioh=-400uA
Vol1	Output Low Voltage (PORT 0.1.2)			0.4	V	Iol=4mA
Vol2	Output Low Voltage (PORT 3)			0.4	V	Iol=5mA
Vol3	Output Low Voltage (CLK DATA)			0.4	V	Iol=10mA
Δ F/F	Initial Frequency Variation 1			+/-10	%	For RC OSC option only: By Lots
Iled	LED Sink Current (LED 0.1.2.)	10	14	17	mA	Vol=3.2V
Vlvr	Low Voltage Reset Threshold		3.0		V	
Tpor	Power-on Reset Threshold	120	150	180	ms	
Trstb	RESET Input Low Pulse Width	2.5			us	10 system clocks
Rph	RESET Pull High Resistor		220		KΩ	

Absolute Maximum Ratings :

RATING	VALUE
DC Supply Voltage	-0.3Vto+7.0V
Input/output Voltage	GND-0.3V to VDD+0.3V
Operating Temperature	-10°C to 60 °C
Storage Temperature	-25°C to 125°C
Operating Voltage (Vdd)	+4.5V to 5.5V

Notice: Stress greater than those listed under Absolute Maximum Ratings may cause permanent damage to the device, This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied, Exposure to absolute maximum rating conditions for extended period may affect reliability

Application Circuit:



Substrate should connect to

Key Matrix (LP83053A):

	RO	R1	R2	R3	R4	R5	R6	R7
C0	A	Z	WIN_L	,(<)	’(")	Search	WIN_R	*(K)
C1	Sleep1	Mail	Refresh	9(‘(’)	_(-)	←	MyComputer	↓
C2	Mute	Home1	Favorite	0(‘)’)	F11	POWER	WAKE_UP	SLEEP
C3	Stop1	Stop2	Back1	F7	F10	POWER	WAKE_UP	ROMA
C4	PlayPause	Forward	F6	F8	F9	INS	CHG	N_CHG
C5	Fn	F3	F5	8(*)	PRINT	HOME	END	M/MODE
C6	F1	F2	F4	I	F12	SCROLL	PAGE_DN	K56
C7	ESC	4($)	7(&)	U	+(=)	DEL	4(K)	K42
C8	W	C	SPACE	.(>)	PrevTrack	→	/(K)	+(K)
C9	S	X	V	ALT_L	ALT_R	Media	NUM	ENTER(K)
C10	CAP	D	B	;(:)	ENTER	↑	0(K)	￥(K)
C11	TAB	E	H	P	[({}	PAGE_UP	2(K)	3(K)
C12	`(~)	R	T	K	BACK	Volume-	5(K)	6(K)
C13	2(@)	3(#)	Y	J	€	Volume+	7(K)	K107
C14	1(!)	5(%)	6(^)	O	\(|)	NextTrack	1(K)	K14
C15	Q	F	G	L	](})	PAUSE	8(K)	9(K)
C16	K45	CTR_L	N	M	\(|)		APP	CTR_R
C17	SHIFT_L	Calculator	K150	K151	/(?)	SHIFT_R		-(K)

Key Matrix (LP83053B):

	RO	R1	R2	R3	R4	R5	R6	R7
C0	A	Z	WIN_L	,(<)	’(")	ROMA	WIN_R	*(K)
C1	PlayPause	MyComputer	N_CHG	9(‘(’)	_(-)	←	wwwBACK	↓
C2	Stop	WK_UP	SLEEP	0(‘)’)	F11	Mute	Refresh	Search
C3	Previous	V+	POWER	F7	F10	Mail	Forward	webHome
C4	Media	Calculator	F6	F8	F9	INS	wwwStop	Favorite
C5	V-	F3	F5	8(*)	PRINT	HOME	END	Next
C6	F1	F2	F4	I	F12	SCROLL	PAGE_DN	Word
C7	ESC	4($)	7(&)	U	+(=)	DEL	4(K)	Execl
C8	W	C	SPACE	.(>)	PrevTrack	→	/(K)	+(K)
C9	S	X	V	ALT_L	ALT_R	K42	NUM	ENTER(K)
C10	CAP	D	B	;(:)	ENTER	↑	0(K)	.(K)
C11	TAB	E	H	P	[({}	PAGE_UP	2(K)	3(K)
C12	`(~)	R	T	K	BACK	Volume-	5(K)	6(K)
C13	2(@)	3(#)	Y	J	K14	Volume+	7(K)	K107
C14	1(!)	5(%)	6(^)	O	\(|)	NextTrack	1(K)	PPoint
C15	Q	F	G	L	](})	PAUSE	8(K)	9(K)
C16	K45	CTR_L	N	M	\(|)	CHG	APP	CTR_R
C17	SHIFT_L	Log Off	K150	K151	/(?)	SHIFT_R	K56	-(K)

Bonding Map: