查询LC7582供应商 捷多邦，专业PCB打样工厂，24小时加急出货

Ordering number: EN 2290C

CMOS LSI

SANYO No.2290C

LC7582,7582E,7582W

LCD Driver

DISCONTINUED PRODUCT

Overview

The LC7582,7582E,7582W is a general-purpose LCD driver designed for use in electronic tuning frequency display or microcomputer-controlled system applications.

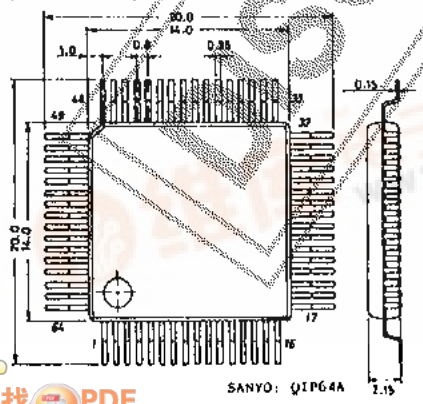
Features

- 53 segments (max.) output (Static display)
- Drive system: 1/1duty (53 segments), 1/2duty (104 segments)
- Data input: 3 serial input pins
- 2 pins for 5-level AD converter (Level meter use, etc.)
- 2 display (DSP) pins for direct display
- $\overline{\text{INH}}$ pin for blanking out display

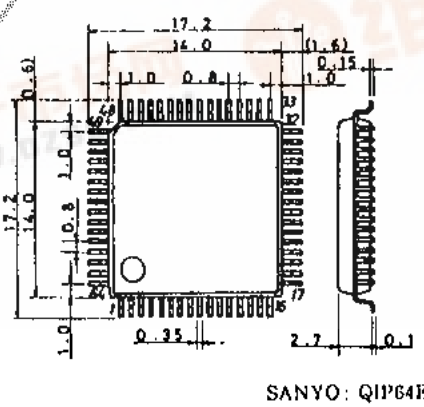
Absolute Maximum Ratings at Ta=25°C, V_{SS}=0V

					unit
Maximum Supply Voltage	V_{DD}max	V_{DD}		-0.3 to +7.0	V
	V_{LCD}	V_{LCD}		-0.3 to V_{DD}+0.3	V
Input Voltage	V_{IN}(1)	CE, CLK, DATA, $\overline{\text{INH}}$		-0.3 to +7.0	V
	V_{IN}(2)	S44 to S47	Output OFF (Used as AD1, AD2, DSP1, DSP2)	-0.3 to V_{DD}+0.3	V
	V_{IN}(3)	OSC	Output OFF	-0.3 to V_{DD}+0.3	V
Output Voltage	V_{OUT}	OSC	Output OFF	-0.3 to V_{DD}+0.3	V
Output Current	I_{OUT}(1)	S1 to S53		100	uA
	I_{OUT}(2)	COM1,2		1.0	mA
Allowable Power Dissipation	Pdmax	Ta=85°C		100	mW
Operating Temperature	Topg			-30 to +85	°C
Storage Temperature	Tstg			-40 to +125	°C

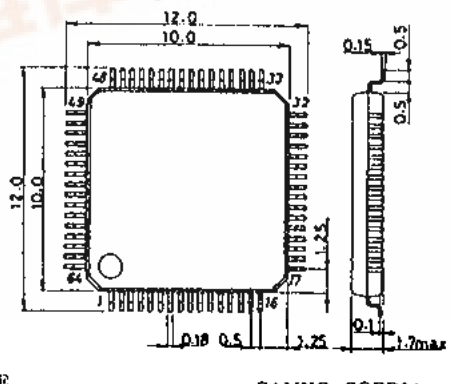
Case Outline 3057 [LC7582]
(unit: mm)



Case Outline 3159 [LC7582E]
(unit: mm)



Case Outline 3190 [LC7582W]
(unit: mm)



Specifications and information herein are subject to change without notice.

找PDF 维库一下 pdf.dzsc.com

Allowable Operating Conditions at Ta=-30 to +85°C, V_{SS}=0V

		Pin		min	typ	max	unit
Supply Voltage	V_{DD}	V_{DD}		3.0		6.5	V
	V_{LCD}	V_{LCD}		3.0		V_{DD}	V
Input "H"-Level Voltage	$V_{IH}(1)$	$\overline{INH}$		0.7V_{DD}		6.5	V
Input "L"-Level Voltage	$V_{IL}(1)$	"		0		0.3V_{DD}	V
Input "H"-Level Voltage	$V_{IH}(2)$	S44,S46	Output OFF(DSP1, DSP2-used mode)	0.7V_{DD}		V_{DD}	V
Input "L"-Level Voltage	$V_{IL}(2)$	"	"	0		0.3V_{DD}	V
Input "H"-Level Voltage	$V_{IH}(3)$	CE,CLK,DATA		0.8V_{DD}		6.5	V
Input "L"-Level Voltage	$V_{IL}(3)$	"		0		0.2V_{DD}	V
Recommended External Resistance	R	OSC			51		kohm
Recommended External Capacitance	C	OSC			680		pF
OSC Guaranteed Range	f_{OSC}	OSC		25	50	100	kHz
"L"-Level Clock Pulse Width	$t_{\phi L}$	CLK		0.25			usec
"H"-Level Clock Pulse Width	$t_{\phi H}$	"		0.25			usec
Setup Time	t_{sup}	CLK,DATA		0.25			usec
Data Hold Time	t_{dh}	"		0.25			usec
Serial Data Pulse Width	t_1	CE,DATA		1			usec
"	t_2	CE,CLK		1.25			usec
"	t_3					1	usec
"	t_4			4			usec

Electrical Characteristics under Allowable Operating Conditions

		Pin		min	typ	max	unit
Input "H"-Level Current	$I_{IH}(1)$	CE,CLK,DATA, $\overline{INH}$	V_I=6.5V			5	uA
Input "L"-Level Current	$I_{IL}(1)$	"	V_I=0V			5	uA
Input "H"-Level Current	$I_{IH}(2)$	S44,S46	V_I=V_{DD}			10	uA
Input "L"-Level Current	$I_{IL}(2)$	"	V_I=0V			10	uA
Input "H"-Level Current	$I_{IH}(3)$	AD1,AD2	V_I=V_{DD}			10	uA
Input "L"-Level Current	$I_{IL}(3)$	"	V_I=0V			10	uA
Output "H- Level Voltage	$V_{OH}(1)$	S1 to S53	Io=-10uA	V_{DD}-1.0			V
Output "L- Level Voltage	$V_{OL}(1)$	"	Io=10uA			1.0	V
Output "H"-Level Voltage	$V_{OH}(2)$	COM1,COM2	Io=-100uA	V_{LCD}-0.6			V
Output "L"-Level Voltage	$V_{OL}(2)$	"	Io=100uA			0.6	V

Continued on next page.

DISCONTINUED PRODUCT

Continued from preceding page.

		Pin		min	typ	max	unit
Center Level Voltage	V_{MID}	"	V_{LCD}=6.5V, Io=±100uA	2.65	3.25	3.85	V
"	V_{MID}	"	V_{LCD}=3.0V, Io=±100uA	0.9	1.5	2.1	V
1st Step Lighting Voltage	V_{A1}	S45,S47		$0.07V_{DD}$	$0.1V_{DD}$	$0.13V_{DD}$	V
2nd "	V_{A2}	"		$0.17V_{DD}$	$0.2V_{DD}$	$0.23V_{DD}$	V
3rd "	V_{A3}	"		$0.27V_{DD}$	$0.3V_{DD}$	$0.33V_{DD}$	V
4th "	V_{A4}	"		$0.37V_{DD}$	$0.4V_{DD}$	$0.43V_{DD}$	V
5th "	V_{A5}	"		$0.47V_{DD}$	$0.5V_{DD}$	$0.53V_{DD}$	V
Step Voltage Diff.	V_{step}	"	See Fig.1	$0.09V_{DD}$	$0.1V_{DD}$	$0.11V_{DD}$	V
OSC Frequency	f_{osc}	osc	R=51kohms,C=680pF	40	50	60	kHz
Supply Current	I_{DD}					1	mA
"	I_{LCD}	V_{LCD}				2	mA
Hysteresis Voltage	V_H	CE,CLK,DATA	V_{DD}=5V		0.3		V

Pin Assignment

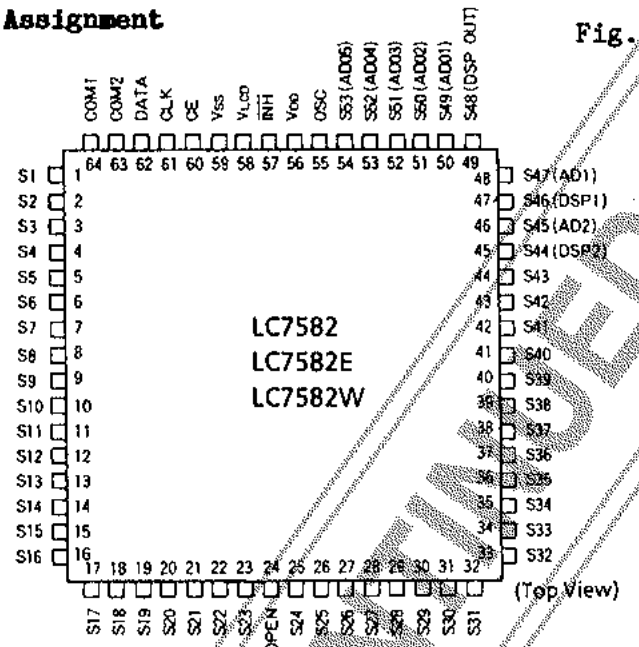
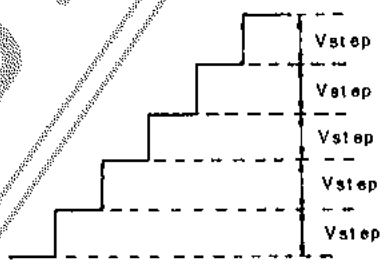
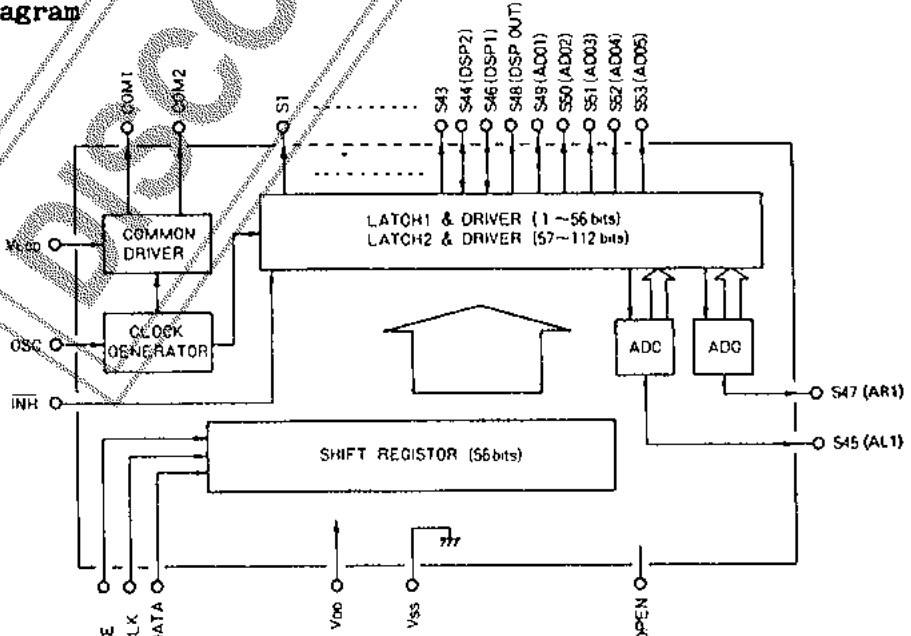


Fig.1 Step Voltage Difference
Input voltage on S45(AD2),S47(AD1)



Block Diagram



DISCONTINUED PRODUCT

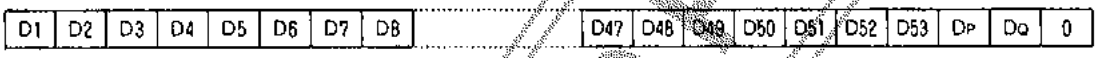
Pin Description

- S1 to S43 : Segment output pin
- S46(DSP1),S44(DSP2) : Segment output or DSP input pin
- S47(AD1),S45(AD2) : Segment output or AD input pin
- S48(DSPOUT) : Segment output or DSP outut pin
- S49 to S53(AD01to5) : Segment output or AD output pin
- COM1,2 : Common output pin (COM1 only is used for 1/1duty and in this case COM2 is open.)
- V_{LCD} : LCD bias voltage setting pin
- OSC : OSC pin
- CE,CLK,DATA : Input pin for serial data transfer
- V_{SS},V_{DD} : Power supply pin
- INH : Display blanking input pin (Available for output driver only. Therefore, serial data can be also transferred during unlighting.)
- OPEN : No connection

Data Transfer Mode

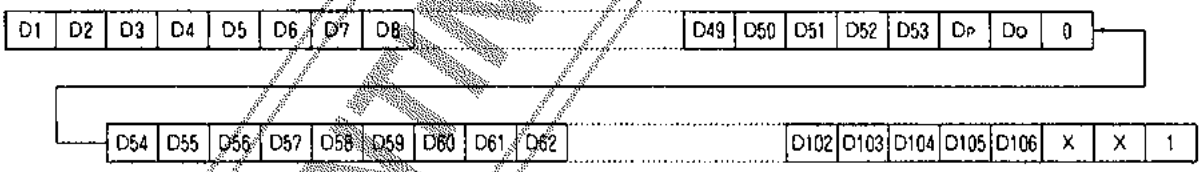
- 1/1duty

Transfer direction (56 bits)



- 1/2duty (When the number of display segments does not exceed 52, transfer data is 56 bits long. Transfer mode is the same as for 1/1 duty. Data of D54 to D106 only cannot be changed.)

Transfer direction (112 bits)



D53, D106: Dummy bit (don't care)

D_1 to D_{53} : Display data (1/1duty) Lighted at "1"
D_1 to D_{106} : Display data (1/2duty) Unlighted at "0"

(Note) When the AD, DSP functions are selected:
1/1duty : D46 to D53 ----- Dummy bit (don't care)
1/2duty : D88 to D106 ---- Dummy bit (don't care)

DP : Drive mode select bit
1/2duty at "1"
1/1duty at "0"

DQ : AD, DSP function select bit
AD, DSP function at "1"
Segment output at "0"

X : Don't care

(Note) When the AD, DSP functions selected are not used, fix the AD1,AD2,DSP1,DSP2 pins at V_{DD} or V_{SS}.

DISCONTINUED PRODUCT

Sample Transfers

. 1/1 duty

D1	D2	D3		D52	D53	0	Do	0

. 1/2 duty and 52 segments or less

D1	D2	D3		D52	D53	1	Do	0

. 1/2 duty and 52 segments or more

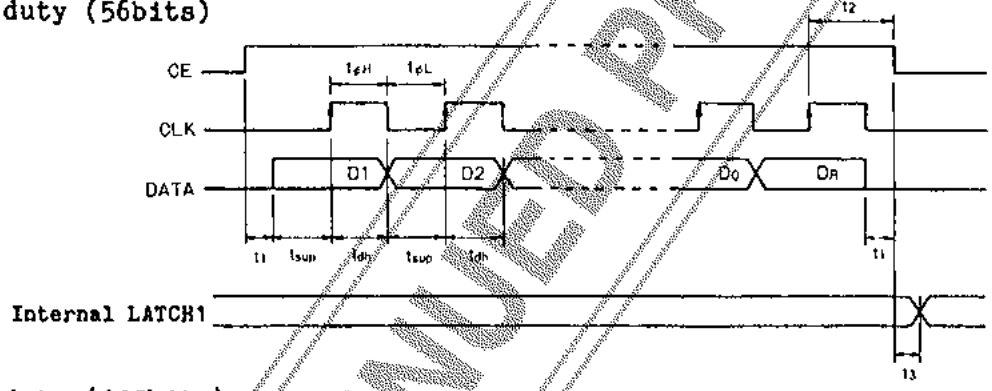
D1	D2	D3		D52	D53	1	Do	0	D54	D56	D57		D105	D106	X	X	1

(Note) 1/2 duty and 52 segments or less do not allow transfer shown below.

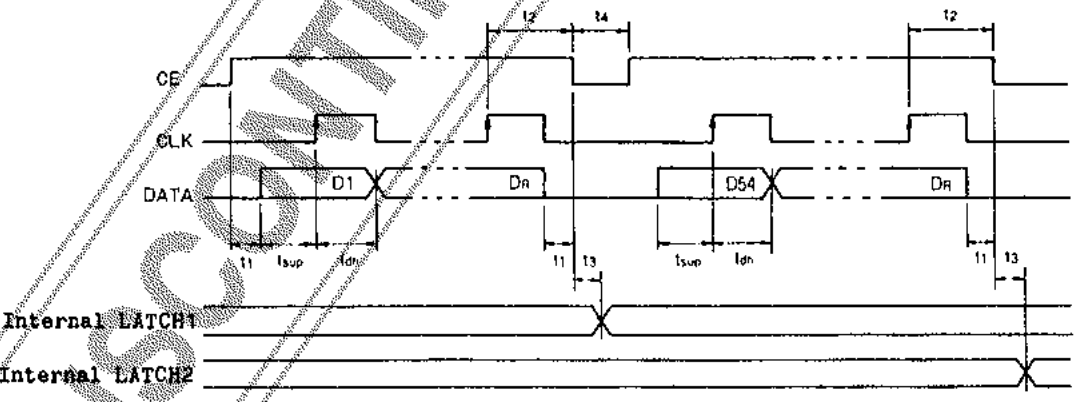
D54	D55	D56		D105	D106	X	X	1

Serial Data

. 1/1 duty (56bits)

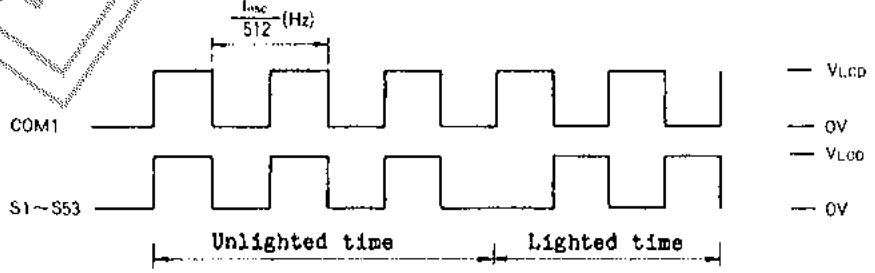


. 1/2 duty (112bits)



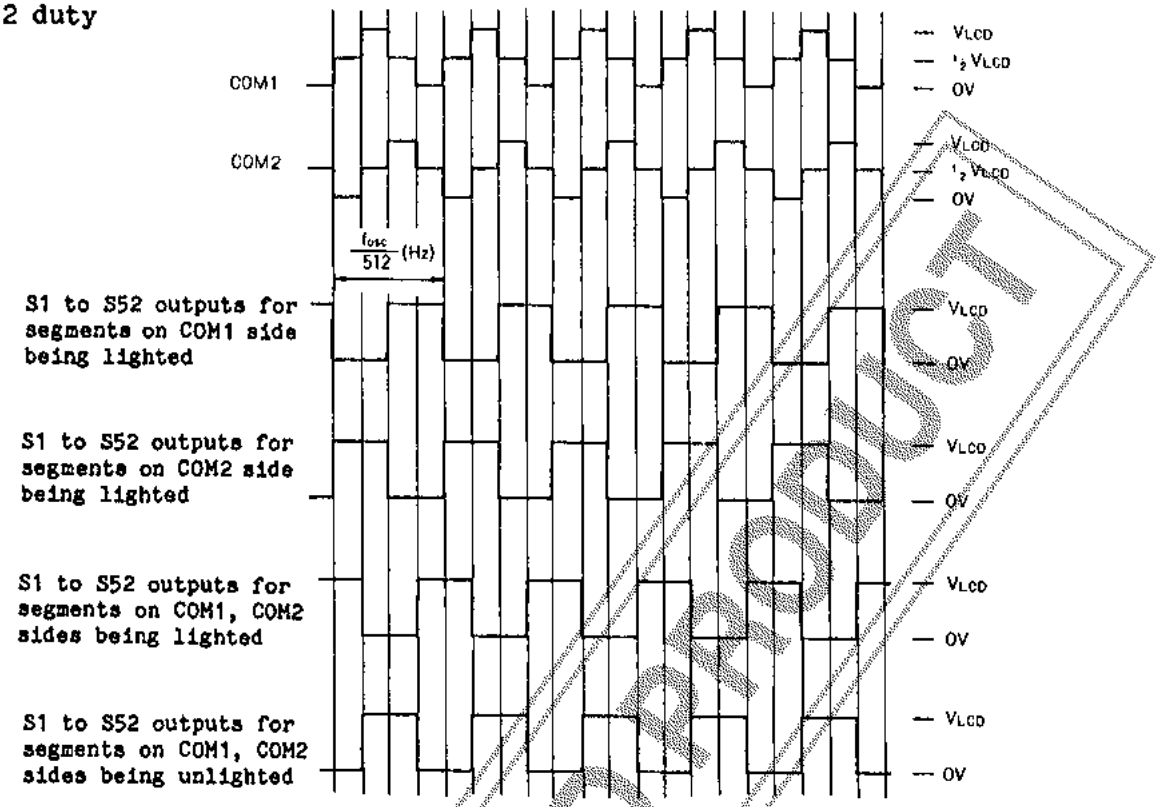
Output Waveforms

. 1/1 duty



DISCONTINUED PRODUCT

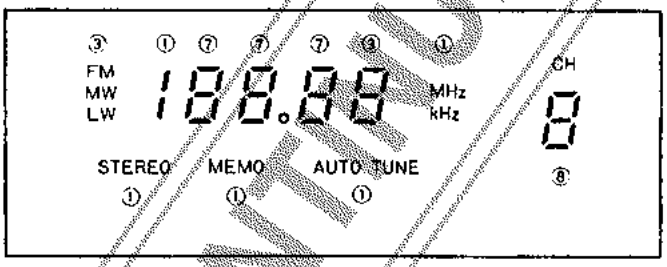
. 1/2 duty



Sample Display

. Static drive (1/1duty) (AD, DSP pins are not used.)

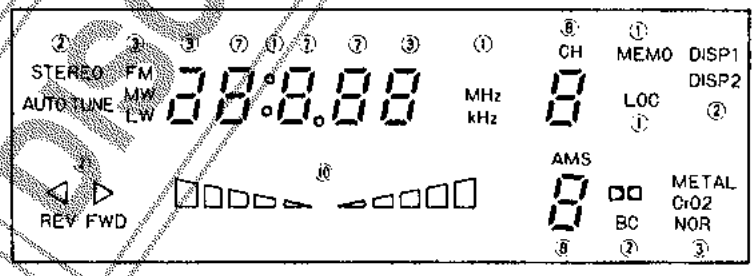
40 segments-used application (Up to 53 segments usable)



Note: ○ : Number of segments

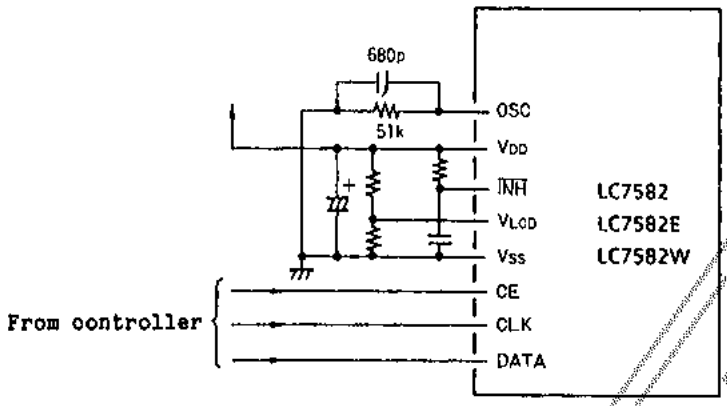
. 1/2duty drive

71 segments-used application (Up to 104 segments usable)

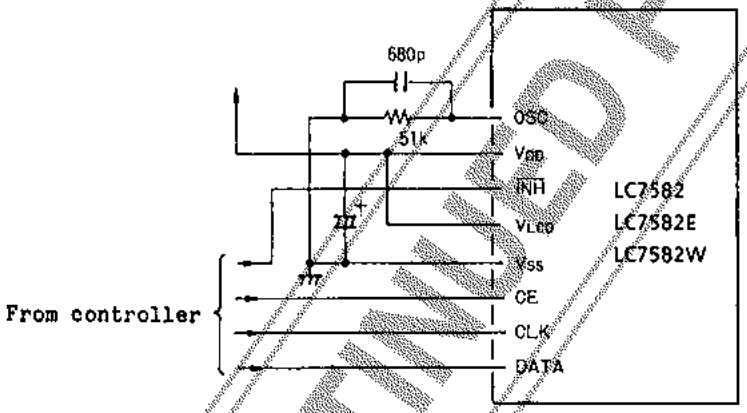


DISCONTINUED Product

Sample Application Circuit 1



Sample Application Circuit 2



Note) The internal display data is indeterminate immediately after V_{DD} rise. If the display is kept lighted as it is, the display will have no meaning. The display is forced to be unlighted when the $\overline{INH}$ is at "L" level. Do not release ("H") until the transfer of display data from the controller is completed.

DISCONTINUED PRODUCT

Correspondence between Transfer (External Input) Data and Output Pin

(Note) COM1 only is used at 1/1 duty.

DP	0		1		COM1	COM2
DQ	0	1	0	1		
Output pin	1/1 duty		1/2 duty			
S1	D1	D1	D1	D1	○	
			D2	D2		○
S2	D2	D2	D3	D3	○	
			D4	D4		○
S3	D3	D3	D5	D5	○	
			D6	D6		○
⋮	⋮	⋮	⋮	⋮	⋮	⋮
S26	D26	D26	D51	D51	○	
			D52	D52		○
S27	D27	D27	D54	D54	○	
			D55	D55		○
S28	D28	D28	D56	D56	○	
			D57	D57		○
⋮	⋮	⋮	⋮	⋮	⋮	⋮
S43	D43	D43	D86	D86	○	
			D87	D87		○
S44	D44	D44	D88	※DSP 2	○	
			D89			○
S45	D45	D45	D90	※ALI	○	
			D91			○
S46	D46	※DSP 1	D92	※DSP 1	○	
			D93			○
S47	D47	※ARI	D94	※ARI	○	
			D95			○
S48	D48	※DISPO1	D96	※DSPO1	○	
			D97	※DSPO2		○
S49	D49	※ARO1	D98	※ARO1	○	
			D99	※ALO1		○
S50	D50	※ARO2	D100	※ARO2	○	
			D101	※ALO2		○
S51	D51	※ARO3	D102	※ARO3	○	
			D103	※ALO3		○
S52	D52	※ARO4	D104	※ARO4	○	
			D105	※ALO4		○
S53	D53	※ARO5	Always lighting	※ARO5	○	
			Always lighting	※ALO5		○

Discontinued Product

Note

- DSP1 : External display input data name. The output is DSPO1.
- DSPO1 : External display output data name. The input is DSP1.
- DSP2 : External display input data name. The outut is DSPO2.
- DSPO2 : External display output data name. The input is DSP2.
- ARI : AD converter input data name. The output is ARO1 to 5.
- ARO1 to 5 : AD converter output data name. The input is ARI.
- ALI : AD converter input data name. The output is ALO1 to 5.
- ALO1 to 5 : AD converter output data name. The input is ALI.

OSC Frequency

When determining the OSC frequency, see below.

Fig. 1 OSC Frequency at OSC Pin vs. CR

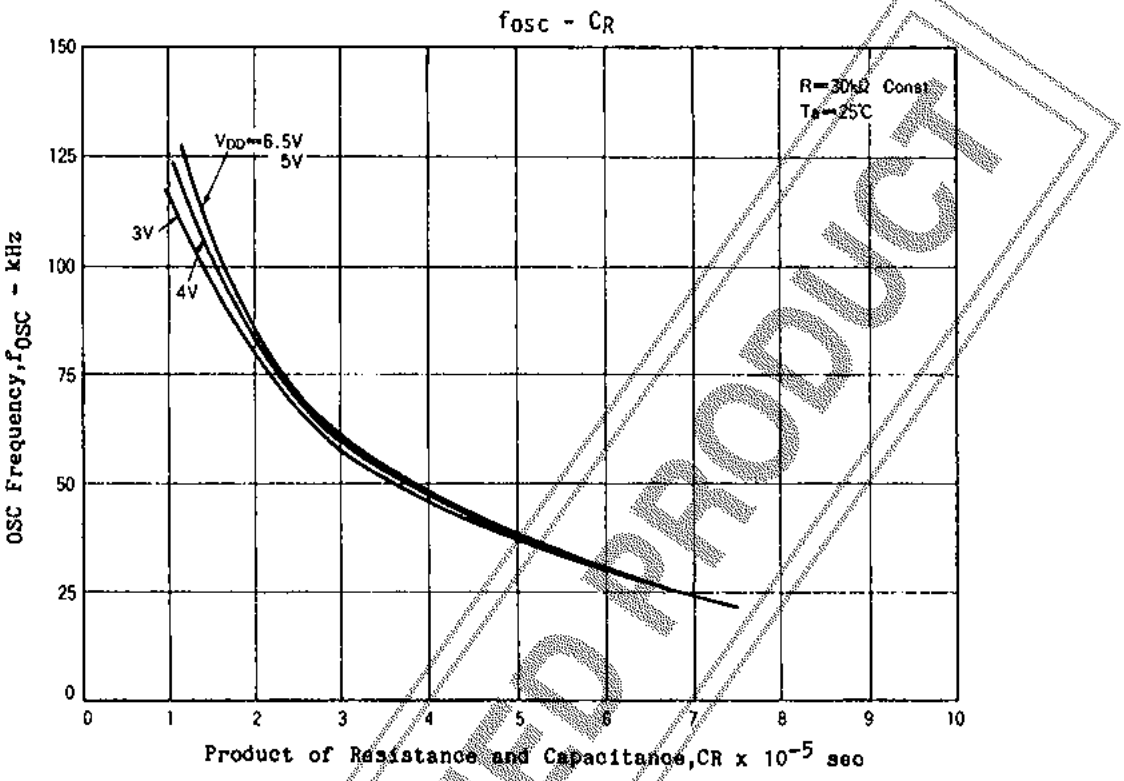
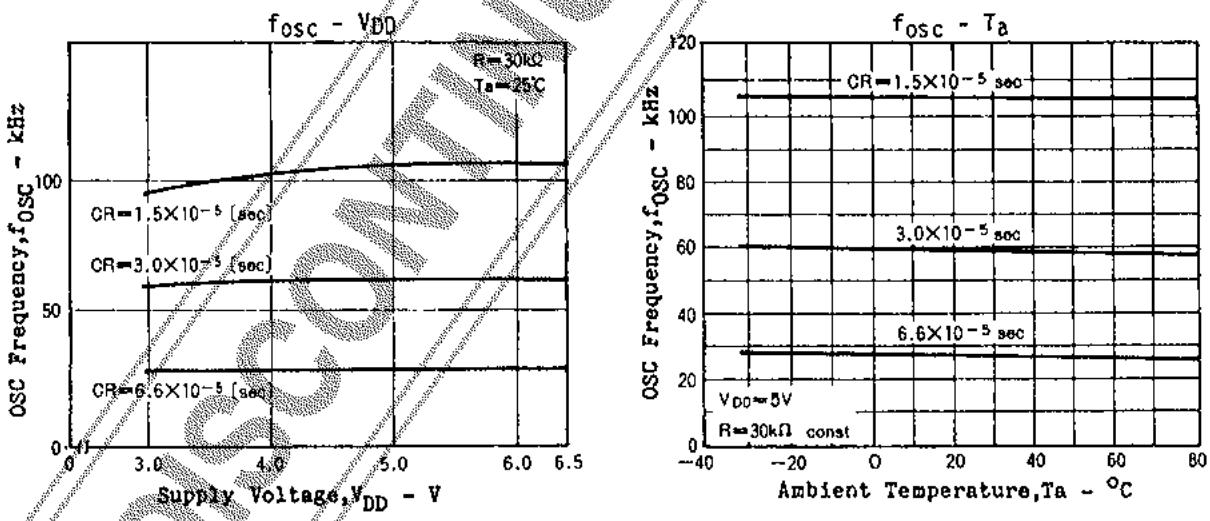


Fig. 2 OSC Frequency at OSC Pin vs. V_{DD}



Recommended external resistor value 10kohms to 100kohms (carbon)

Recommended external capacitor value 330pF to 3300pF
330pF to 820pF (ceramic, temperature coefficient: 0)
1000pF to 3300pF (polyester, temperature coefficient: plus)

DISCONTINUED PRODUCT

Information (including circuit diagrams and circuit parameters) herein is for example only; it is not guaranteed for volume production. SANYO believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringements of intellectual property rights or other rights of third parties.