

CERAMIC RESONATOR



Ceramic Resonator CST/CSTS Series

CERALOCK[®] with built in loading capacitors.

MURATA's ceramic resonator, CERALOCK[®], has been widely applied as the most suitable component for clock oscillators in a broad range of microprocessors. The CSTS series (MHz Band) and CST series (MHz band) can be used in the design of oscillation circuits not requiring external load capacitors, enabling both high-density mounting and cost reduction.

■FEATURES

1. Oscillation circuits do not require external load capacitors.
2. The series is stable over a wide temperature range.
3. The resonators are compact, light weight and exhibit superior shock resistance performance.
4. They enable the design of oscillator circuits requiring no adjustment.
5. The series is inexpensive and available in stable supply.
6. There are some variation of built-in capacitance value to apply various of IC.



■APPLICATIONS

- DTMF generators
- Remote control units
- Clock oscillators for microcomputers
- Automated office equipment
- Automotive electronics (Suffixed "A" ex. CSTS-MGA)

■SPECIFICATIONS

Type	CSTS Series		CST Series	
	CSTS□MG03/06	CST□MTW	CST□MXW040	
Item				
Frequency Range	2.00–10.00MHz	10.01–13.00MHz	13.01–60.00MHz	
Oscillation Frequency Initial Tolerance	±0.5%	±0.5%	±0.5%	
Oscillation Frequency Temperature Stability*1	±0.2%	±0.4%	±0.3%	
Aging*2	±0.2%	±0.3%	±0.3%	
Oscillation Frequency Test Circuit	<p>IC : 1/6CD4069UBEX2*3 V_{DD} : 5V (MTW series:12V) X : CERALOCK[®] R_d : 680Ω*4</p>			

*1 At -20 to +80°C (Temperature Condition). This value varies for built-in capacitance of the CSTS series.

*2 For 10years at room temperature .

*3 TC74HCU04 is used as the standard circuit for the MXW040 series. TC4069UBE is used as the standard circuit for the CSTS□MG03 series.

*4 This resistance value applies to the CSTS□MG06 series.

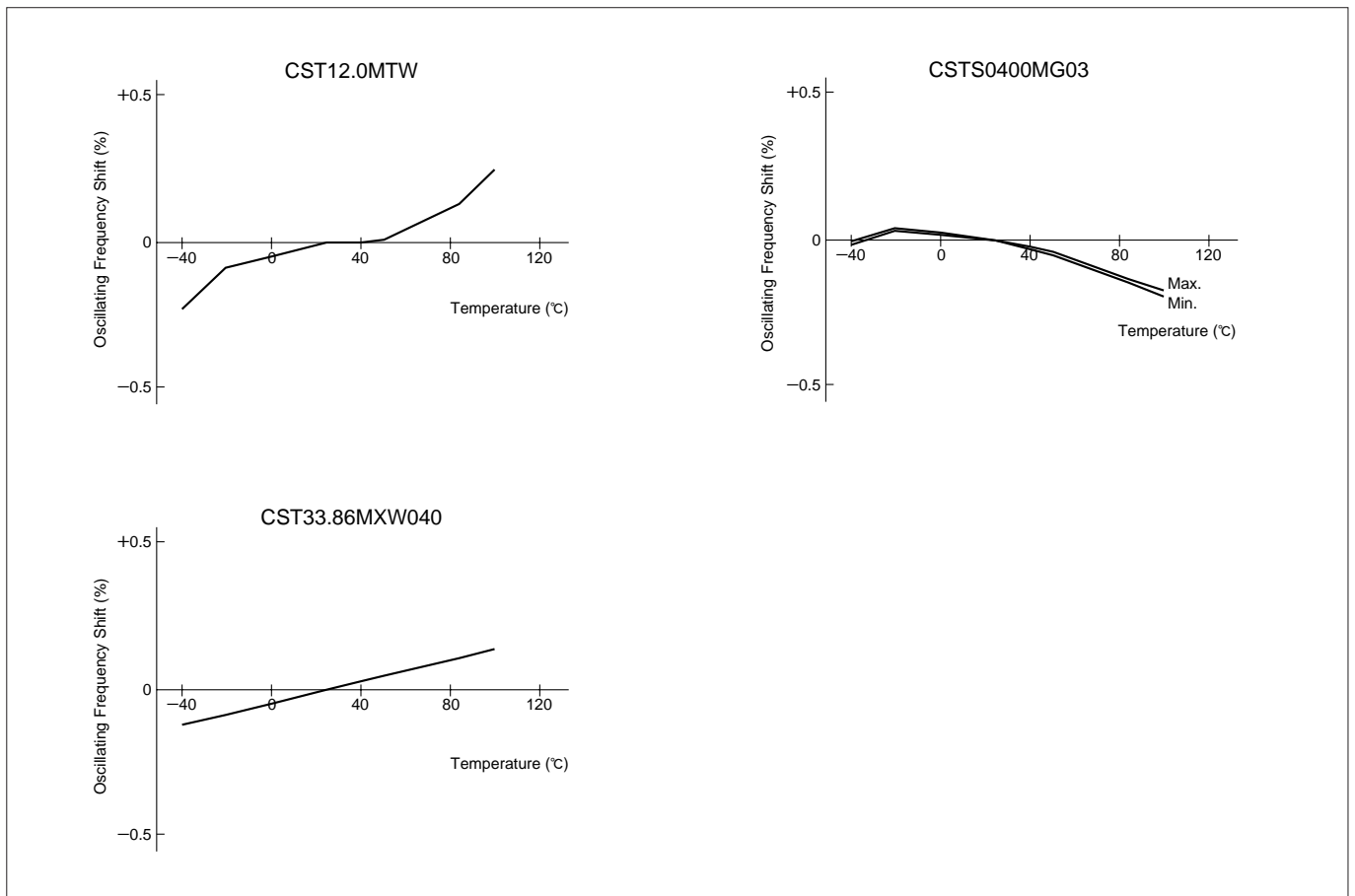
*5 If connected with incorrect orientation, the above specification may not be guaranteed.

■ DIMENSIONS

Frequency	2.00—10.00MHz	10.01—13.00MHz	13.01—60.00MHz
Part Number	CSTS□MG	CST□MTW	CST□MXW
Dimensions (in mm)			

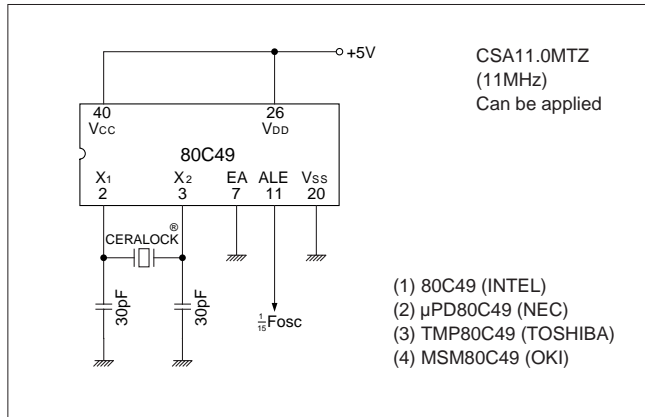
- *1 2.00—3.39MHz: 9.0±1.0mm.
- *2 2.00—3.39MHz: 4.0±1.0mm.
- *3 13.01—14.99MHz: 9.0mm max., 33.00—60.00MHz:7.0mm max.

■ THE STABILITY OF OSCILLATION FREQUENCY WITH TEMPERATURE VARIATION

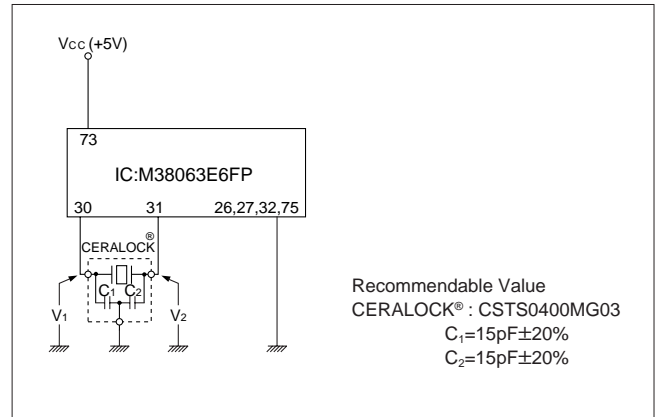


■APPLICATION CIRCUITS UTILIZING THE CERALOCK®

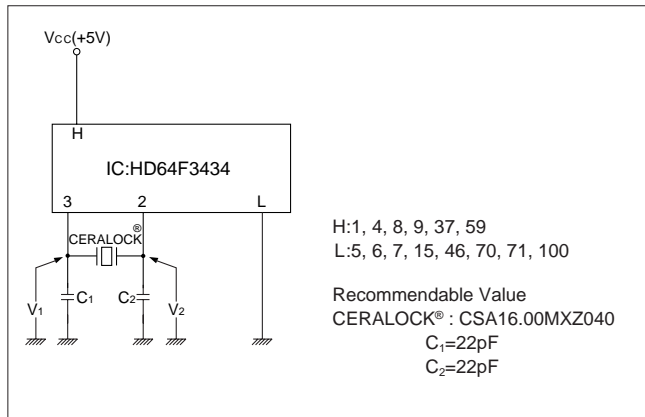
Application to 80C49 (8-bit Microcomputer)



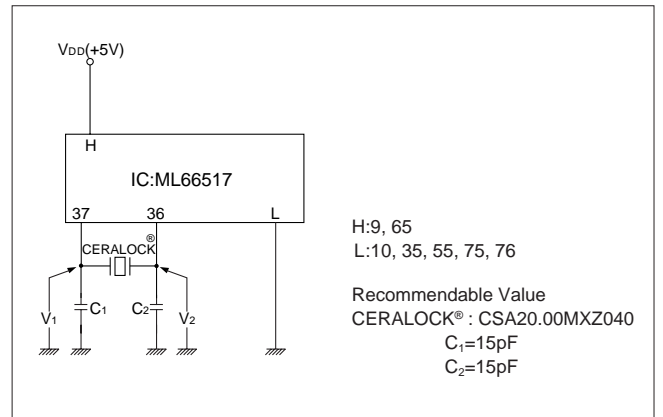
Application to M38063E6FP (MITSUBISHI) (8-bit Microcomputer)



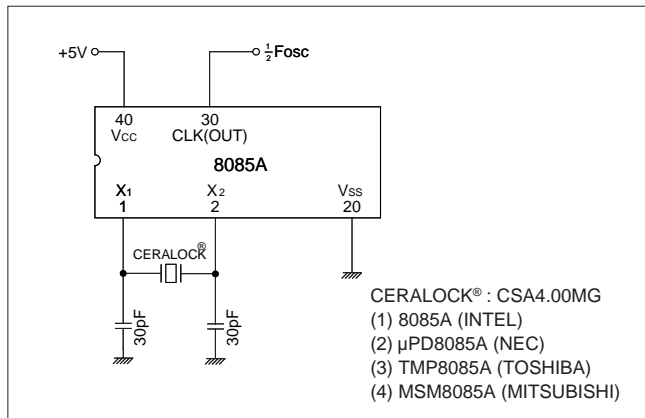
Application to HD64F3434 (HITACHI) (8-bit Microcomputer)



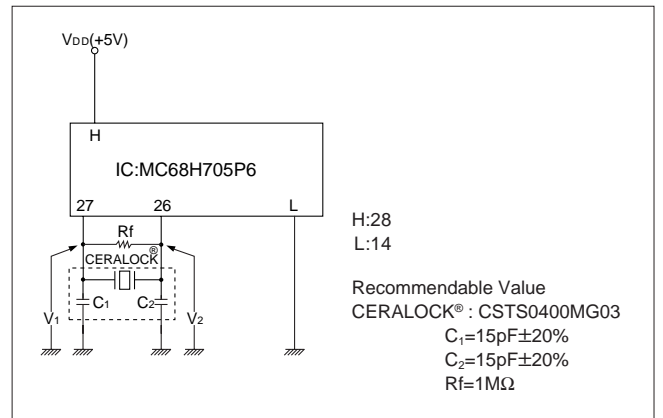
Application to ML66517 (8-bit Microcomputer)



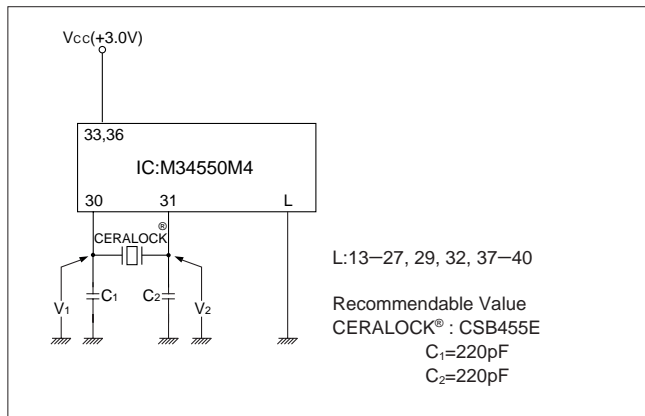
Application to 8085 (8-bit Microcomputer)



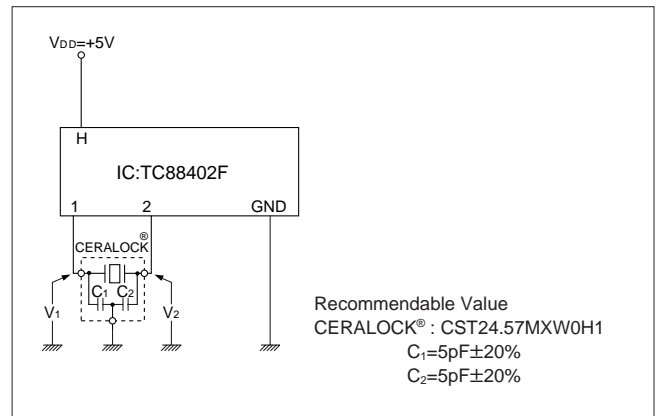
Application to MC68HC705P6 (MOTOROLA) (8-bit Microcomputer)



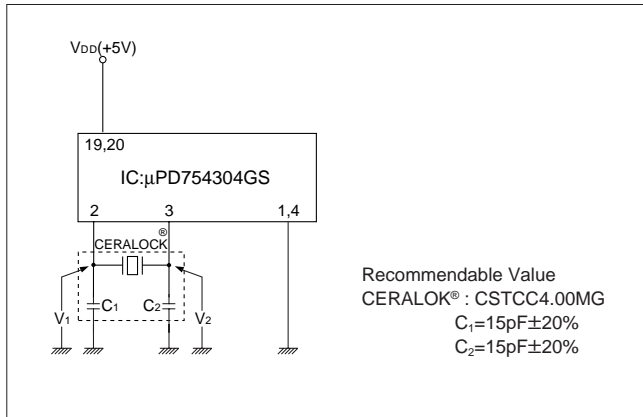
Application to M34550M4 (MITSUBISHI) (Remote Control Unit)



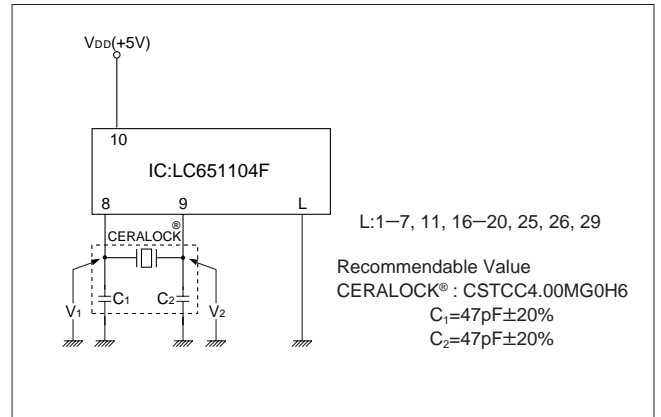
Application to TC88402F (TOSHIBA) (Speech Synthesizer)



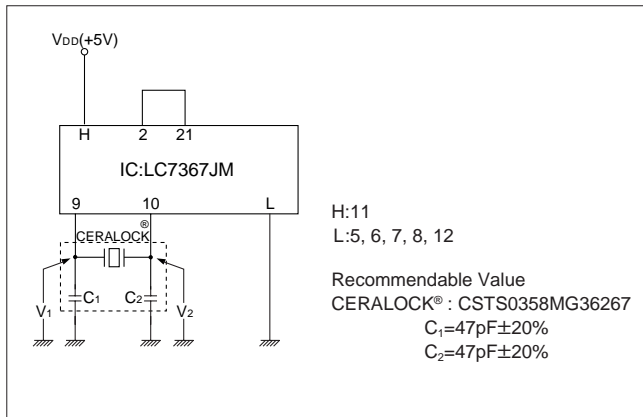
Application to μ PD754304GS (4-bit Microcomputer)



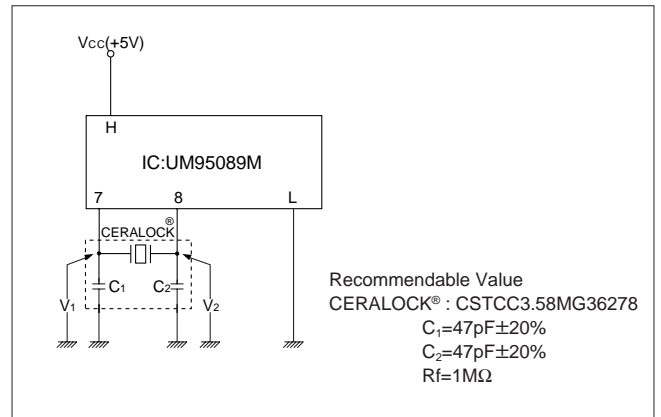
Application to 651104F (SANYO) (4-bit Microcomputer)



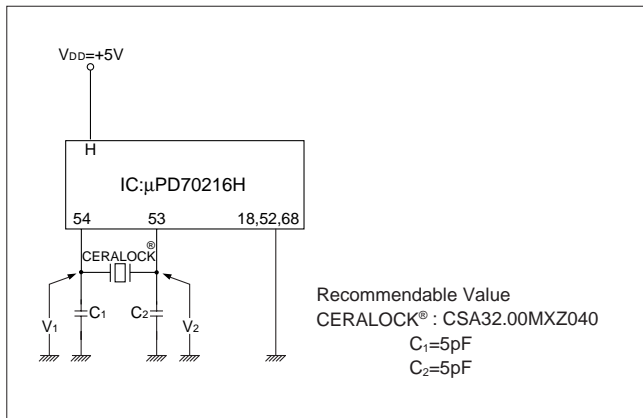
Application to LC7367JM (SANYO) (Tone / Pulse Dialer)



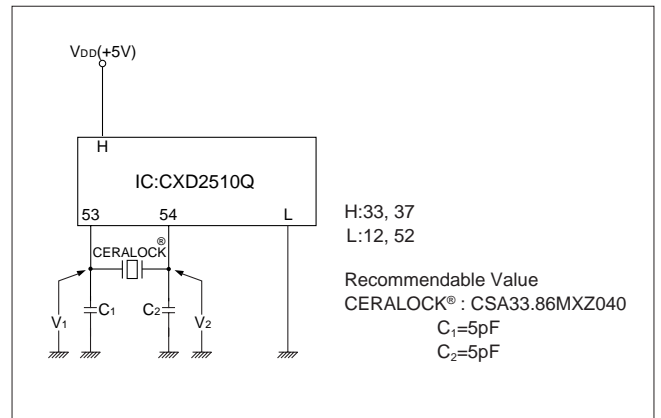
Application to UM95089M (UMC) (Tone / Pulse Dialer)



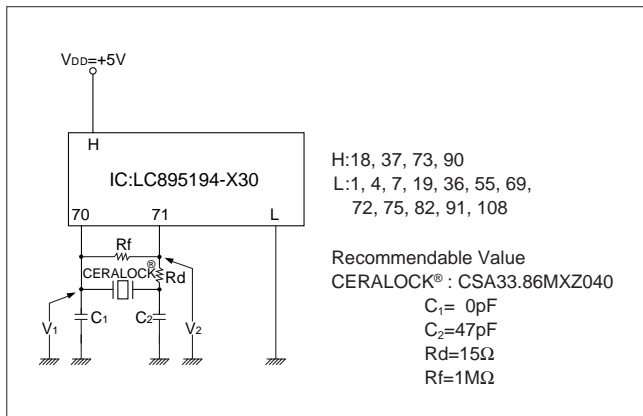
Application to μ PD70216H (NEC) (16-bit Microcomputer)



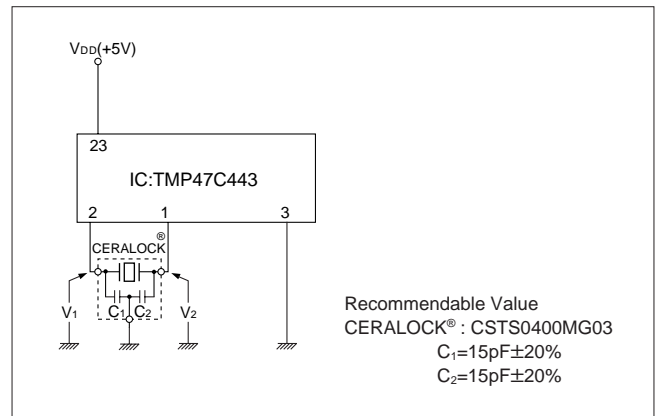
Application to CXD2510Q (SONY) (Digital Signal Processing IC for CD)



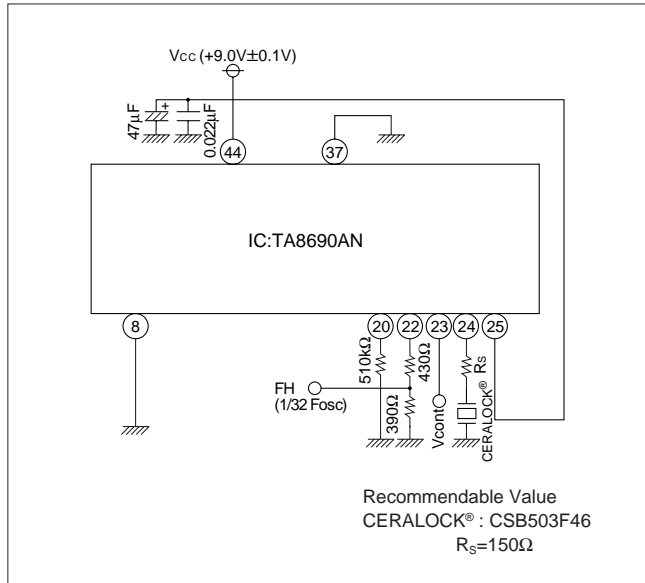
Application to LC895194-X30 (SANYO)



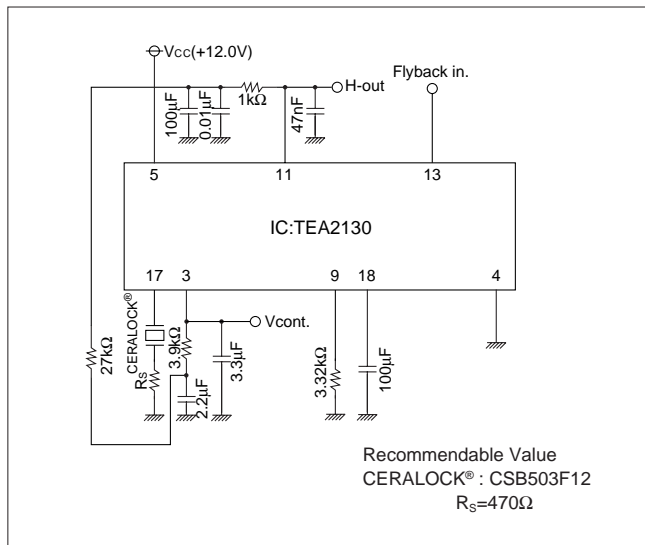
Application to TMP47C443 (TOSHIBA) (4-bit Microcomputer)



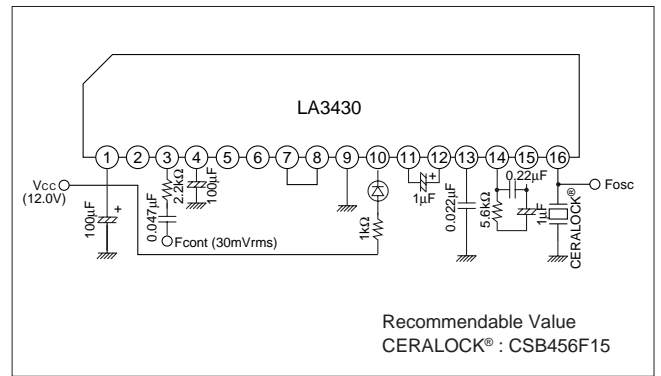
Application to TA8690AN (TOSHIBA)
 (TV Horizontal / Vertical Synthesizer Circuit)



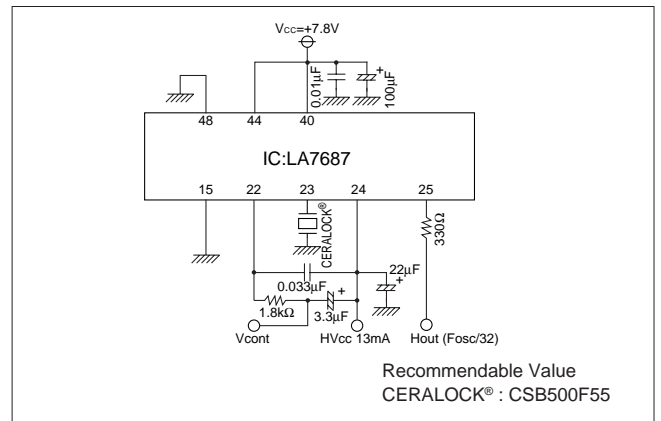
Application to TEA2130 (THOMSON)
 (TV Horizontal / Compatible with synthesizer Circuit)



Application to LA3430 (SANYO) (FM Stereo MPX)



Application to LA7687 (SANYO)
 (TV Horizontal Synthesizer Circuit)



Oscillation Circuit incorporating Transistor

