## MK 50010/1/2

FEATURES:Hours, Minutes - Date, Seconds$32,768 \mathrm{~Hz}$ quartz oscillator time base operation for both dynamic and field effect liquid crystalsBuild-in gated pulse-generator with sense-input for voltage conversionMicrowatt power dissipationOne-half to 1 sec delay in the updating commands for better human interactionDebounced updateSingle-pole grounding switches for display change and updateLow - $\mathrm{V}_{\mathrm{DD}}$ - sense that turns display off to avoid destruction of liquid crystal displaySpecial synchronizing mode that enables user to synchronize the watch in a simple operation if error is less than 30 seconds
Pinout matches most existing displays
64 Hz input to operate as decoder only DESCRIPTION:
These three circuits are designed for a single chip CMOS watch/click with liquid crystal display.

MK 50010 - 4-digit, 12 -hours with date and seconds
MK 50011 - 4-digit, 24 hours with date and seconds
MK 50012-31/2-digit, 12 hours with seconds
All versions display continously HRS on the left two or one-and-half digits and MIN on the right two digits. By pressing the display button, the types 50010 and 50011 will change the display to DATE on the left and SEC on the right, while version 50012 is blanked on the left and displays SEC on the right. The digits may be separated by a colon that blinks with a 1 Hz rate if the watch is running.

## LIQUID CRYSTAL WATCH CIRCUIT



