

Sensors

MC34940 Electric-Field Imaging Device

Overview

Freescal Semiconductor's MC34940 is intended for use in detecting objects in an electric field. The IC generates a low-frequency sine wave. The frequency is adjustable by using an external resistor and is optimized for 120 kHz. The sine wave has very low harmonic content to reduce harmonic interference.

The MC34940 is intended for cost-sensitive applications where non-contact sensing of objects is desired. When connected to external electrodes, an electric field is created. The MC34940 also contains support circuits for a microcontroller unit (MCU) to allow the construction of a two-chip electric-field system.

Typical Applications

- Appliance control panels and touch sensors
- Linear and rotational sliders
- Spill over flow sensing measurement
- Refrigeration frost sensing
- Industrial control and safety systems security
- Proximity detection for wake-up features
- Touch screens
- Garage door safety sensing
- PC peripherals
- Patient monitoring
- Point-of-sale terminals
- Size detection
- Liquid level sensing

Features

- Supports up to seven electrodes
- Shield driver for driving remote electrodes through coaxial
- High-purity sine wave generator tunable with external resistor
- Response time tunable with external capacitor
- Support for up to 28 touch pad sensors
- Pb free and RoHS compliant

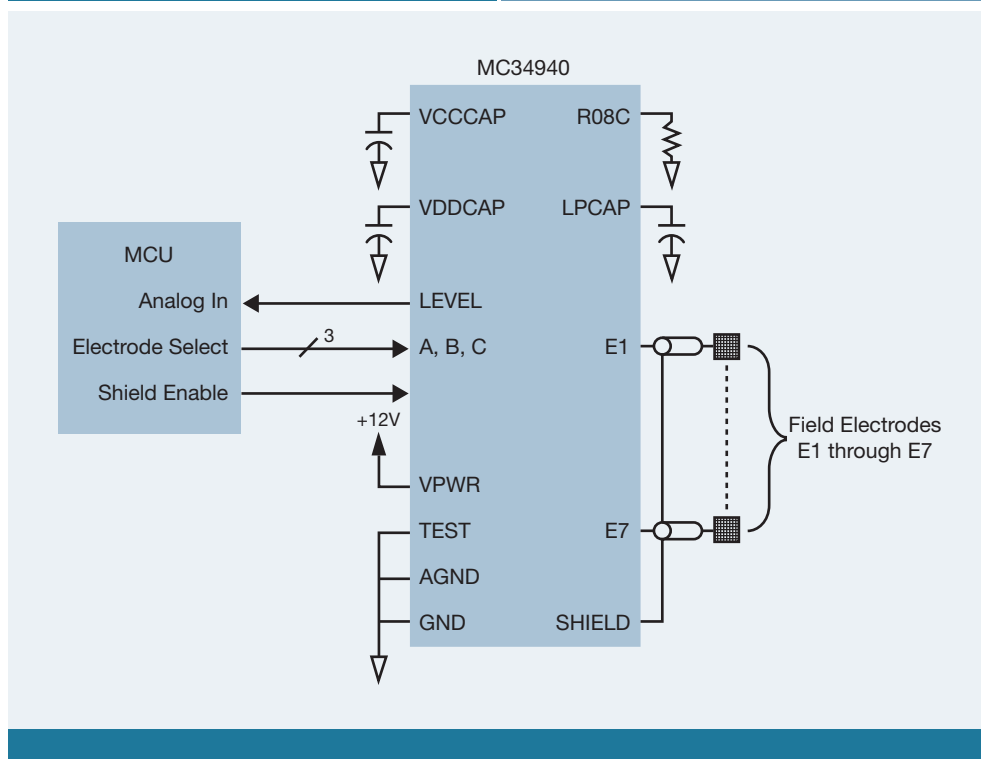
Benefits

- One device can simultaneously support multifunctional applications
- Cost effective
- Low component count—saves space
- Adaptable functionality

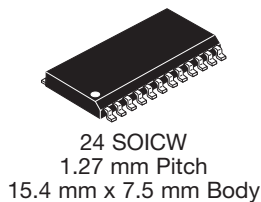
Performance	Typical Values
Output Voltage	0–5.0V
ESD (HBM)	± 2000V
Operating Temperature	0°C ≤ TA ≤ +90°C
Junction Temperature	0°C ≤ TJ ≤ +150°C

Ordering Information	
Device	**34940EG/R2
Temperature Range (TA)	0°C to +90°C
Package	24 SOICW
Data Sheet Order Number	MC34940
Prefix Index	PC = Engineering Samples; MC = Production
Development Tool Available	DEMO1985MC34940E
Devices Available for Sensor Reference in the Product Selector Guide	SG1010

MC34940 Block Diagram



Package Option



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For current information about Freescale products and documentation, please visit www.freescale.com/sensors.