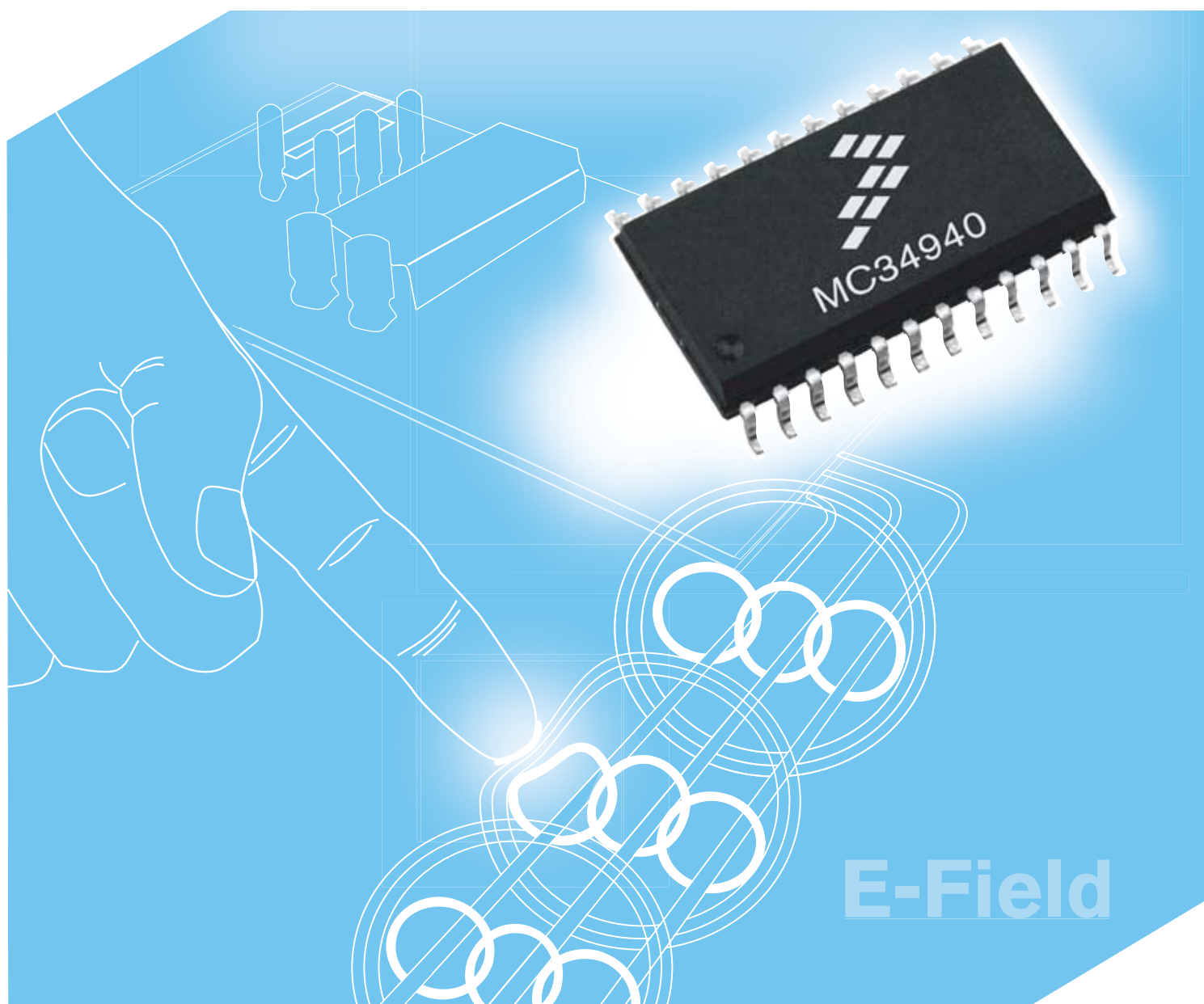


Sensor Products

Electric-Field Sensing IC MC34940.



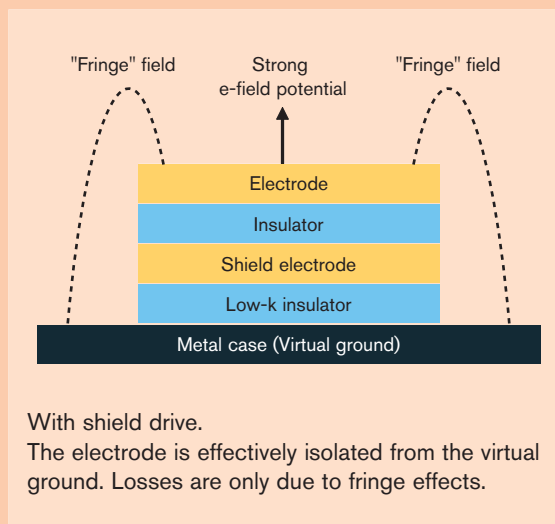
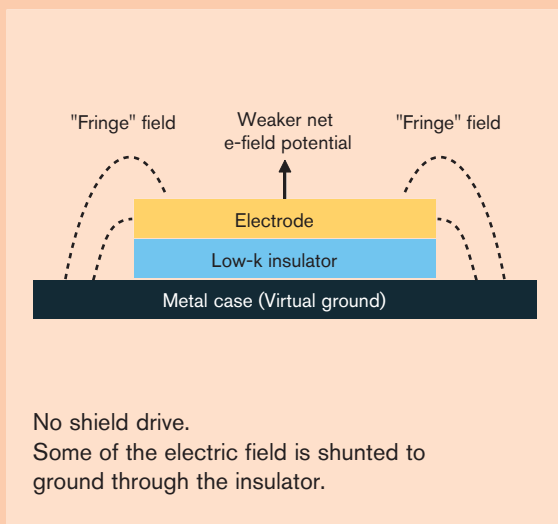
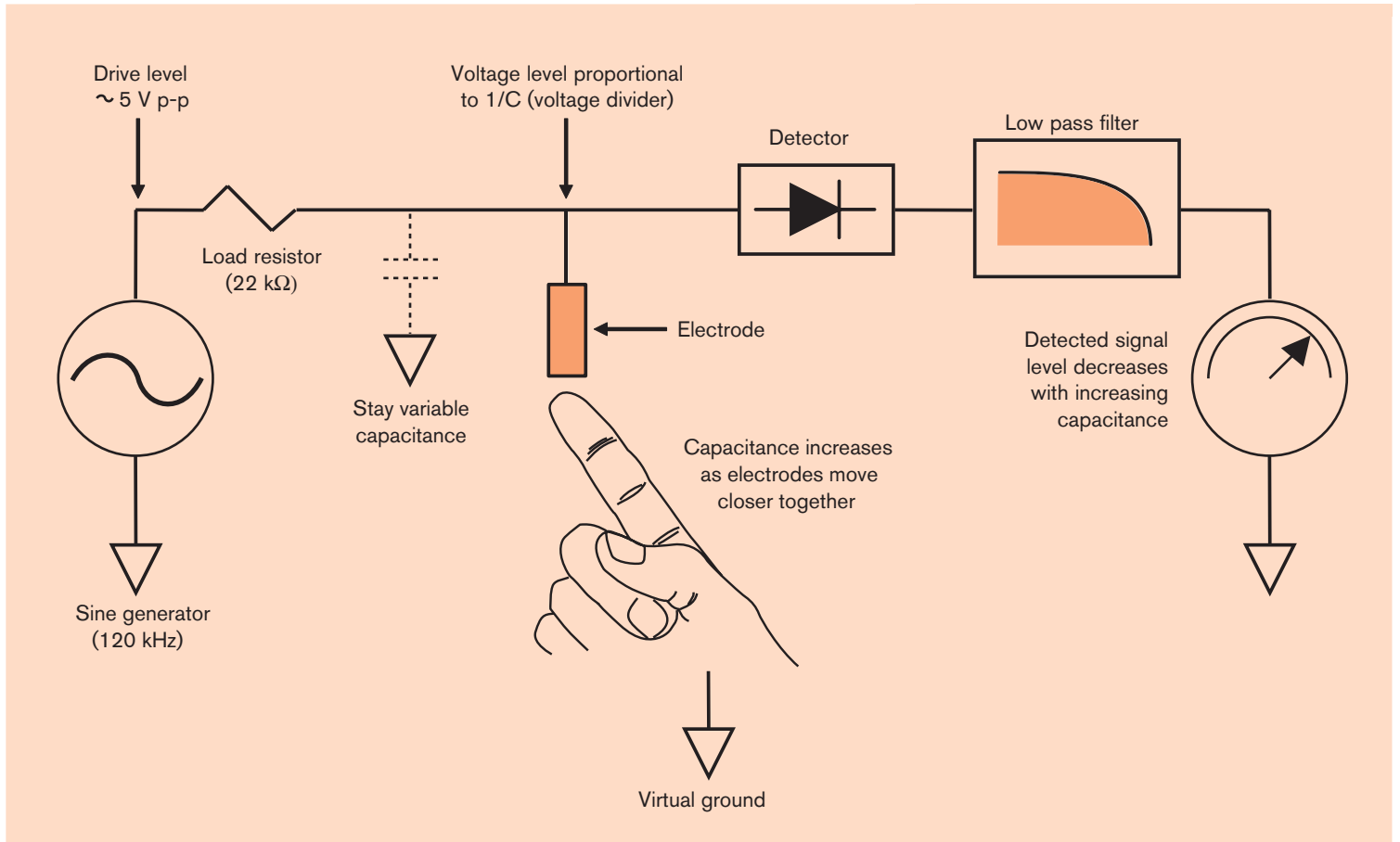
Contactless Sensing

MC34940 Electric Field Imaging Device

Freescale 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.



Both electrode and shield signals have identical amplitude and phase, minimising the electric field. The shield signal is a low impedance source able to drive capacitive loads, i.e. coaxial cables.

MC34940

Main Features

- > Supports up to 7 electrodes
- > Supports up to 28 touch pad sensors
- > Shield driver for driving remote electrodes through coaxial cable
- > High-Purity sine wave generator tunable with external resistor
- > Response time tunable with external capacitor
- > Requires 9 V-18 V unregulated supply @ 8 mA

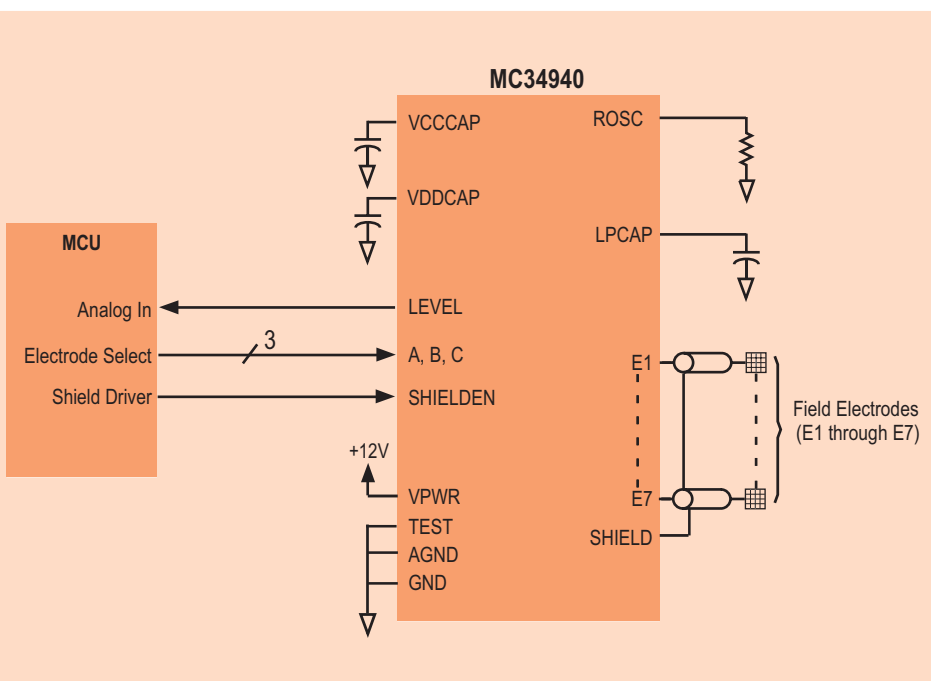
Benefits

- > One device simultaneously supports multifunctional applications
- > Low cost
- > Low component count - saves space

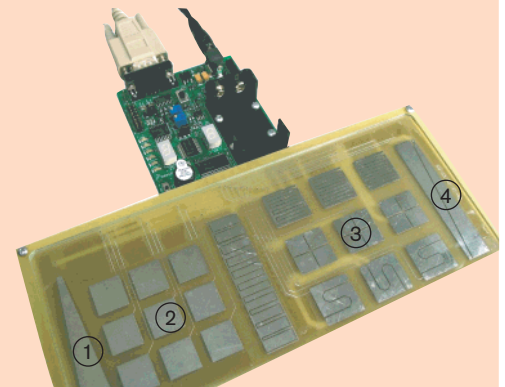
Typical Applications

- > Appliance control panels and touch sensors
- > Liquid level sensing

- > Spill over flow sensing measurement
- > Refrigeration frost sensing
- > Industrial control and safety systems
- > Security
- > Garage door safety sensing
- > PC peripherals
- > Patient monitoring
- > Point of sale terminals
- > Proximity detection
- > Size and shape detection



TOUCH PAD DEMONSTRATOR



- ① Single slide bar
- ② Single pads
- ③ Multiplexed pads
- ④ Differential slide bar

ELECTRIC-FIELD SENSING ICs

Freestyle Reference	Electrode / Channels	Operating Voltage	Regulated Voltage	Transceiver	Lamp Driver	Package	Temp. Range
MC33794VW	9+2	9 V-18 V	5 V	ISO-9141	0.70A min.	HSOP44	-40°C to +85°C
MC33794EK	9+2	9 V-18 V	5 V	ISO-9141	0.70A min.	SO54WB	-40°C to +85°C
MC34940EG	7	9 V-18 V	-	-	-	SO24WB	0°C to +90°C



Evaluation Board Kits Reference

- > [EVB](#) KIT33794DWBEVM
- > [EVB](#) DEMO1985MC34940E

