

Safety and Alarm Integrated Circuits Series

Safety and Alarm Integrated Circuits

Freescale Semiconductor has been producing both photoelectronic and ionization safety and alarm integrated circuits (ICs) for more than 15 years. Used in consumer and commercial applications worldwide, these ICs can be operated using a battery or AC/DC power. In addition, these devices are designed to be used in stand-alone units or as an interconnected system of up to 40 units. All of Freescale's safety and alarm ICs have component recognition from Underwriters Laboratories, Inc.® and the newest devices meet the National Fire Protection Association's (NFPA) new "temporal three" horn pattern. The latest 6000 and 7000 series designs include a mute feature and alarm memory.

Freescale's smoke detector and safety and alarm ICs are low-power, CMOS devices designed to meet a wide range of alarm detector applications at very competitive prices. A recent addition to the product portfolio is a general-purpose alarm IC with a horn driver, LED and low-battery signaling capabilities.

SAFETY AND ALARM INTEGRATED CIRCUITS

Device	Type	Operating Voltage (V)	Horn Pattern	Primary Power Source	Interconnectable	Silence Feature	Package
MC14467	Ion	6.0–12	Continuous	DC	No	No	DIP
MC14468	Ion	6.0–12	Continuous	AC/DC	Yes	No	DIP
MC15468	Ion	6.0–12	Continuous	AC/DC	Yes	No	DIP
MC145017	Ion	6.0–12	Temporal	DC	No	No	DIP
MC145018	Ion	6.0–12	Temporal	AC/DC	Yes	No	DIP
MC145010	Photo	6.0–12	Continuous	AC/DC	Yes	No	DIP/SOIC
MC145011	Photo	6.0–12	Continuous	AC	Yes	No	DIP/SOIC
MC145012	Photo	6.0–12	Temporal	AC/DC	Yes	No	DIP/SOIC
MC146010	Photo	6.0–12	Continuous	AC/DC	Yes	Yes	DIP/SOIC
MC146012	Photo	6.0–12	Temporal	AC/DC	Yes	Yes	DIP/SOIC
MC147010*	Photo	6.0–12	Continuous	AC/DC	Yes	Yes	DIP/SOIC
MC147012*	Photo	6.0–12	Temporal	AC/DC	Yes	Yes	DIP/SOIC
MC14578	Comparator	3.5–14	No Horn Drvr	AC/DC	N/A	N/A	DIP
MC14600	Gen Alarm	6.0–12	Continuous	AC/DC	N/A	N/A	DIP/SOIC

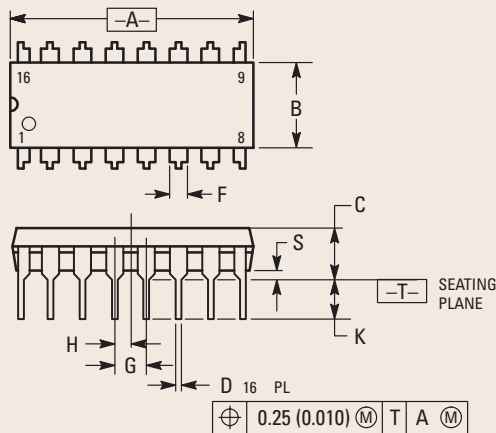
*The 7000 series is designed to comply with the BSI silence feature requirements.

Features

- > Low power consumption
- > Horn driver
- > LED driver
- > Low-battery detection
- > Internal/external alarm detect threshold set
- > Detect comparator output to drive other signals
- > Silence feature for disabling horn
- > Alarm memory to identify originating alarm unit



PDIP PHYSICAL DIMENSIONS



NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. DIMENSION L TO CENTER OF LEADS WHEN FORMED PARALLEL.
4. DIMENSION B DOES NOT INCLUDE MOLD FLASH.
5. ROUNDED CORNERS OPTIONAL.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.740	0.770	18.80	19.55
B	0.250	0.270	6.35	6.85
C	0.145	0.175	3.69	4.44
D	0.015	0.021	0.39	0.53
F	0.040	0.070	1.02	1.77
G	0.100 BSC		2.54 BSC	
H	0.050 BSC		1.27 BSC	
J	0.008	0.015	0.21	0.38
K	0.110	0.130	2.80	3.30
L	0.295	0.305	7.50	7.74
M	0"	10"	0"	10"
S	0.020	0.040	0.51	1.01

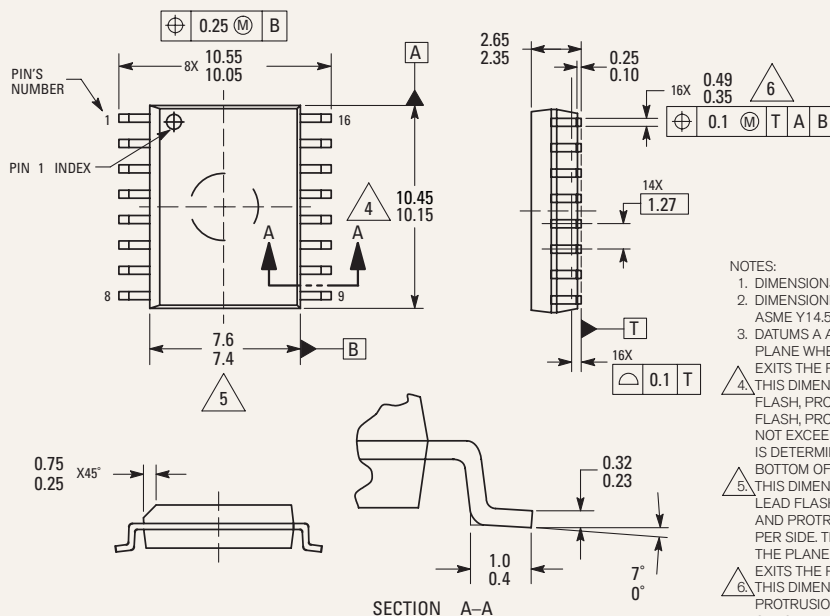
STYLE 1:

- PIN 1: CATHODE
2. CATHODE
3. CATHODE
4. CATHODE
5. CATHODE
6. CATHODE
7. CATHODE
8. CATHODE
9. ANODE
10. ANODE
11. ANODE
12. ANODE
13. ANODE
14. ANODE
15. ANODE
16. ANODE

STYLE 2:

- PIN 1: COMMON DRAIN
2. COMMON DRAIN
3. COMMON DRAIN
4. COMMON DRAIN
5. COMMON DRAIN
6. COMMON DRAIN
7. COMMON DRAIN
8. COMMON DRAIN
9. GATE
10. SOURCE
11. GATE
12. SOURCE
13. GATE
14. SOURCE
15. GATE
16. SOURCE

SOIC PHYSICAL DIMENSIONS



NOTES:

1. DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
3. DATUMS A AND B TO BE DETERMINED AT THE PLANE WHERE THE BOTTOM OF THE LEADS EXITS THE PLASTIC BODY.
4. THIS DIMENSION DOES NOT INCLUDE MOLD FLASH, PROTRUSION OR GATE BURRS. MOLD FLASH, PROTRUSION OR GATE BURRS SHALL NOT EXCEED 0.15 mm PER SIDE. THIS DIMENSION IS DETERMINED AT THE PLANE WHERE THE BOTTOM OF THE LEADS EXITS THE PLASTIC BODY.
5. THIS DIMENSION DOES NOT INCLUDE INTER-LEAD FLASH, PROTRUSIONS, INTER-LEAD FLASH AND PROTRUSIONS SHALL NOT EXCEED 0.25 mm PER SIDE. THIS DIMENSION IS DETERMINED AT THE PLANE WHERE THE BOTTOM OF THE LEADS EXITS THE PLASTIC BODY.
6. THIS DIMENSION DOES NOT INCLUDE DAMBAR PROTRUSION. DAMBAR PROTRUSION SHALL NOT CAUSE THE LEAD WIDTH TO EXCEED 0.62 mm.

Benefits

- > Safety Enhancement
- > Hazard Detection
- > UL Standardized
- > Interconnectable

Typical Applications

- > Smoke Detectors
- > Motion Detectors
- > Vibration Detectors
- > Pool Gate Alarms
- > Door Alarms
- > Heat Detectors
- > General Safety Products
- > Battery-Operated Products

Learn More: For more information about Freescale products, please visit www.freescale.com.