MOTOROLA

MC33346

Product Preview

Charge Control IC for Lithium Battery (3 to 4 Cells) with MCU Interface

CHARGE CONTROL IC FOR LITHIUM BATTERY (3 TO 4 CELLS) WITH MCU INTERFACE

SEMICONDUCTOR TECHNICAL DATA

The MC33346 is a Lithium Battery Charge Control Circuit designed to monitor the charge and discharge voltage safety limits of three to four lithium–ion or lithium polymer rechargeable cells, and to communicate to an MCU the state of the different cells monitored.

The MC33346 is designed to be placed inside the battery pack, together with the cells and other external components, to form a smart battery pack. Its main purpose is to ensure safe battery pack charging and discharging.

The circuit also protects the integrity of the Li–ion cells. In effect, it avoids the degradation of the cells in case of overdischarge by causing the battery pack to go in a zero current drain SLEEPMODE™ state. This state interrupts any further leakage of the cells.

Charge Control

- Programmable to monitor 3 to 4 Lithium–Ion (Li–ion) or Lithium–Polymer Rechargeable Cells
- Precision Cell Voltage Measurement with an accuracy of 1.0%
- Automatic or MCU–controlled Cell Balancing for Optimization of the Charge of each Cell
- Stand Alone Operation Without MCU
- Voltage Regulation with Charge FET Provided to make Battery Universal to Different Chemistry Chargers

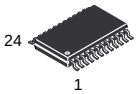
Protection Features

- Zero Current Drain Sleepmode in order to avoid the degradation of a cell in the event of an undervoltage condition
- Overvoltage and Undervoltage Cell Protection
- Overcurrent Protection During Charge and Discharge

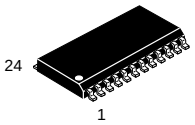
Designed for Smart Battery Pack Integration

- Available in SO–24 Wide Body and Low Profile TSSOP–24 Surface Mount Packages
- Simple 3–Pin Interface to MCU for Smart Battery (Interface with Laptop Computers, etc.)

SLEEPMODE is a trademark of Motorola, Inc.

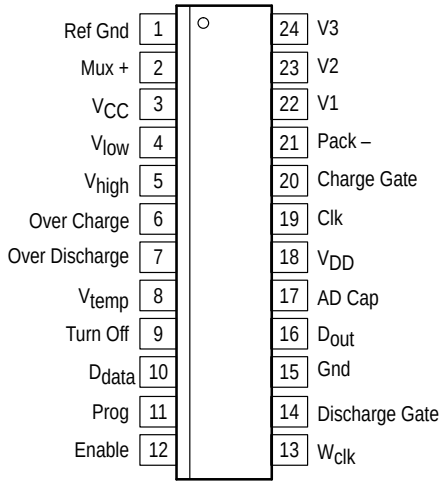


DTB SUFFIX
PLASTIC PACKAGE
CASE 948H
(TSSOP–24)



DW SUFFIX
PLASTIC PACKAGE
CASE 751E
(SO–24L)

PIN CONNECTIONS

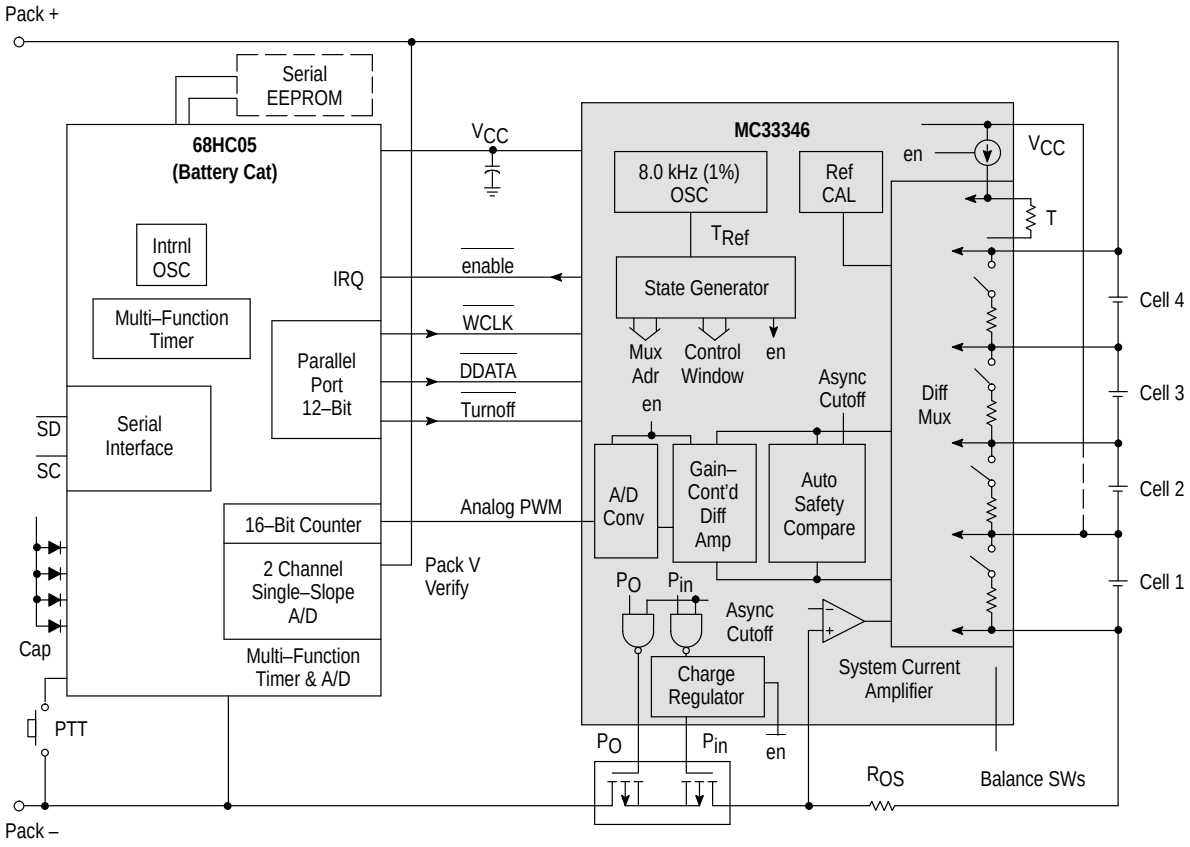


(Top View)

ORDERING INFORMATION

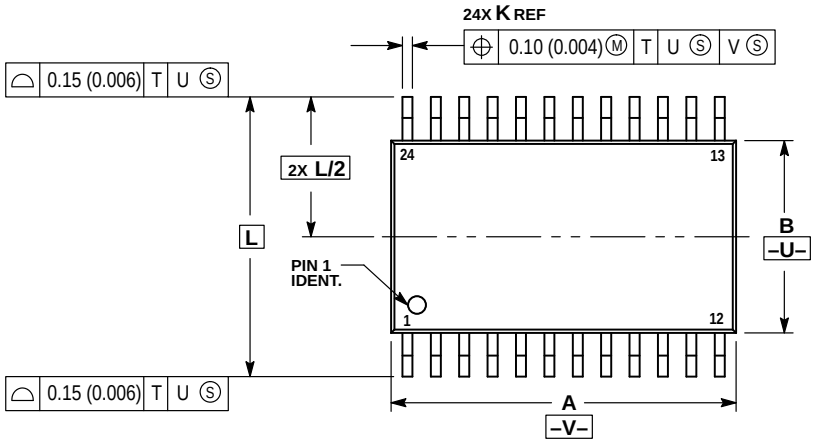
Device	Operating Temperature Range	Package
MC33346DTB	T_A = – 40° to +85°C	TSSOP–24
MC33346DW		SO–24L

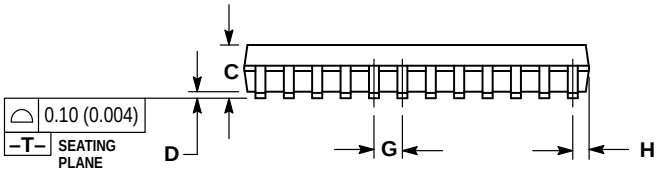
Simplified Block Diagram

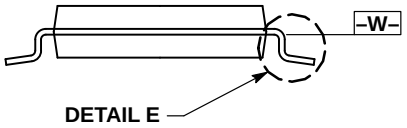


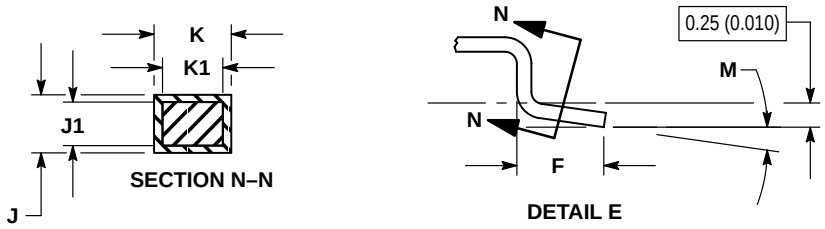
OUTLINE DIMENSIONS

DTB SUFFIX
PLASTIC PACKAGE
CASE 948H–01
(TSSOP–24)
ISSUE O







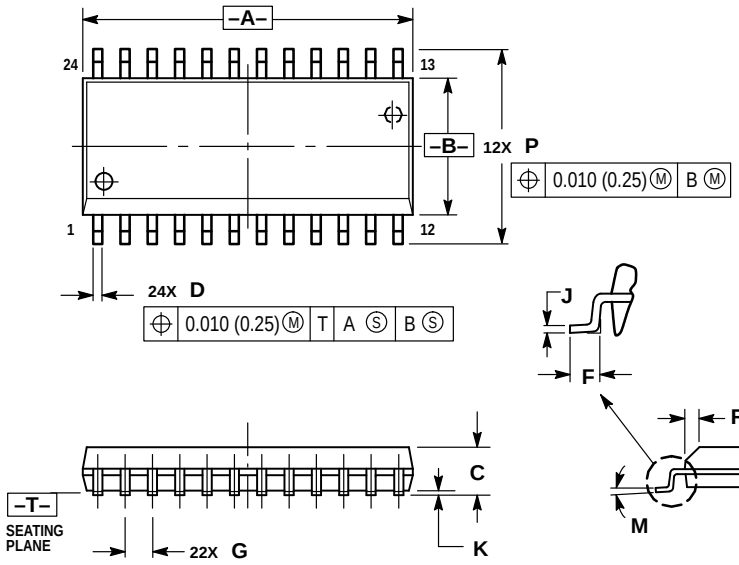


NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.
3. DIMENSION A DOES NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS. MOLD FLASH OR GATE BURRS SHALL NOT EXCEED 0.15 (0.006) PER SIDE.
4. DIMENSION B DOES NOT INCLUDE INTERLEAD FLASH OR PROTRUSION. INTERLEAD FLASH OR PROTRUSION SHALL NOT EXCEED 0.25 (0.010) PER SIDE.
5. DIMENSION K DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE DAMBAR PROTRUSION SHALL BE 0.08 (0.003) TOTAL IN EXCESS OF THE K DIMENSION AT MAXIMUM MATERIAL CONDITION.
6. TERMINAL NUMBERS ARE SHOWN FOR REFERENCE ONLY.
7. DIMENSION A AND B ARE TO BE DETERMINED AT DATUM PLANE –W–.

	MILLIMETERS		INCHES	
DIM	MIN	MAX	MIN	MAX
A	7.70	7.90	0.303	0.311
B	4.30	4.50	0.169	0.177
C	—	1.20	—	0.047
D	0.05	0.15	0.002	0.006
F	0.50	0.75	0.020	0.030
G	0.65 BSC		0.026 BSC	
H	0.27	0.37	0.011	0.015
J	0.09	0.20	0.004	0.008
J1	0.09	0.16	0.004	0.006
K	0.19	0.30	0.007	0.012
K1	0.19	0.25	0.007	0.010
L	6.40 BSC		0.252 BSC	
M	0°	8°	0°	8°

OUTLINE DIMENSIONS

DW SUFFIX
PLASTIC PACKAGE
CASE 751E–04
(SO–24L)
ISSUE E



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.
3. DIMENSIONS A AND B DO NOT INCLUDE MOLD PROTRUSION.
4. MAXIMUM MOLD PROTRUSION 0.15 (0.006) PER SIDE.
5. DIMENSION D DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE DAMBAR PROTRUSION SHALL BE 0.13 (0.005) TOTAL IN EXCESS OF D DIMENSION AT MAXIMUM MATERIAL CONDITION.

	MILLIMETERS		INCHES	
DIM	MIN	MAX	MIN	MAX
A	15.25	15.54	0.601	0.612
B	7.40	7.60	0.292	0.299
C	2.35	2.65	0.093	0.104
D	0.35	0.49	0.014	0.019
F	0.41	0.90	0.016	0.035
G	1.27 BSC		0.050 BSC	
J	0.23	0.32	0.009	0.013
K	0.13	0.29	0.005	0.011
M	0 °	8 °	0 °	8 °
P	10.05	10.55	0.395	0.415
R	0.25	0.75	0.010	0.029

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