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MOTOROLA

MC33345

Product Preview

1 to 4 Cells Lithium Battery Safety IC

The MC33345 is a Lithium Battery Safety Integrated Circuit designed to control the charge and discharge voltage safety limits of one to four lithium–ion or lithium polymer rechargeable cells. This device 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 SLEEPMODE™ state. This state interrupts any further leakage of the cells.

Charge Control:

- Fully programmable for 1 to 4 Lithium–Ion (Li–ion) or Lithium–Polymer Rechargeable Cells
- Precision Cell Voltage Measurement with an Accuracy of 1.0%
- Programmable Voltage and Current Limits
- Automatic Cell Balancing for Optimization of the Charge of each Cell

Protection Features:

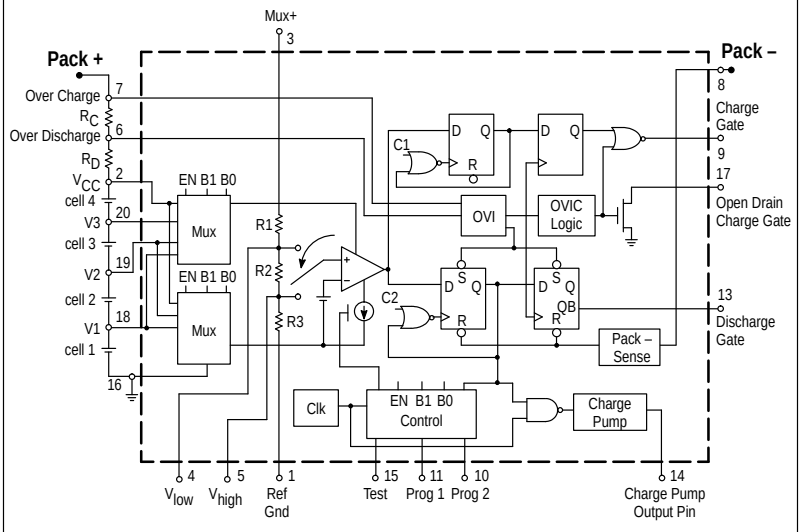
- Zero Current Sleepmode in Order to Avoid the Degradation of a Cell in the Event of an Undervoltage Condition
- Overvoltage and Undervoltage Cell Protection
- Overcurrent Protection during Charge and Discharge

Designed for Smart Battery Pack Integration:

- Low Profile 20 Pin Surface Mount Package

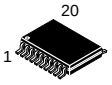
SLEEPMODE is a trademark of Motorola, Inc.

Simplified Block Diagram

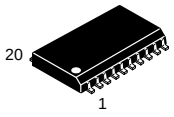


1 TO 4 CELLS LITHIUM BATTERY SAFETY IC

SEMICONDUCTOR TECHNICAL DATA

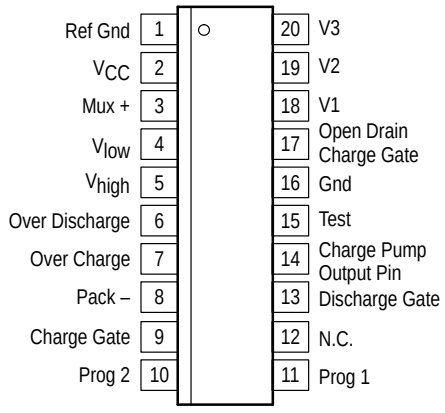


DTB SUFFIX
PLASTIC PACKAGE
CASE 948E
(TSSOP–20)



DW SUFFIX
PLASTIC PACKAGE
CASE 751D
(SO–20L)

PIN CONNECTIONS



(Top View)

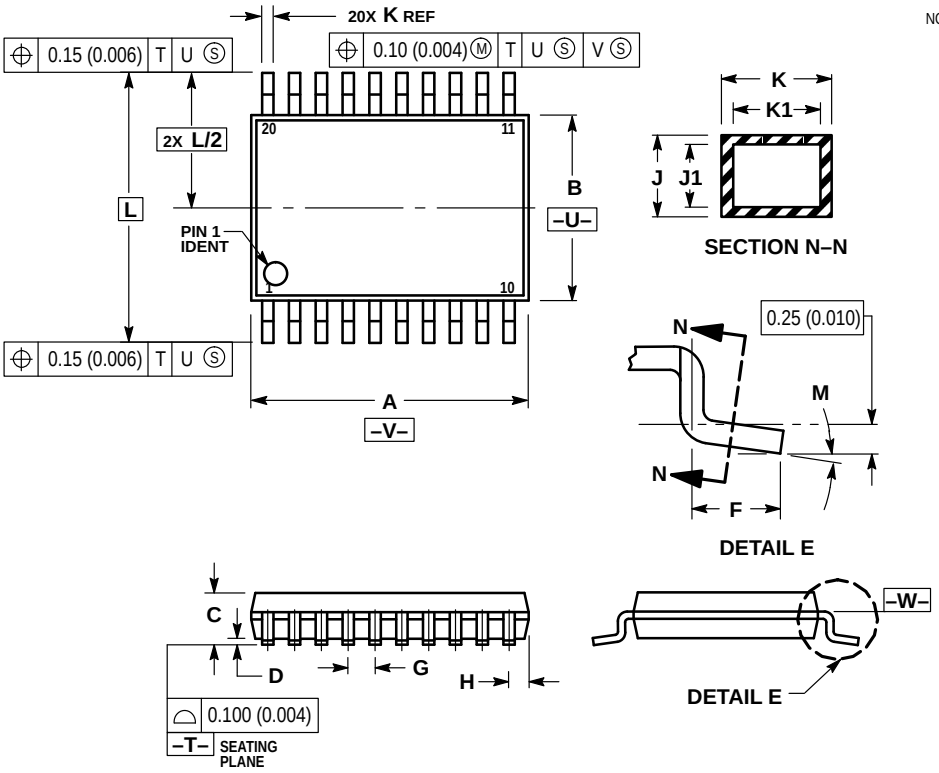
ORDERING INFORMATION

Device	Operating Temperature Range	Package
MC33345DTB	T_A = – 40° to +85°C	TSSOP–20
MC33345DW		SO–20L

This document contains information on a product under development. Motorola reserves the right to change or discontinue this product without notice.

OUTLINE DIMENSIONS

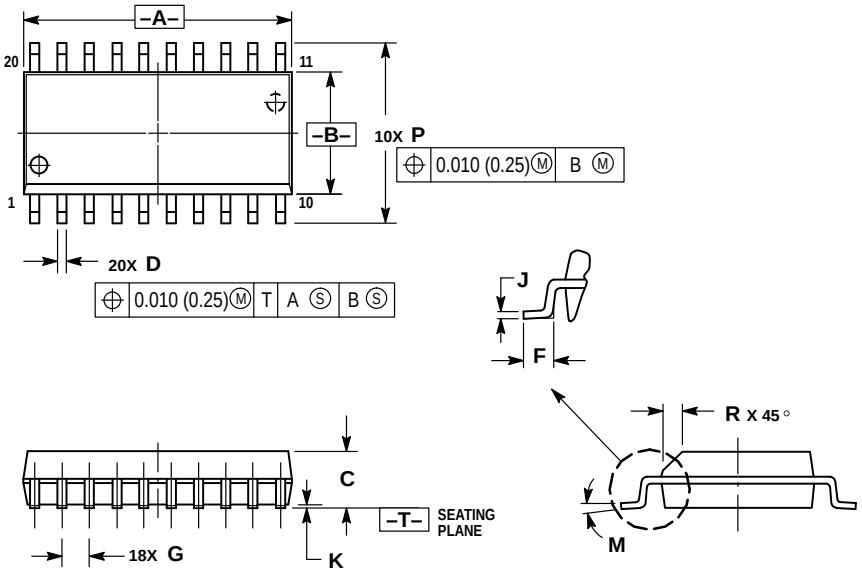
DTB SUFFIX
PLASTIC PACKAGE
CASE 948E–02
(TSSOP–20)
ISSUE A



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	6.40	6.60	0.252	0.260
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°

DW SUFFIX
PLASTIC PACKAGE
CASE 751D–04
(SO–20L)
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 0.150 (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	12.65	12.95	0.499	0.510
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	0.50	0.90	0.020	0.035
G	1.27 BSC		0.050 BSC	
J	0.25	0.32	0.010	0.012
K	0.10	0.25	0.004	0.009
M	0°	7°	0°	7°
P	10.05	10.55	0.395	0.415
R	0.25	0.75	0.010	0.029

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