



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:

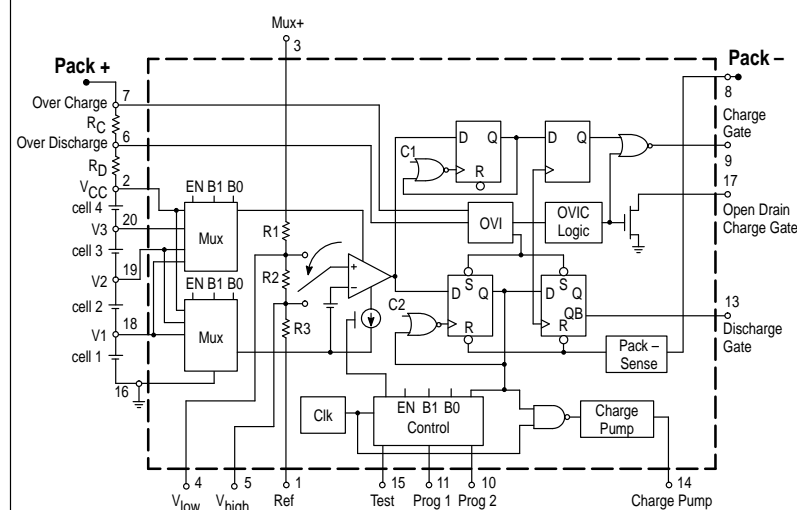
- Zero Current Sleepmode in Order to Avoid the Degradation of a Cell in the Event of an Undervoltage Condition
- Overvoltage and Undervoltage Cell Protection
- Overcurrent Protection during Charge and Discharge

Designed for Smart Battery Pack Integration:

- Low Profile 20 Pin Surface Mount Package

SLEEPMODE is a trademark of Motorola, Inc.

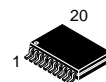
Simplified Block Diagram



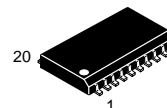
MC33345

1 TO 4 CELLS LITHIUM BATTERY SAFETY IC

SEMICONDUCTOR TECHNICAL DATA

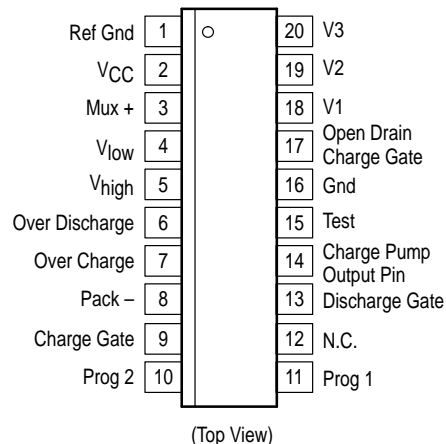


DTB SUFFIX
PLASTIC PACKAGE
CASE 948E
(TSSOP-20)



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

PIN CONNECTIONS

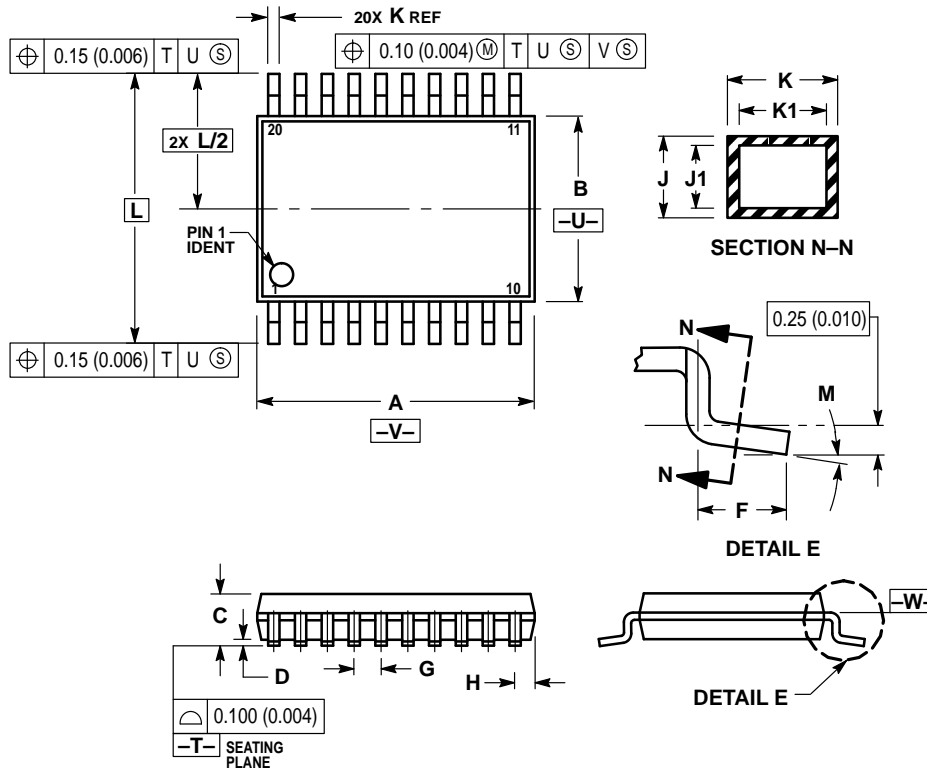


ORDERING INFORMATION

Device	Operating Temperature Range	Package
MC33345DTB	$T_A = -40^\circ \text{ to } +85^\circ \text{C}$	TSSOP-20
MC33345DW		SO-20L

OUTLINE DIMENSIONS

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

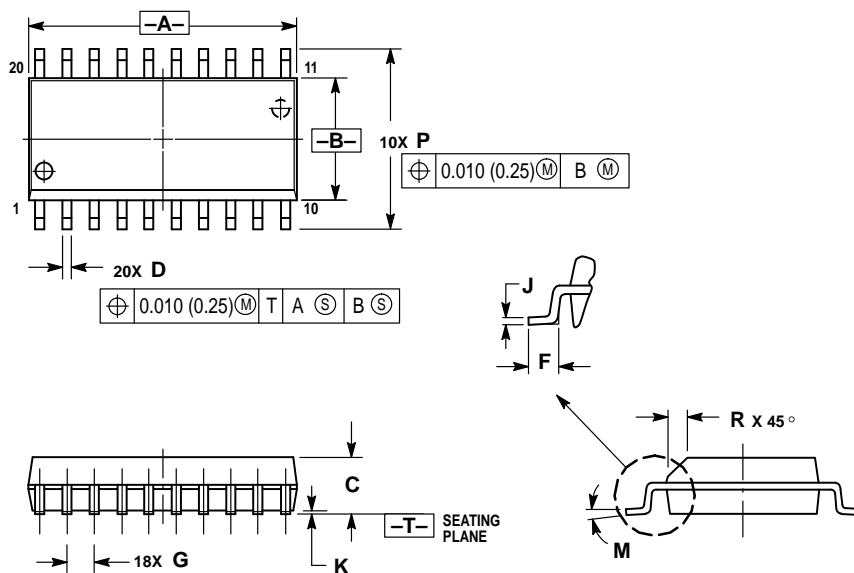


NOTES:

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-.

DIM	MILLIMETERS		INCHES	
	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.

DIM	MILLIMETERS		INCHES	
	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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**MOTOROLA****MC33345/D**