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REPORT

on

COMPONENT - INFORMATION PROCESSING  
AND BUSINESS EQUIPMENT

Maxim Integrated Products  
Sunnyvale, CA

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## DESCRIPTION

## PRODUCT COVERED:

\* USR CNR -Component lithium battery powered integrated circuits: DS1201#, -1213#, -1216#, -1217#, -1220#, -1225#, -1230#, -1235#, -1243#, -1244#, -1245#, -1248#, -1249#, -1250#, -1251#, -1258#, -1260#, -1265#, -1270#, -1286#, -12887#, -12C887#, -1330#, -1345#, -1350#, -1386#, -1486#, -1511#, -1554#, -1556#, -1557#, -1558#, -1603#, -1642#, -1643#, -1644#, -1646#, -1647#, -1645#, -1687#, -1691#, -1693#, -14287#, -1743#, -1744#, -1746#, -1747#, -17287#, -17487#, -17887#, -2030#, -2045#, -2050#, -2065#, -2070#, -3030#, -3045#, -3050#, -3065# -3070#, -5000#, DS12CR887#, and DS12R887# followed by # sign, where # may be any combination of symbols, letters, and/or numbers that describe non-safety related characteristics.

USR CNR -Soft Microcontroller Module Component Lithium Battery powered Integrated Circuit (DS XXXX) DS2250T series Models: DS2250T-32-16#, DS2250T-32-16+#, DS2250-32-16#, DS2250-32-16+#, DS2250T-64-16#, DS2250T-64-16+#, DS2250-64-16#, DS2250-64-16# followed by suffix "#" where # may be any combination of symbols, letters, and/or numbers that describe non-safety related characteristics.

USR CNR -DS2252T Series Models: DS2252T-128-16#, DS2252T-32-16#, DS2252T-64-16#, DS2252T-128-16#, DS2252T-32-16#, DS2252T-64-16#, followed by suffix "#" where # may be any combination of symbols, letters, and/or numbers that describe non-safety related characteristics.

## GENERAL DESCRIPTION:

The components listed are lithium battery powered circuits and peripherals that include the DS1201 tag, DS1204 key, DS1213 smart socket, DS1216 smart watch, DS1217A or DS1217M1 RAM cartridge, DS1220Y RAM module, DS1223 configurator, and the DS1225Y RAM module. Each component is enclosed in a plastic housing and the battery is epoxy encapsulated to prevent contamination or accidental discharge. The battery circuit is a backup in case of power failure. The battery circuit also provides protection from a reverse charging current into the battery.

## TECHNICAL CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE'S USE):

Use - For use only in products where the acceptability of the combination is determined by Underwriters Laboratories Inc.

USR indicates investigation to the UL Standard for Safety of Information Technology Equipment, UL 60950-1 - Standard for Safety for Information Technology Equipment - Safety - Part 1: General Requirements - Edition 1 - Revision Date 2007/10/31

CNR indicates investigation to the Standard for Safety of Information Technology Equipment CSA C22.2 NO. 60950-1 (1ST ED.) - INFORMATION TECHNOLOGY EQUIPMENT SAFETY PART 1: GENERAL REQUIREMENTS - Edition 1 - Revision Date 2006/07/07

Conditions Of Acceptability - Consideration should be given to the following when determining the acceptability of these devices in specific applications.

1. These devices are normally intended for use as components where replacement is done by a trained technician.
2. These devices are intended for use as components in low voltage isolated secondary circuits where the case temperature is not expected to exceed 95°C and the voltage on any pin relative to ground is a maximum of 7 V dc.

3. These devices are considered to meet the requirements for V-2 or less flammable material as specified for internal materials in Paragraph 5.20 of the Fifth Edition of UL 478 or by the 3/4 in. Flame Test specified in Exception 7.

Models DS1251#, DS14287#, DS17287#, DS17487#, and DS17887# are considered to meet the requirements for V-0 flammable material. They have been evaluated to Appendix A6 of UL 1950. Test conducted per Appendix A6 of UL 1950 is equivalent to Annex A2 of 60950-1.

4. These devices are provided with the applicable reverse charging current protection circuit either on the chips or discrete components that are encapsulated with the battery.
5. Consideration should be given to Sub-clause 1.7.15 of 60950-1, first edition.

#### MODEL DIFFERENCES:

The lithium battery protection circuits for the following models are as follows:

DS1245# is identical to DS1250#.

DS1243# and -1244# are identical to DS1216#.

DS1486# is identical to DS1386# and DS1384#.

DS1239#, -5001#, -5002#, -5303#, -5311# and -5340# are identical to DS5000#.

DS1286#, -1643#, -1644#, -1647#, -1648#, -1646# are identical to DS1287#.

DS12B887# and DS12C887# are identical to DS12887#.

DS1691# is identical to DS1693#.

DS1249# and -1265# are identical to DS1270#

DS1746# and -1747# are identical to DS1744# except for amount of RAM.

\*

DS2030# is identical to DS2045#, DS2050#, DS2065#, DS3050# and DS3065#.

Models DS3030# and DS3045# are identical to DS3050# and DS3065# except for model designation.

Model DS3070# is identical to DS3065# except for model designation.

Model DS2070# is identical to DS3065# except for model designation.

DS2250T series and DS2252T Series Models are similar to each other except different size SRAMs arrangements and they are similar to previously evaluated models except for different size SRAMs arrangements & model designation.

The battery protection circuit for the following lithium battery integrated circuit (LBIC) is the same as for the integrated circuit (IC) covered in Vol. 1, Sec. 2, Report issued November 11, 1987.

DS1386# is identical to DS1284#.

DS1488# is identical to DS1485#.

DS1187# is identical to Model DS1287# except for battery life.

DS12887# is identical to DS12885#.

DS1603# is identical to DS1602#.

\*

DS1249#, -1265#, and -1270# are identical to DS1321#.

DS1258# is identical to DS13D12#.

DS1744#, -1746#, and -1747# are identical to DS1748#

DS1556# is identical to DS1558#

DS1554# is identical to DS1556#, except for SRAM size

DS1557# is identical to DS1556#

\*

DS12R887# and DS12CR887# are similar to DS12885#.

(#) The model number may be followed by additional suffix numbers or letters or symbols. These suffix designations denote logic changes or non-safety related characteristics (such as temperature, package type, number of pins, voltage range, special labels or packaging, Restriction of Hazardous Substances (RoHS) status, etc.) only and do not affect the safety of the product.

DS2250T series and DS2252T Series: The battery protection circuit for the following lithium battery integrated circuit (LBIC) is the same as for the integrated circuit (IC) covered in Vol. 1, Sec. 2, Report issued November 11, 1987.

Markings: Replaceable batteries: If an equipment is provided with a replaceable battery, and if replacement by an incorrect type could result in an explosion (for example, with some lithium batteries), the following applies:

- The battery is placed elsewhere in the equipment, there shall be a marking close to the battery or a statement in the servicing instructions. "CAUTION: Risk of Explosion if Battery is replaced by an Incorrect Type. Dispose of Used Batteries According to the Instructions."

DS2250T **series**, Models

**DS2250T-32-16#** (90-2250T-316) IC Controller DS5000FP-16  
**DS2250T-32-16+#** (90-2250T+316) IC Controller DS5000FP-16  
**DS2250-32-16#** (90-22503-216) IC Controller DS5000FP-16  
**DS2250-32-16+#** (90-22503+216) IC Controller DS5000FP-16  
**DS2250T-64-16#** (90-2250T-616) IC Controller DS5000FP-16  
**DS2250T-64-16+#** (90-2250T+616) IC Controller DS5000FP-16  
**DS2250-64-16#** (90-22506-416) IC Controller DS5000FP-16  
DS2250-64-16# (90-22506#416) IC Controller DS5000FP-16

DS2252T **Series**, Models

**DS2252T-128-16#** (90-2252T-116) IC Controller DS5002FPM-16  
**DS2252T-32-16#** (90-2252T-316) IC Controller DS5002FPM-16  
**DS2252T-64-16#** (90-2252T-616) IC Controller DS5002FPM-16  
DS2252T-128-16# (90-2252T#116) IC Controller DS5002FPM-16  
DS2252T-32-16# (90-2252T#-316) IC Controller DS5002FPM-16  
DS2252T-64-16# (90-2252T#616) IC Controller DS5002FPM-16

- (#) **The model number may be followed by additional suffix numbers or letters or symbols. These suffix designations denote logic changes or non-safety related characteristics (such as temperature, package type, number of pins, voltage range, special labels or packaging, Restriction of Hazardous Substances (RoHS) status, etc.) only and do not affect the safety of the product.**

## NOTE TO FIELD REPRESENTATIVE:

Recognized Component Marking for printed circuit board is found on each 18 by 24 in. printed wiring board prior to cutting into final sizes.

## CONSTRUCTION DETAILS:

Materials - Unless otherwise noted, the following materials are used in the construction of the items described below.

1. Housing - QMFZ2, Celanex, Type No. 3112, flame rated V-2 or better.  
  
Alternate - QMFZ2, Sabic Innovative Plastics, Type Valox DR48, rated V-2 or better. (Vertical Burning test with 50% regrind of this material supplied by EPAK complied as V-0 material.)  
  
Alternate - QMFZ2, Celanex, Type No. 3216, rated V-2 or better.  
  
Alternate - QMFZ2, Sabic Innovative Plastics, Cyclocac Type No. FR15U, rated V-2 or better.  
  
Alternate - QMFZ2, rated minimum V-2.
2. Battery - BBCV2, manufactured by Panasonic Corp., Model No. BR1225.  
  
Alternate - BBCV2, same as above, except Model No. CR1632, or BR1632.
3. IC Package - QMFZ2, thermoset molded epoxy, flame rated V-0.
4. Skirt - Optional. Same material as housing.
5. Printed Circuit Board - ZPMV2, rated minimum V-1.
6. Encapsulant - QMFZ2, Henkel Corp, Cat. No. XT-5038-9A, epoxy encapsulant with catalyst, Hardener 3052-26B, rated V-2 or better.  
  
Alternate - Same as above, except **Henkel Corp.**, Cat. No. XT-3083-34A epoxy encapsulant with catalyst, Hardener 3083-34B.
- \* Alternate - Same as above, except various QMFZ2 epoxy encapsulant with catalyst, rated V-2 or better.
7. Battery Adhesive - Optional. Amicon, Cat. No. CT-5047-2A, conductive epoxy with CT-5047-2B, B-97 or B-100 catalyst hardener.
8. Socket - Optional. QMFZ2 or ECBT2, flame rated 94V-2 or better.
9. Marking - Paint stenciled with Recognized Company's name or Trademark "DS" and part number. When no identifier is provided, the prefix "DS" of the part number will act as identifier of Recognized Company. See Sec Gen for details.

## DS1201, DS1204, DS1213 FIG. 1 (T85-3000)

General - Figure 1 shows the disassembled DS1201 Tag, DS1204 Key, and the DS1213 Smart Socket.

1. DS1201 Electronic Tag - miniature, nonvolatile read/ write memory system with a battery backup circuit used for identification and security.
2. DS1201 IC - See Illustrations 1 and 2 for details.
3. Battery - One provided, see Construction Details.
4. DS1204 IC - Electronic key with battery backup circuit See Illustrations 1 and 2 for details.
5. Battery - One provided. See Construction Details.
6. DS1213 - Static RAM Smart Socket with battery backup circuit.
7. PC Board - See Construction Details.
8. Batteries - Two provided. See Construction Details.
9. DS1213 IC - See Illustration 3 for details.

## DS1220, DS1216 - FIG. 2 (T85-3001)

General - Fig. 2 shows the disassembled DS1220 Memory Module and the DS1216 Smart Watch.

1. Printed Circuit Board - See Construction Details.
2. DS1220 - 16 K nonvolatile memory module with a battery backup circuit.
3. DS1218 IC - See Ill. 4 for details.
- \* Alternate - DS1210 IC, see Ill. 3 for details.
4. Battery - One provided. See Construction Details.
5. Printed Circuit Board - Same as Item 1.
6. Batteries - Two provided. See Construction Details.
7. DS1216 IC - Nonvolatile RAM Controller with built in LMOS watch function and battery backup circuit. See Ill. 3 for details.

## DS1217A, DS1217M - FIG. 3 (T85-3002)

General - Fig. 3 shows the DS1217 memory cartridge.

1. DS1221IC - (Not shown.) Employed in DS1217A, see Ill. 3 for details.  
Alternate - DS1212IC, same as above, except employed in DS1217M.
2. DS1217 - Nonvolatile Read/Write Cartridge with write protect switch and battery back up circuit.
- \*3. Batteries - Two provided, Recognized Component Lithium Battery (BBCV2), manufactured by **Panasonic**, Model No. B2325.
4. Printed Circuit Board - See Construction Details.
5. DS1222IC - (Not shown or itemized.) Optional. Employed in DS1217M.

## DS1223, DS1225Y - FIG. 4 (T85-3003)

General - Fig. 4 shows a disassembled DS1223 configurator and DS1225Y memory module.

1. DS1223 IC - Nonvolatile configurator. See Ills. 2 and 5 for details.
2. Battery - One provided, see Construction Details.
3. DS1225 - 64 K nonvolatile memory module with battery backup circuit.
4. Battery - One provided, see Construction Details.
5. Printed Circuit Board - See Construction Details.
6. DS1218 IC - See Fig. 2, Item 3.

\*

DS1235#, DS1230#, DS1220A, AND DS1260# -  
(MODELS DS1235#, DS1220A, AND DS1230# ARE IDENTICAL  
EXCEPT WHERE INDICATED)  
FIG. 5 (R86-2251)

General - Fig. 5 shows the disassembled DS1235 Memory Module.

- \*1. Battery - Models DS1235#, DS1220A# and DS1225A# only. One provided. Lithium Batteries (BBCV2), manufactured by **Panasonic**, Model No. BR1225.  
  
Alternate - Model DS1230# only. Two provided. Same as above, except Model No. BR1632.  
  
Alternate - Model DS1235# only. One provided. Same as above, except Model No. BR1225.
2. DS1210 or -1213 IC - See Ill. 3 and Ill. 13 for details.
3. Integrated Circuit - 256K Static Ram memory chip.
4. Printed Circuit Board - See Construction Details.
5. Housing - See Construction Details.
6. Housing - See Page 2, Item 1 for details.
7. DS1260# IC - See Ill. 6 for details.
8. Battery - One provided. Recognized Component Lithium Batteries (BBCV2), Renata or Sanyo, Part Nos. CR2430, CR2450 or CR2477.
- \* Alternate - BBCV2, same as above, except **Panasonic**, Model Nos. BR2335 and CR2354.
9. Printed Wiring Board - Not shown. See Construction Details.

## DS 1287 - FIG. 6 (R87-5624)

General - Fig. 6 shows the disassembled DS 1287 lithium battery powered IC and the encapsulated IC.

1. DS 1287 - Assembled lithium battery powered IC. Encapsulated as described in construction details.
2. Battery - One provided. See construction details, Item 2.
3. Crystal - Quartz.
4. DS 1285 IC - See Ill. 7 for details.
5. Housing - See construction details, Item 1.

## DS5000 - FIG. 7 (R88-3203)

General - Fig. 7 shows a disassembled view of the DS5000 lithium battery powered IC and an encapsulated IC.

1. DS5000 - Encapsulated DS5000 microcontroller with lithium battery backup circuit.
2. Housing - See materials, Page 2, Item 1.
3. Battery - Recognized Component Lithium Batteries (BBCV2), Panasonic, Type CR1616 or Sanyo, Type CR1620.
4. Disassembled DS5000 - See Ill. 8 for details.

## MODEL DS1488 - FIG. 8 (R91-9262)

General - Fig. 8 shows a disassembled view of the DS1488 lithium battery powered IC and an encapsulated IC.

1. DS1488 - Assembled lithium battery powered IC. Encapsulated as described in Construction Details, Item 6.
2. Battery - One provided. Refer to Construction Details, Item 2.
3. DS1485 - IC containing reverse charging current protection. Refer to File E99151, Vol. 1, Sec. 2, Fig. 2.
4. Housing - Refer to Construction Details, Item 1.

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MODEL DS1643# - FIG. 12 (R92-5227)  
(ALSO REPRESENTS MODELS DS1642#, -1644#,  
-1646# AND -1647#)

General - Fig. 12 is a disassembled view of the subject unit.

- \*1. Housing - QMFZ2, Celanex, Type No. 3210, flame rated min. **V-2**.
- \* Alternate - QMFZ2, Celanex, Type No. 3216, rated **V-2** or better.  
**Alternate - R/C (QMFZ2) rated V-2 or better.**
- \* Battery - BBCV2, **Panasonic**, Model No. BR1225 or BR1632.
- 3. IC Package - QMFZ2, thermoset molded epoxy, flame rated 94V-2 or better.
- \*4. Encapsulant - QMFZ2, Emerson & Cuming, Cat. No. XT-5038-9A, epoxy encapsulant with catalyst Hardener 3052-26B, rated **V-2** or better.  
  
Alternate - Same as above, except Emerson & Cuming, Cat. No. XT-3083-34A epoxy encapsulant with catalyst, Hardener 3083-34B.
- \*5. Printed Circuit Board - ZPMV2, rated **minimum V-1**.
- 6. Marking - Paint stenciled with Recognized Company's Name or Trademark "DS".

## MODEL DS17487# - FIG. 13 (R95-7072)

General - Fig. 13 is a disassembled view of the subject unit.

1. DS17487 - Assembled lithium battery powered IC. Encapsulated as described in Construction Details, Item 6.
- \*2. Battery - BBCV2, **Panasonic**, Model No. BR1632.
3. DS17485 - NWGQ2, Dallas Semiconductor, IC containing reverse charging current protection.
4. Housing - Refer to Construction Details, Item 1.

## MODEL DS14287 - FIG. 14 (R9603710)

1. DS14287 - Assembled lithium battery powered IC. Encapsulated as described in Construction Details, Item 6.
- \*2. Battery - BBCV2, **Panasonic**, Model No. BR1632.
3. DS14285 - NWGQ2, Dallas Semiconductor, IC containing reverse charging current protection.
4. Housing - Refer to Construction Details, Item 1.

## Model DS17287

General - Model DS17287 is identical to Model DS14287 described in Fig. 14 except for items noted below.

1. DS17287 - Assembled lithium battery powered IC. Encapsulated as described in Construction Details, Item 6.
3. DS17285 - NWGQ2, Dallas Semiconductor, IC containing reverse charging current protection.

## Model DS17887

General - Model DS17887 is identical to Model DS14287 described in Fig. 14 except for items noted below.

1. DS17887 - Assembled lithium battery powered IC. Encapsulated as described in Construction Details, Item 6.
3. DS17885 - NWGQ2, Dallas Semiconductor, IC containing reverse charging current protection.

## MODEL DS1251# - FIG. 15 (R9604666)

1. DS1251# - Assembled lithium battery powered IC. Encapsulated as described in Construction Details, Item 6.
- \*2. Battery - BBCV2, **Panasonic**, Model No. BR1632.  
Alternate - BBCV2, same as above, except Model No. CR1632.
3. DS1215# - NWGQ2, Dallas Semiconductor, IC containing reverse charging current protection.
4. Housing - Refer to Construction Details, Item 1.

## MODEL DS1250# - FIG. 16 (R9702538)

1. DS1250# - Assembled lithium battery powered IC. Encapsulated as described in Construction Details, Item 6.
- \*2. Battery - BBCV2, **Panasonic**, Model No. BR1632.
3. DS13D12# - NWGQ2, Dallas Semiconductor, IC containing reverse charging current protection.
4. Housing - Refer to Construction Details, Item 1.

## MODEL DS1330# - FIG. 17 (R9702536)

1. DS1330# - Assembled lithium battery powered IC. Encapsulated as described in Construction Details, Item 6.
- \*2. Battery - BBCV2, **Panasonic**, Model No. BR1632.
3. DS1312# - NWGQ2, Dallas Semiconductor, IC containing reverse charging current protection.
4. Housing - Refer to Construction Details, Item 1.

## MODEL DS1345# - FIG. 18 (R9702535)

1. DS1345# - Assembled lithium battery powered IC. Encapsulated as described in Construction Details, Item 6.
- \*2. Battery - BBCV2, **Panasonic**, Model No. BR1632.
3. DS1312# - NWGQ2, Dallas Semiconductor, IC containing reverse charging current protection.
4. Housing - Refer to Construction Details, Item 1.

## MODEL DS1350# - FIG. 19 (R9702537)

1. DS1350# - Assembled lithium battery powered IC. Encapsulated as described in Construction Details, Item 6.
- \*2. Battery - BBCV2, **Panasonic**, Model No. BR1632.
3. DS1312# - NWGQ2, Dallas Semiconductor, IC containing reverse charging current protection.
4. Housing - Refer to Construction Details, Item 1.

## MODEL DS1511# - FIG. 20 (R99-4814)

1. DS1511# - Assembled lithium battery powered IC. Encapsulated as described in Construction Details, Item 6.
- \*2. Battery - BBCV2, Panasonic, Model No. BR1225.
3. DS1501# - NWGQ2, Dallas Semiconductor, IC containing reverse charging current protection.
4. Housing - Refer to Construction Details, Item 1.

MODELS DS1386# and DS1486#

General - See Construction Details for more details.

\*1. Battery - BBCV2, **Panasonic**, Model No. BR1632.

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DS1249#, -1265#, and -1270# - FIG. 22 (R99-17919)

General - Fig. 22 shows the disassembled DS1249#, -1265#, and -1270# lithium battery powered IC's and the encapsulated view of the IC's.

1. DS1249#, -1265#, and -1270# - Assembled lithium battery powered IC. Encapsulated.
- \*2. PWB - ZPMV2, rated **V0**.
3. DS1321 - NWGQ2, Dallas Semiconductor, IC containing reverse charging current protection.
4. Housing - QMFZ2, See Construction Details Item 1.
5. Battery - See Construction Details Item 2.
- \*6. Encapsulant - QMFZ2, Amicon XT 5038-9A and 3053-26B, rated **V-2** or better.

**Alternate - Same as above, except R/C (QMFZ2), rated V-2 or better.**

## DS1258# - FIG. 23 (R99-17920)

General - Fig. 23 shows the disassembled DS1258# lithium battery powered IC and the encapsulated view of the IC.

1. DS1258# - Assembled lithium battery powered IC. Encapsulated.
- \*2. PWB - ZPMV2, rated **V0**.
3. DS13D12 - NWGQ2, Dallas Semiconductor, IC containing reverse charging current protection.
4. Housing - QMFZ2, See Construction Details Item 1.
5. Battery - See Construction Details Item 2.
- \*6. Encapsulant - QMFZ2, Amicon XT 5038-9A and 3053-26B, rated **V-2** or better.

**Alternate - Same as above, except R/C (QMFZ2), rated V-2 or better.**

## DS1744# - FIG. 24 (R99-19757)

General - Fig. 24 shows the disassembled DS1744# lithium battery powered IC and the encapsulated view of the IC.

1. DS1744# - Assembled lithium battery powered IC. Encapsulated.
- \*2. PWB - ZPMV2, rated **V0**.
3. DS1748# - NWGQ2, Dallas Semiconductor, IC containing reverse charging current protection.
4. Battery - See Construction Details Item 2.
- \*5. Housing - QMFZ2, thermoset molded epoxy, flame rated **V-2** or better.

MODELS DS1746# and DS1747#

General - See Construction Details for more details.

- \*1. Battery - BBCV2, **Panasonic**, Model No. BR1632.

## DS1556# - FIG. 25 (R0007367)

General - Fig. 25 shows the disassembled DS1556# lithium battery powered IC and the encapsulated view of the IC.

1. DS1556# - Assembled lithium battery powered IC. Encapsulated.
2. DS1558 - NWGQ2, Dallas Semiconductor, IC containing reverse charging current protection.
4. Housing - QMFZ2, See Construction Details Item 3.
5. Battery - BBCV2, See Construction Details Item 2.
6. Encapsulant - QMFZ2, See Construction Details Item 6

## DS2030# - FIG. 26

General - Fig. 26 shows the disassembled DS2030# lithium battery powered IC and the encapsulated view of the IC. Also representative of Models DS2045#, DS2050#, DS2065#, DS3050#, DS3065#, and DS2070#.

1. DS2030# - Assembled lithium battery powered IC. Encapsulated.
2. DS13#10 - NWGQ2, Dallas Semiconductor, IC containing reverse charging current protection.
4. Housing - QMFZ2, See Construction Details Item 3.
5. Battery - BBCV2, See Construction Details Item 2.
- \* Alternate - Same as above, except Panasonic, Type ML614. For use with Models DS2030# and DS2045# only.
6. Encapsulant - QMFZ2, See Construction Details Item 6
- \*7. PWB - ZPMV2, rated **V0**.

Fig. 27 And Fig. 28

General - Figs 27 & 28 shows the DS2250T series Models and DS2252T Series Models lithium battery powered IC and the encapsulated view of the IC. Also representative of all Models within the series.

- \*1. PWB - (ZPMV2), **minimum** rated V-1, **105°C**
- \*2. Conformal **Coating** (QMJU2) Dow Corning Corp, (coating for use on **R/C PWB**) Mtl Dsg 1-2620 LOW VOC, **minimum** thickness 1.4 mm, Rated V-0 **at 130 deg°C**.  
**Alternate - Same as above, except R/C QMJU2) minimum 1.4 mm thick, rated V-0 at 130°C**
3. Battery (Li COIN CELL) - (BBCV2), See Construction Details Item 2.  
  
One battery provided for DS2250 series Models and two batteries provided for DS2252T Series Models.
- \* Alternate - Same as above, except Panasonic Type CR1632.
4. Replaceable batteries (Item 3 above) Markings: See Page 1C and Section General
5. IC Controller - See Page 1C for details (The battery protection circuit for the following lithium battery integrated circuit (LBIC) is the same as for the integrated circuit (IC) covered in Vol. 1, Sec. 2, Report issued November 11, 1987.)
- \*6. Marking - Paint stenciled with Recognized Company's name or Trademark "DS" and part number. When no identifier is provided, the prefix "DS" of the part number will act as identifier of Recognized **Company**. See Section General for details.