



## Application Note 004 DS1213, DS1613 SmartSocket Options

[www.maxim-ic.com](http://www.maxim-ic.com)

### SMARTSOCKET OPTIONS

The DS1213 SmartSocket product family is designed to accept several user modifications. Please review the DS1213 data sheet for normal operation before modification.

### DS1213 SMARTSOCKET OPTIONS

(Reference Figure 1)

#### Option 1: Power Supply Tolerance

The standard DS1213 socket products are manufactured such that power-fail detection occurs between 4.75V and 4.50V, giving a 5% supply operating range. This range can be changed to a 10% supply with power-fail detection occurring between 4.50V and 4.25V. Follow the procedure below:

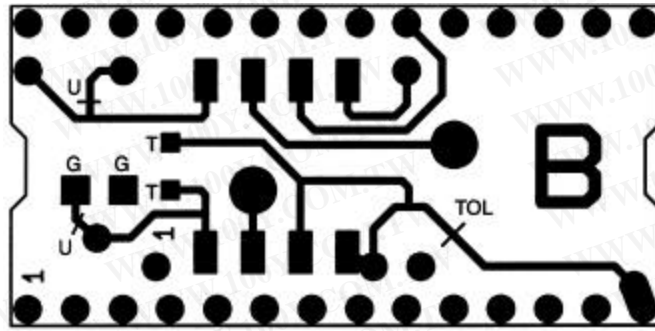
- cut metal trace labeled “TOL”
- short together metal tabs labeled “T”

#### Option 2: Density Upgrade

This option applies to the DS1213B and DS1213D SmartSockets only. The DS1213B can be upgraded from 8k x 8 to 32k x 8 memory and the DS1213D can be upgraded from 128k x 8 to 512k x 8 memory by performing the following:

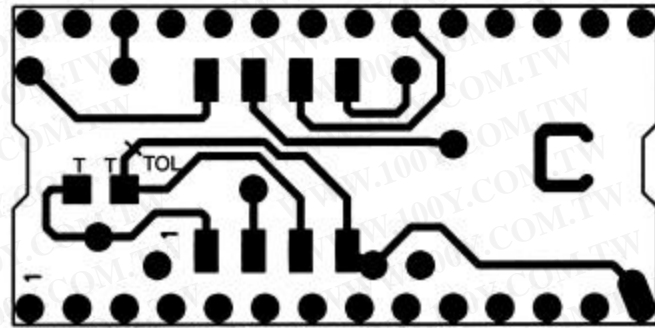
- cut metal traces identified by a hash mark labeled “U”
- short together square metal pads labeled “G”

Figure 1. DS1213 SMARTSOCKET FAMILY

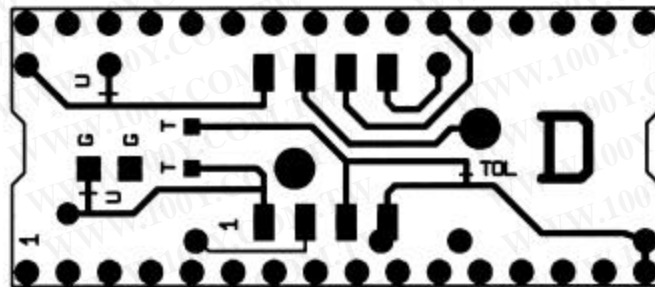


DS1213B

勝特力材料 886-3-5753170  
勝特力电子(上海) 86-21-54151736  
勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)



DS1213C



DS1213D



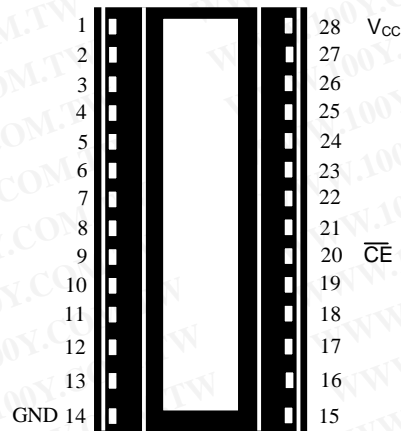
# DS1213C SmartSocket 256k

[www.dalsemi.com](http://www.dalsemi.com)

## FEATURES

- Accepts standard 32K x 8 CMOS static RAMs
- Embedded lithium energy cell retains RAM data
- Self-contained circuitry safeguards data
- Data retention time is greater than 10 years with the proper RAM selection
- Proven gas-tight socket contacts
- Operating temperature range 0°C to 70°C

## PIN ASSIGNMENT



28-Pin Intelligent Socket

## PIN DESCRIPTION

- $\overline{CE}$  – Conditioned Chip Enable
- $V_{CC}$  – Switched  $V_{CC}$
- GND – Ground

All pins pass through except 20 and 28.

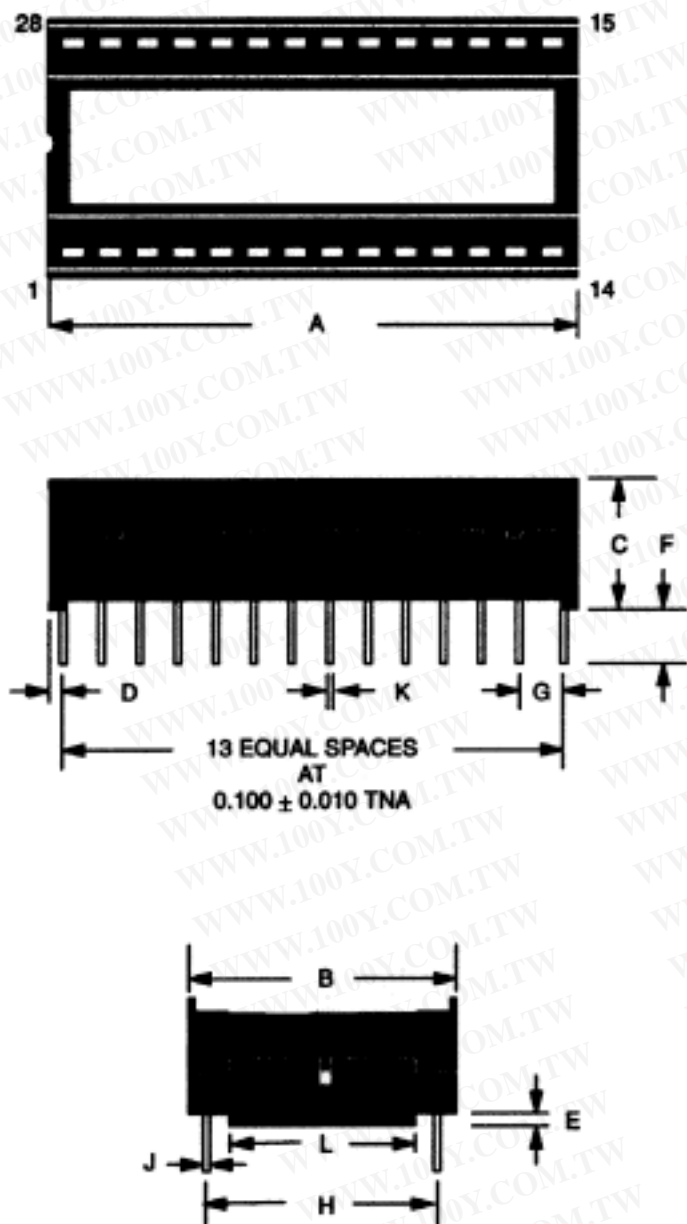
## DESCRIPTION

The DS1213C SmartSocket is a 28-pin, 600 mil DIP socket with a built-in CMOS controller circuit and an embedded lithium energy source. It accepts a 32K x 8 JEDEC byte-wide CMOS static RAM. When the socket is mated with a CMOS RAM, it provides a complete solution to problems associated with memory volatility. The SmartSocket monitors incoming  $V_{CC}$  for an out-of-tolerance condition. When such a condition occurs, the internal lithium energy source is automatically switched on and write protection is unconditionally enabled to prevent data corruption.

Using the SmartSocket saves printed circuit board space since the SRAM/SmartSocket combination occupies no more area than the memory alone. The SmartSocket uses only Pins 20 and 28 for RAM control. All other pins are passed straight through.

See the DS1213B SmartSocket data sheet for technical details.

## DS1213C INTELLIGENT SOCKET 28-PIN (FOR 600 MIL DIP)



PKG	28-PIN	
DIM	MIN	MAX
A IN.	1.380	1.420
MM	35.05	36.07
B IN.	0.690	0.720
MM	17.53	18.29
C IN.	0.420	0.470
MM	10.16	11.94
D IN.	0.035	0.065
MM	0.89	1.65
E IN.	0.055	0.075
MM	1.39	1.90
F IN.	0.120	0.160
MM	3.04	4.06
G IN.	0.090	0.110
MM	2.29	2.79
H IN.	0.590	0.630
MM	14.99	16.00
J IN.	0.008	0.012
MM	0.20	0.30
K IN.	0.015	0.021
MM	0.38	0.53
L IN.	0.380	0.420
MM	9.65	10.67

勝特力材料 886-3-5753170  
 勝特力电子(上海) 86-21-54151736  
 勝特力电子(深圳) 86-755-83298787  
[Http://www.100y.com.tw](http://www.100y.com.tw)