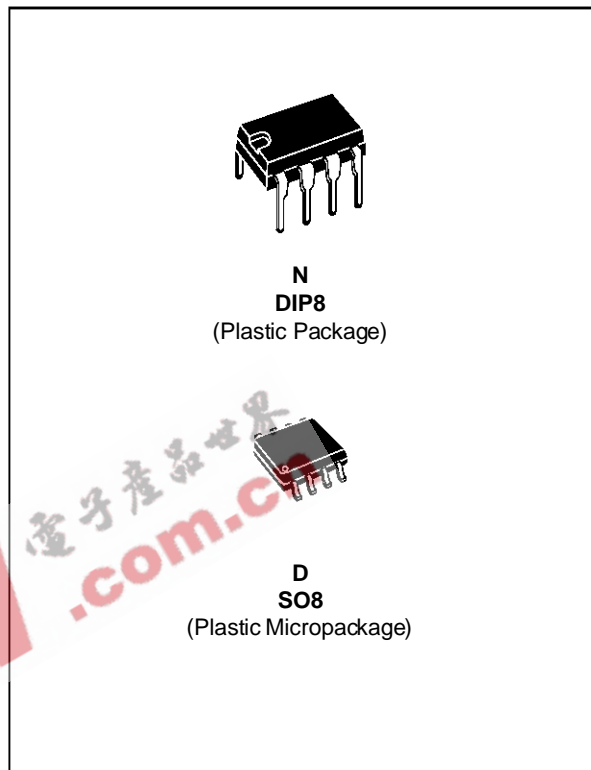


2.5V PRECISION SERIAL VOLTAGE REFERENCE

- OUTPUT VOLTAGE : 2.5V ±1%
- INPUT VOLTAGE RANGE : 4.5V to 40V
- QUIESCENT CURRENT : 1.2mA typ.
- OUTPUT CURRENT : 10mA



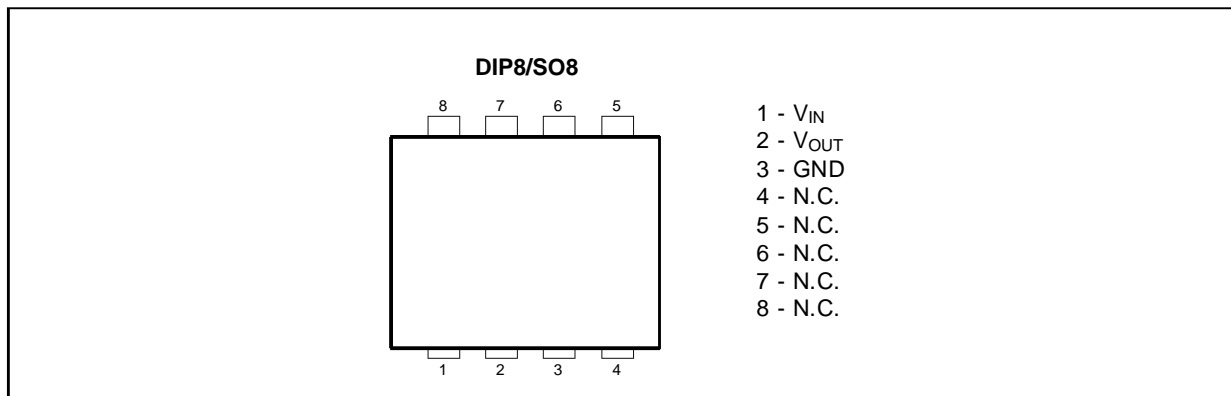
DESCRIPTION

The MC1403 is a serial 2.5V bandgap voltage reference. The major advantages are the 1% precision, the wide input voltage range (4.5V to 40V) and the low quiescent current (1.5mA max.)

ORDER CODES

| Part number | Temperature Range | Package | |
|-------------|-------------------|---------|---|
| | | N | D |
| MC1403 | 0°C, +70°C | • | • |

PIN CONNECTIONS (top views)



MC1403

ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | Value | Unit |
|------------|--------------------------------------|-------------|------|
| V_{IN} | Input Voltage | 40 | V |
| T_{oper} | Operating Free-air Temperature Range | 0 to +70 | °C |
| T_{stg} | Storage Temperature Range | -65 to +150 | °C |

OPERATING CONDITIONS

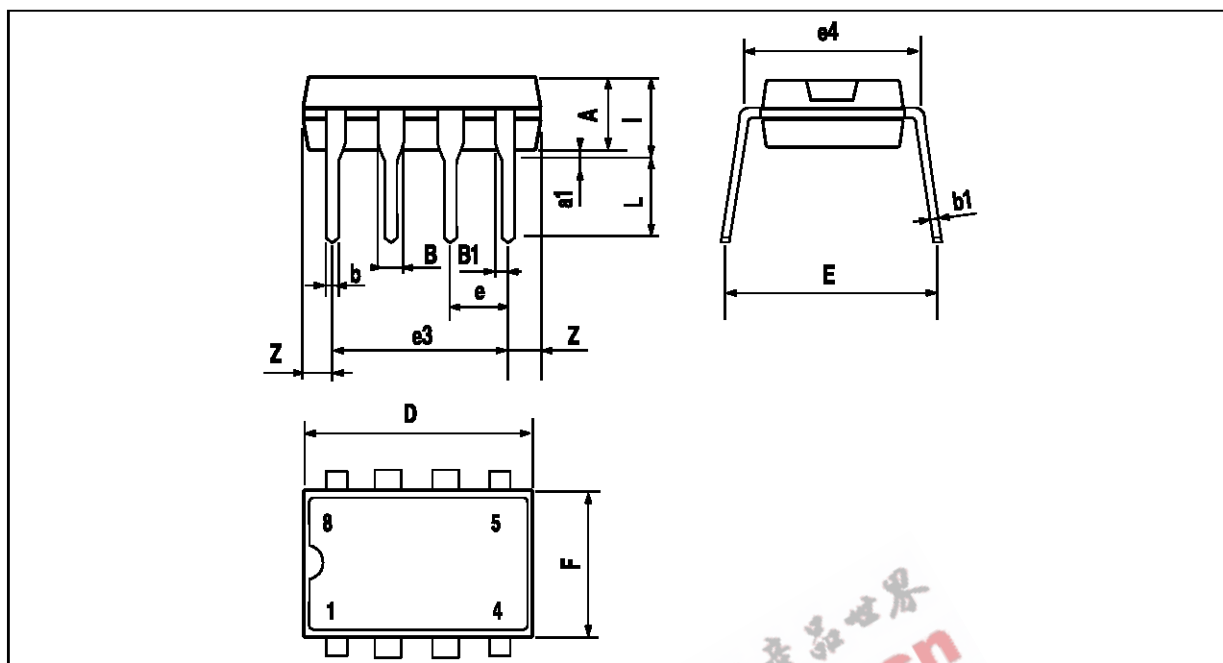
| Symbol | Parameter | Value | Unit |
|----------|-------------------------------|-----------|------|
| V_{IN} | Input Voltage ($I_o = 0mA$) | 4.5 to 40 | V |

ELECTRICAL CHARACTERISTICS

$T_{amb} = 25^{\circ}C$, $V_{IN} = 15V$ (unless otherwise specified)

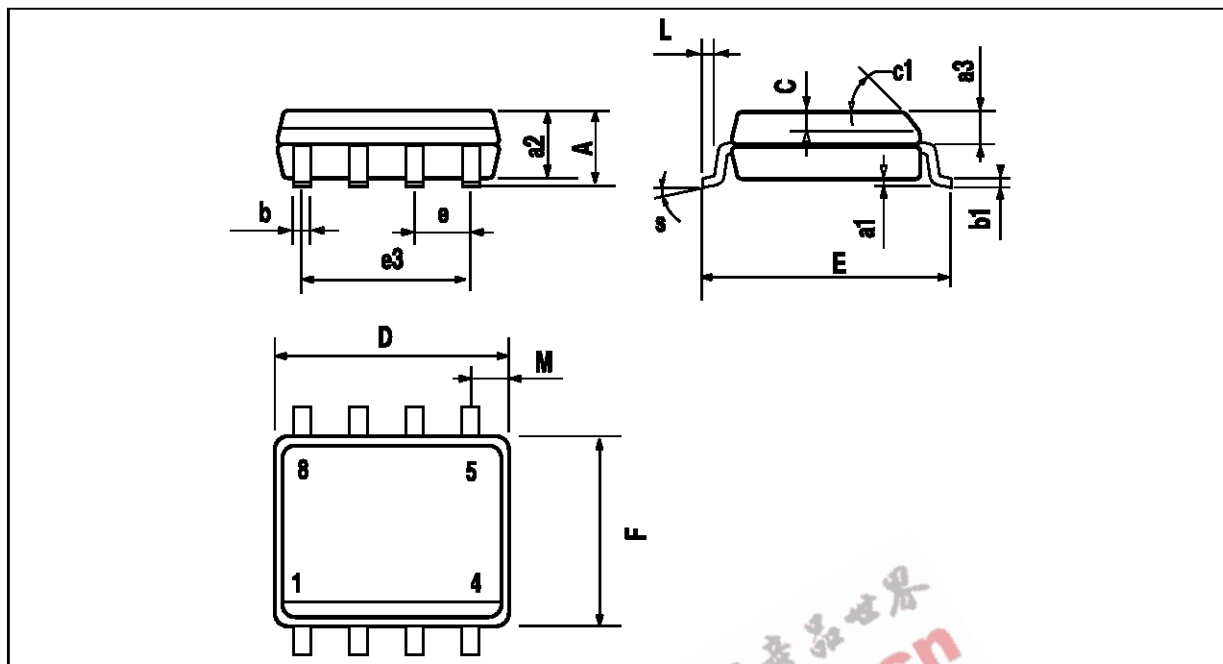
| Symbol | Parameter | Value | | | Unit |
|-------------------------------|--|-------|------|----------|--------|
| | | Min. | Typ. | Max. | |
| V_{OUT} | Output Voltage $I_{OUT} = 0mA$ | 2.475 | 2.5 | 2.525 | V |
| $\frac{\Delta V_O}{\Delta T}$ | Temperature Coefficient of Output Voltage $I_{OUT} = 0mA$ | | 10 | 40 | ppm/°C |
| ΔV_O | Output Voltage change Over the Full Temperature Range $I_{OUT} = 0mA$ | | 2 | 7 | mV |
| Reg _{line} | Line Regulation $I_{OUT} = 0mA$, $4.5V \leq V_i \leq 15V$ $I_{OUT} = 0mA$, $15V \leq V_i \leq 40V$ | | | 3 4.5 | mV |
| Reg _{load} | Load Regulation $0 \leq I_{OUT} \leq 10mA$ | | | 10 | mV |
| I_Q | Quiescent Current $I_{OUT} = 0mA$ | | 1.2 | 1.5 | mA |

PACKAGE MECHANICAL DATA
8 PINS - PLASTIC DIP



| Dimensions | Millimeters | | | Inches | | |
|------------|-------------|------|-------|--------|-------|-------|
| | Min. | Typ. | Max. | Min. | Typ. | Max. |
| A | | 3.32 | | 0.131 | | |
| a1 | 0.51 | | | 0.020 | | |
| B | 1.15 | | 1.65 | 0.045 | | 0.065 |
| b | 0.356 | | 0.55 | 0.014 | | 0.022 |
| b1 | 0.204 | | 0.304 | 0.008 | | 0.012 |
| D | | | 10.92 | | | 0.430 |
| E | 7.95 | | 9.75 | 0.313 | | 0.384 |
| e | | 2.54 | | | 0.100 | |
| e3 | | 7.62 | | | 0.300 | |
| e4 | | 7.62 | | | 0.300 | |
| F | | | 6.6 | | | 0.260 |
| i | | | 5.08 | | | 0.200 |
| L | 3.18 | | 3.81 | 0.125 | | 0.150 |
| Z | | | 1.52 | | | 0.060 |

PACKAGE MECHANICAL DATA
8 PINS - PLASTIC MICROPACKAGE (SO)



| Dimensions | Millimeters | | | Inches | | |
|------------|-------------|------|------|--------|-------|-------|
| | Min. | Typ. | Max. | Min. | Typ. | Max. |
| A | | | 1.75 | | | 0.069 |
| a1 | 0.1 | | 0.25 | 0.004 | | 0.010 |
| a2 | | | 1.65 | | | 0.065 |
| a3 | 0.65 | | 0.85 | 0.026 | | 0.033 |
| b | 0.35 | | 0.48 | 0.014 | | 0.019 |
| b1 | 0.19 | | 0.25 | 0.007 | | 0.010 |
| C | 0.25 | | 0.5 | 0.010 | | 0.020 |
| c1 | 45° (typ.) | | | | | |
| D | 4.8 | | 5.0 | 0.189 | | 0.197 |
| E | 5.8 | | 6.2 | 0.228 | | 0.244 |
| e | | 1.27 | | | 0.050 | |
| e3 | | 3.81 | | | 0.150 | |
| F | 3.8 | | 4.0 | 0.150 | | 0.157 |
| L | 0.4 | | 1.27 | 0.016 | | 0.050 |
| M | | | 0.6 | | | 0.024 |
| S | 8° (max.) | | | | | |

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