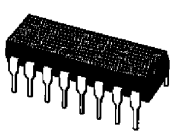
SGS-THOMSON MICROELECTRONICS

HCC/HCF4026B
HCC/HCF4033B

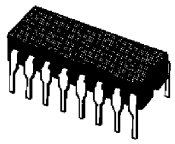
DECADE COUNTERS/DIVIDERS WITH DECODED 7-SEGMENT DISPLAY OUTPUTS

WITH; DISPLAY ENABLE 4026B
RIPPLE BLANKING 4033B

- COUNTER AND 7-SEGMENT DECODING IN ONE PACKAGE
- EASILY INTERFACED WITH 7-SEGMENT DISPLAY TYPES
- FULLY STATIC COUNTER OPERATION : DC TO 6MHz (typ.) AT V_{DD} = 10V
- IDEAL FOR LOW-POWER DISPLAYS
- DISPLAY ENABLE OUTPUT - 4026B
- "RIPPLE BLANKING" AND LAMP TEST - 4033B
- QUIESCENT CURRENT SPECIFIED TO 20V FOR HCC DEVICE
- STANDARDIZED SYMMETRICAL OUTPUT CHARACTERISTICS
- 5V, 10V, AND 15V PARAMETRIC RATING
- INPUT CURRENT OF 100nA AT 18V AND 25°C FOR HCC DEVICE
- 100% TESTED FOR QUIESCENT CURRENT
- MEETS ALL REQUIREMENTS OF JEDEC TENTATIVE STANDARD N° 13A, "STANDARD SPECIFICATIONS FOR DESCRIPTION OF "B" SERIES CMOS DEVICES"



EY
(Plastic Package)



F
(Ceramic Frit Seal Package)

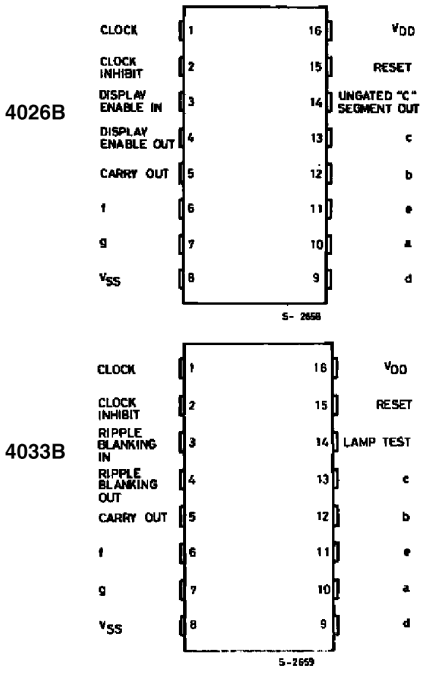
M1
(Micro Package)

C1
(Plastic Chip Carrier)

ORDER CODES :

HCC40XXBF	HCF40XXBM1
HCF40XXBEY	HCF40XXBC1

PIN CONNECTIONS

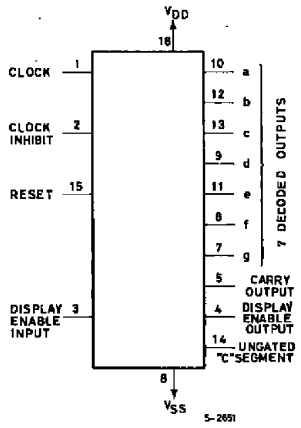


DESCRIPTION

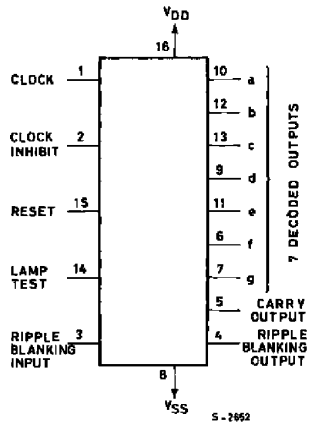
The **HCC4026B/4033B** (extended temperature range) and **HCF4026B/4033B** (intermediate temperature range) are monolithic integrated circuits, available in 16-lead dual in-line plastic or ceramic package and plastic micro package. The **HCC/HCF4026B** and **HCC/HCF4033B** each consist of a 5-stage Johnson decade counter and an output decoder which converts the Johnson code to a 7-segment decoded output for driving one stage in a numerical display. These devices are particularly advantageous in display applications where low power dissipation and/or low package count are important. Inputs common to both types are CLOCK, RESET, & CLOCK INHIBIT ; common outputs are CARRY OUT and the seven decoded outputs (a, b, c, d, e, f, g). Additional inputs and outputs for the **HCC/HCF4026B** include DISPLAY ENABLE input and DISPLAY ENABLE and UNGATED "C-SEGMENT" outputs. Signals peculiar to the **HCC/HCF4033B** are RIPPLE-BLANKING INPUT AND LAMP TEST INPUT and a RIPPLE-BLANKING OUTPUT. A high RESET signal clears the de-

FUNCTIONAL DIAGRAMS

4026B



4033B



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{DD}*	Supply Voltage : **HCC** Types **HCF** Types	– 0.5 to + 20 – 0.5 to + 18	V V
V_i	Input Voltage	– 0.5 to V_{DD} + 0.5	V
I_I	DC Input Current (any one input)	± 10	mA
P_{tot}	Total Power Dissipation (per package) Dissipation per Output Transistor for T_{op} = Full Package-temperature Range	200 100	mW mW
T_{op}	Operating Temperature : **HCC** Types **HCF** Types	– 55 to + 125 – 40 to + 85	°C °C
T_{stg}	Storasge Temperature	– 65 to + 150	°C

Stresses above those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rating conditions for external periods may affect device reliability.

* All voltages values are referred to V_{SS} pin voltage.

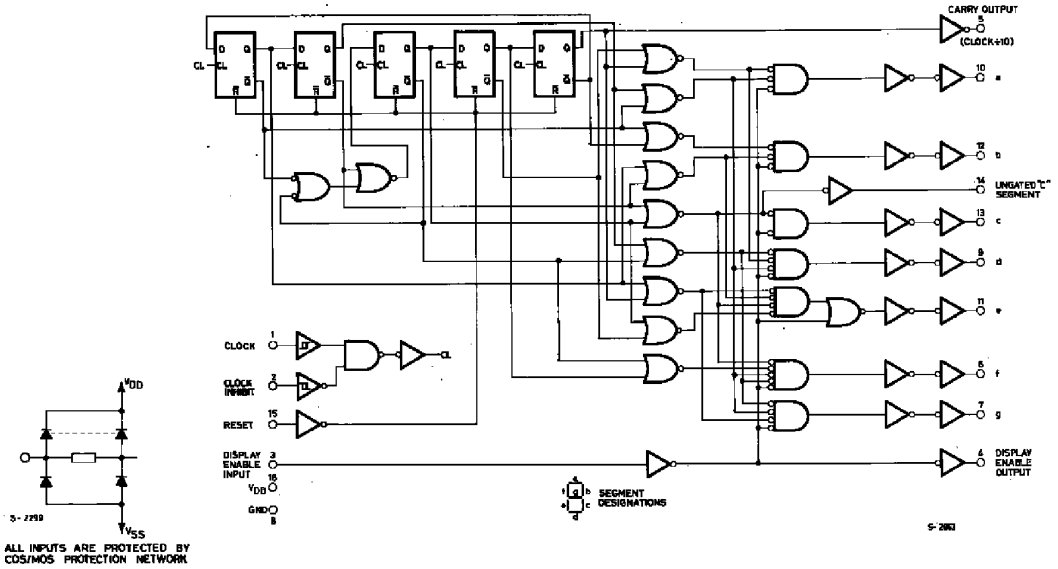
RECOMMENDED OPERATING CONDITIONS

Symbol	Parameter	Value	Unit
V_{DD}	Supply Voltage : **HCC** Types **HCF** Types	3 to 18 3 to 15	V V
V_I	Input Voltage	0 to V_{DD}	V
T_{op}	Operating Temperature : **HCC** Types **HCF** Types	– 55 to + 125 – 40 to + 85	°C °C

HCC/HCF4026B/4033B

LOGIC DIAGRAMS

4026B



4033B