

Gate Arrays

TEMIC Semiconductors offers an extended gate array family providing full solutions to customers. Several technologies from 0.85 μ 2 metal to 0.6 μ 3 metal, offer speed and high levels of integration.

MG2: CMOS Sea-of-Gates Family: 0.5 μ $\geq$ 200 MHz at 3 V, supply voltage 2 to 5.5 V

- 0.5 μ , 3 metal layers
- Gates from 1 k to 700 k
- I/Os from 44 to 480
- Clock rate greater than 200 MHz (PLL) at 3 V
- Mixed power supply, 3 V and 5 V
- Very low power consumption
0.75 μ W/3 V per cell

MG1: CMOS Sea-of-Gates Family: 0.6 μ $\geq$ 200 MHz at 5 V, supply voltage 2 to 5.5 V

Type	Total Cells	Usable Random Gates **	Usable Memory Gates **	Max I/O ***	Total Pads ****
MG1000	798	600	1 600	24	43
MG1001	1 566	1 100	3 100	32	51
MG1002	2 046	1 400	4 100	36	55
MG1004	3 608	2 500	7 200	48	67
MG1009	8 970	6 300	17 900	72	91
MG1014*	13 846	9 700	27 700	88	107
MG1020	19 879	13 900	39 800	104	123
MG1033	32 865	23 000	65 700	130	149
MG1042*	41 869	29 300	83 700	146	165
MG1052	51 958	36 400	103 900	162	181
MG1070	70 059	49 000	140 100	188	207
MG1090*	88 536	62 000	177 100	212	231
MG1120	118 472	82 900	236 900	244	263
MG1140*	140 049	98 000	280 000	264	383
MG1200*	196 384	137 500	392 800	312	331
MG1265*	264 375	185 100	528 800	360	379
MG1350	346 203	242 300	692 400	412	431
MG1480*	480 250	336 200	960 500	484	503

* To be used when hermetic packaged

** The maximum number of usable gates is application dependent.

*** I/O pads may be configured as V_{DD} or V_{SS} supplies according to circuit requirements.

**** This includes I/O pads and dedicated pads for supply PLI.

Warning: MG1480 cannot be used for SCC 9000 level B or C, or MIL-STD-883 class S.

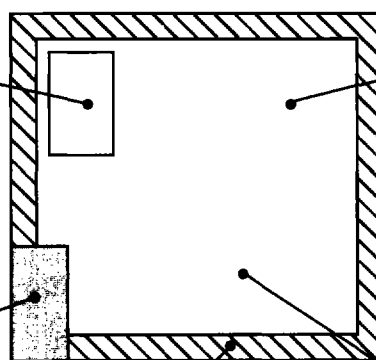
MC: CMOS Family: 0.85 μ / 70 MHz 5 V, 3.3 V and lower

Type	Total Gates	Usable Gates	Max I/O	Total Pads
MCT04K	364	330	28	32
MCT08K	836	760	40	44
MCT2K	2 040	1 800	64	68
MC5K	5 040	4 500	86	90
MCT8K	7 992	7 200	124	128
MC10K	10 000	9 000	122	126
MCT12K	11 780	10 500	156	160
MCR22K	21 952	15 200	144	148
MCT29K	29 000	20 000	196	200
MCR35K	35 040	24 000	182	186
MCR50K	50 512	35 000	216	220
MCT66K	66 000	46 000	276	292
MCT86K	86 000	60 000	316	332

Composite Arrays – MCM / MG1M / MG2M CMOS Families

Hard cells

- RAM / ROM / FIFO
- Multiplier
- Multiport RAM
- Compiled blocks
- Microcores



Basic libraries Soft cells

- Microcontroller peripherals
- Protocol controller

Gate based RAM Synthesized blocks

- Array or cell based

Application-specific cells

- CAN
- IrDA interface

Interface blocks

- A/D, D/A
- ATM 155 Mbits

Periphery (pads, buffers)

- TTL, CMOS, ECL
- Pseudo ECL, GTL
- PCI

Main Benefits

- Gate array flexibility:
 - Short design and production cycle
 - Same design tools
 - Customization of last layers
 - Low-cost modifications and derived products
- Generated and imported blocks
- High integration level:
 - Up to 4000 gates per sq. mm (depending on the number of blocks)