

Product Features	mifare® Ultralight MF0 IC U1X	mifare® Std 1k MF1 IC S50	mifare® Std 4k MF1 IC S70	mifare® DESFire MF3 IC D40
<b>Memory</b>				
EEPROM size	512 bit	1024 byte	4096 byte	4096 byte
OTP area	32 bit	-	-	-
Write Endurance	1000 cycles	100 000 cycles	100 000 cycles	100 000 cycles
Data Retention	2 years	10 years	10 years	10 years
Organisation	16 pages á 4 byte	16 sectors á 64 byte	32 sectors á 64 byte 8 sectors á 256 byte	flexible file system
<b>RF-Interface</b>				
Acc. To ISO 14443A	yes - up to layer 3	yes - up to layer 3	yes - up to layer 3	yes - up to layer 4
Frequency	13.56 MHz	13.56 MHz	13.56 MHz	13.56 MHz
Baudrate	106 kbit	106 kbit	106 kbit	106 - 424 kbit
Anticollision	bit-wise	bit-wise	bit-wise	bit-wise
Operating Distance	up to 10 cm	up to 10 cm	up to 10 cm	up to 10 cm
<b>Security</b>				
Unique Serial Number	7 byte, cascaded	4 byte	4 byte	7 byte, cascaded
Random Number Generator	-	yes	yes	yes, acc. FIPS 140-2
Access Keys	-	2 keys per sector	2 keys per sector	14 keys per application
Access Conditions	per page	per sector	per sector	per file
mifare® Classic Security	-	supported	supported	-
DES & 3DES security	-	-	-	MACing/Encipherment
Anti-tearing support by chip	-	for value blocks	for value blocks	yes
<b>Special Features</b>				
Multiapplication	-	supports MAD*	supports MAD2**	28 applications, MAD3***
Purse Functionality	-	Value block format	Value block format	Value file
Secure Transport Transaction	48 byte read 16 byte write	512 byte read 16 byte write	512 byte read 128 byte write	512 byte read 128 byte write
Transaction Time [ms]	31.4	164	140	105
<b>Packaging</b>				
Sawn Wafer	-	MF1ICS5005W/V5D	MF1ICS7001W/V5D	MF3ICD4001DW/V5
Sawn Wafer (Au-Bumped)	MF0ICU1X01W/V4D	MF1ICS5005W/V4D	MF1ICS7001W/V4D	-
MOA2 Module	-	MF1MOA2S50/D3F	MF1MOA2S70/D	MF3MOD4001DV
FCP2 Module	MF0FCP2U1X/DX	MF1FCP2S50/DX	-	-

**DESFire:**  
the next step forward in  
contactless technology

\*MAD: mifare® Application Directory

\*\*MAD2: MAD Extension for 4 kbyte EEPROM size

\*\*\*MAD3: MAD2 Extension for DESFire