



Product Features	MIFARE Classic		MIFARE Plus						MIFARE DESFire							
	EV1		S	SE	X		EV1		EV1			EV2				
RF Interface	ISO/IEC 14443-2, Type A 13.56 MHz															
Protocol	ISO/IEC 14443-3&4						ISO/IEC 14443-4									
UID – unique identifier	7-byte UID, 4-byte NUID, Random ID						7-byte UID, Random ID									
Communication speed	106-848 Kbps															
Memory size [Bytes]	1K	4K	2K	4K	1K	2K	4K	2K	4K	256	2K	4K	8K	2K	4K	8K
Memory Model	Compact, Sectors & 16-byte block						Flexible file system									
Crypto	Crypto-1		Crypto-1, AES						DES / 2K3DES / 3K3DES / AES							
Key Length	48-bit Crypto-1		48-bit Crypto-1, 128-bit AES						128-bit AES, up to 168-bit DES							
Authentication	3-pass mutual															
Communication-Security	Encrypted		Plain, CMACed, Encrypted w. CMAC						Plain, CMACed, Encrypted w. CMAC							
MIsmartApp	-						-						✓			
Transaction MAC	-						✓		-						✓	
Multi Key Sets	-						-						✓			
Proximity Check	-		✓				-				✓					
Virtual Card Select	✓						-						✓			
Originality check features	ECC signature		AES originality keys				AES originality keys, ECC signature		AES originality keys, ECC signature							
CC Certification	-		EAL4+		-		EAL4+		EAL5+		EAL4+			EAL5+		
ISO 7816-4 APDU	-						✓		✓							
NFC compliance	No- supported by majority of NFC devices		NFC capable in SL3				NFC capabilities in SL1 and SL3		NFC Forum Tag Type 4 V2.0 compliant							
Target applications	Various applications – recommended to move to higher security ICs		Public transport / Campus cards / Access management						Smart City Platform / Advanced Mobility Multi-applications / Micropayment / Loyalty Programs / Access Management							
Input capacitance	17pF or 50pF		17pF				17pF or 70pF		17pF or 70pF							
Multi applications	supported via MAD		supported via MAD						dynamic							