eMemory
Embedded Wisely, Embedded Widely

NeoFuse® – High-Security Antifuse OTP Solution

Overview

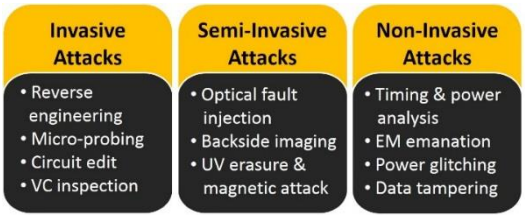
eMemory's NeoFuse is an one-time programmable memory solution using anti-fuse technology. The IP is tailored for applications with low-power, high security needs, such as IoT and wearable devices.

Feature

- ❖ Anti-fuse technology
- ❖ Low power
- ❖ High reliability
- ❖ High security
- ❖ Compatible to standard logic processes
- ❖ No additional masks or process steps
- ❖ Fast time-to-market
- ❖ Reliable data retention against UV light or high temperatures
- ❖ An ideal replacement of eFuse

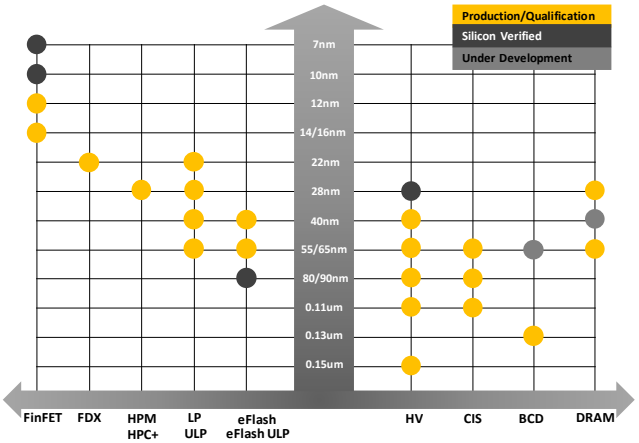
Designed for Security

- ❖ Bit-level program lock against unauthorized data modifications
- ❖ 3-level address scrambling
- ❖ Tamper response to FIB circuit edit on sensitive circuits
- ❖Alert SoC chips when top metal layer cracked
- ❖ Security Functions certified by worldwide third-party CAs.
- ❖ Resistance to the following Attacks



Availability

NeoFuse is available from 0.15um to 7nm. The IP is suitable for advanced process technologies.



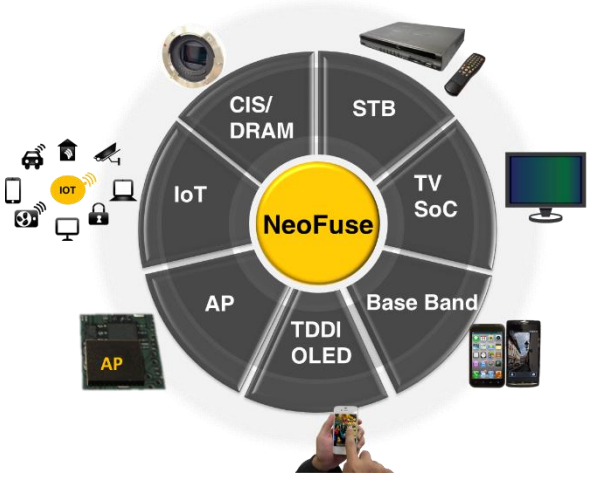
Technology Node		7nm FF (0.75V/1.8V)	12nm FFC (0.8V/1.8V)	28nm HPC+ (0.9V/1.8V)	28nm HPC+ (0.9V/2.5V)
Memory Configuration		4KX16	16KX32	8KX32	16KX8
Cell Device		0.75V	0.8V	0.9V	
Operating Voltage	VDD	0.55V~0.96V	0.72V~0.92V	0.81V~0.99V	0.81V~1.05V
	VDD2	1.62V~1.98V			2.97V~3.63V
	VPP	Charge Pump			
Access Time (max)		60ns~80ns	50ns	50ns	70ns
Security Features		Built-in		-	Built-in

Technology Node		40nm ULP/LL (0.9V/2.5V)	55nm ULP/LL (0.9V/2.5V)	28nm HV (1.0V/8V/+-10V)	40nm HV (1.1V/6V&8V/32V)
Memory Configuration		8KX32	8KX32	4KX32	8KX8
Cell Device		0.9V		1.0V	1.1V
Operating Voltage	VDD	0.81V~1.21V	0.81V~1.32V	0.9V~1.15V	0.99V~1.21V
	VDD2	1.62V~3.63V/1.62V~2.75V(read) 2.25V~3.63V /2.25V~2.75V(PGM)		2.3V~4.5V	1.62V~1.98V/2.3V~4.5V(read) 2.3V~4.5V(PGM)
	VPP	Charge Pump		5.5V~6.0V(PGM)	5.75V~6.25V(PGM)
Access Time (max)		50ns~60ns		200ns	

Above IP specifications are simple summaries for reference only, please contact us for exact and detail definition if further information is needed.

Application

NeoFuse is used in a broad range of applications:



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