



181128438 Revision B of Tiny Gecko Series

1

PRCN Issue Date: 11/28/2018

Effective Date: 3/6/2019

PCN Type: Product Revision

Description of Change

Silicon Labs is pleased to announce product revision B for EFM32 Tiny Gecko Series 1 (EFM32TG11), along with updated data sheet version 1.0 and updated Errata version 0.3.

The updated data sheet sections include:

- Ordering Information
- Electrical Characteristics (various sub-sections)
- Device pinout Table 5.2, Table 5.6, Table 5.7, Table 5.8, Table 5.12, Table 5.13
- General Purpose Input Output
- Alternate Functionality Overview
- Table 7.1: QFN80 Package Dimensions
- Table 7.2: QFN80 PCB Land Pattern Drawing
- Revision History

No specifications on Revision A silicon were relaxed on Revision B.
See data sheet v1.0 for exact changes.

The updated Errata v0.3 documents the 15 fixed errata items on the Revision B products and also captures new errata that have not been documented yet. Please see the Errata v0.3 for complete details.

Silicon Labs reserves the right to replace orders for Revision A silicon with Revision B silicon upon the effective date of this PRCN.

Reason for Change

Silicon revision and updates to Data Sheet and Errata.

Impact on Form, Fit, Function, Quality, Reliability

There is no impact to form, fit, quality, or reliability.

The following functions are impacted:

- Updated device revision information in the device ROM Table.
- New errata: CSEN_E201, CSEN_E202, DBG_E205, I2C_E202, I2C_E203, I2C_E205, I2C_E206, and USART_E204.
- Resolved errata: ADC_E224, ADC_E225, ADC_E228, BU_E201, BU_E202, CMU_E203, CMU_E204, DBG_E205, EMU_E214, I2C_E202, I2C_E203, I2C_E205, LCD_E201, RMU_E203, and TRNG_E202

Product Identification

Existing Part #	Replacement Part #	Drop in Compatible
EFM32TG11B120F128GM32-A	EFM32TG11B120F128GM32-B	Yes
EFM32TG11B120F128GM64-A	EFM32TG11B120F128GM64-B	Yes
EFM32TG11B120F128GQ48-A	EFM32TG11B120F128GQ48-B	Yes
EFM32TG11B120F128GQ64-A	EFM32TG11B120F128GQ64-B	Yes
EFM32TG11B120F128IM32-A	EFM32TG11B120F128IM32-B	Yes
EFM32TG11B120F128IM64-A	EFM32TG11B120F128IM64-B	Yes
EFM32TG11B120F128IQ48-A	EFM32TG11B120F128IQ48-B	Yes
EFM32TG11B120F128IQ64-A	EFM32TG11B120F128IQ64-B	Yes
EFM32TG11B140F64GM32-A	EFM32TG11B140F64GM32-B	Yes
EFM32TG11B140F64GM64-A	EFM32TG11B140F64GM64-B	Yes

EFM32TG11B140F64GQ48-A	EFM32TG11B140F64GQ48-B	Yes
EFM32TG11B140F64GQ64-A	EFM32TG11B140F64GQ64-B	Yes
EFM32TG11B140F64IM32-A	EFM32TG11B140F64IM32-B	Yes
EFM32TG11B140F64IM64-A	EFM32TG11B140F64IM64-B	Yes
EFM32TG11B140F64IQ48-A	EFM32TG11B140F64IQ48-B	Yes
EFM32TG11B140F64IQ64-A	EFM32TG11B140F64IQ64-B	Yes
EFM32TG11B320F128GM64-A	EFM32TG11B320F128GM64-B	Yes
EFM32TG11B320F128GQ48-A	EFM32TG11B320F128GQ48-B	Yes
EFM32TG11B320F128GQ64-A	EFM32TG11B320F128GQ64-B	Yes
EFM32TG11B320F128IM64-A	EFM32TG11B320F128IM64-B	Yes
EFM32TG11B320F128IQ48-A	EFM32TG11B320F128IQ48-B	Yes
EFM32TG11B320F128IQ64-A	EFM32TG11B320F128IQ64-B	Yes
EFM32TG11B340F64GM64-A	EFM32TG11B340F64GM64-B	Yes
EFM32TG11B340F64GQ48-A	EFM32TG11B340F64GQ48-B	Yes
EFM32TG11B340F64GQ64-A	EFM32TG11B340F64GQ64-B	Yes
EFM32TG11B340F64IM64-A	EFM32TG11B340F64IM64-B	Yes
EFM32TG11B340F64IQ48-A	EFM32TG11B340F64IQ48-B	Yes
EFM32TG11B340F64IQ64-A	EFM32TG11B340F64IQ64-B	Yes
EFM32TG11B520F128GM32-A	EFM32TG11B520F128GM32-B	Yes
EFM32TG11B520F128GM64-A	EFM32TG11B520F128GM64-B	Yes
EFM32TG11B520F128GM80-A	EFM32TG11B520F128GM80-B	Yes
EFM32TG11B520F128GQ48-A	EFM32TG11B520F128GQ48-B	Yes
EFM32TG11B520F128GQ64-A	EFM32TG11B520F128GQ64-B	Yes
EFM32TG11B520F128GQ80-A	EFM32TG11B520F128GQ80-B	Yes
EFM32TG11B520F128IM32-A	EFM32TG11B520F128IM32-B	Yes
EFM32TG11B520F128IM64-A	EFM32TG11B520F128IM64-B	Yes
EFM32TG11B520F128IM80-A	EFM32TG11B520F128IM80-B	Yes
EFM32TG11B520F128IQ48-A	EFM32TG11B520F128IQ48-B	Yes
EFM32TG11B520F128IQ64-A	EFM32TG11B520F128IQ64-B	Yes
EFM32TG11B520F128IQ80-A	EFM32TG11B520F128IQ80-B	Yes
EFM32TG11B540F64GM32-A	EFM32TG11B540F64GM32-B	Yes
EFM32TG11B540F64GM64-A	EFM32TG11B540F64GM64-B	Yes
EFM32TG11B540F64GM80-A	EFM32TG11B540F64GM80-B	Yes
EFM32TG11B540F64GQ48-A	EFM32TG11B540F64GQ48-B	Yes
EFM32TG11B540F64GQ64-A	EFM32TG11B540F64GQ64-B	Yes
EFM32TG11B540F64GQ80-A	EFM32TG11B540F64GQ80-B	Yes
EFM32TG11B540F64IM32-A	EFM32TG11B540F64IM32-B	Yes
EFM32TG11B540F64IM64-A	EFM32TG11B540F64IM64-B	Yes
EFM32TG11B540F64IM80-A	EFM32TG11B540F64IM80-B	Yes
EFM32TG11B540F64IQ48-A	EFM32TG11B540F64IQ48-B	Yes
EFM32TG11B540F64IQ64-A	EFM32TG11B540F64IQ64-B	Yes
EFM32TG11B540F64IQ80-A	EFM32TG11B540F64IQ80-B	Yes
EFM32TG11B120F128GM32-AR	EFM32TG11B120F128GM32-BR	Yes
EFM32TG11B120F128GM64-AR	EFM32TG11B120F128GM64-BR	Yes
EFM32TG11B120F128GQ48-AR	EFM32TG11B120F128GQ48-BR	Yes
EFM32TG11B120F128GQ64-AR	EFM32TG11B120F128GQ64-BR	Yes
EFM32TG11B120F128IM32-AR	EFM32TG11B120F128IM32-BR	Yes
EFM32TG11B120F128IM64-AR	EFM32TG11B120F128IM64-BR	Yes
EFM32TG11B120F128IQ48-AR	EFM32TG11B120F128IQ48-BR	Yes
EFM32TG11B120F128IQ64-AR	EFM32TG11B120F128IQ64-BR	Yes
EFM32TG11B140F64GM32-AR	EFM32TG11B140F64GM32-BR	Yes
EFM32TG11B140F64GM64-AR	EFM32TG11B140F64GM64-BR	Yes
EFM32TG11B140F64GQ48-AR	EFM32TG11B140F64GQ48-BR	Yes
EFM32TG11B140F64GQ64-AR	EFM32TG11B140F64GQ64-BR	Yes
EFM32TG11B140F64IM32-AR	EFM32TG11B140F64IM32-BR	Yes
EFM32TG11B140F64IM64-AR	EFM32TG11B140F64IM64-BR	Yes
EFM32TG11B140F64IQ48-AR	EFM32TG11B140F64IQ48-BR	Yes
EFM32TG11B140F64IQ64-AR	EFM32TG11B140F64IQ64-BR	Yes
EFM32TG11B320F128GM64-AR	EFM32TG11B320F128GM64-BR	Yes
EFM32TG11B320F128GQ48-AR	EFM32TG11B320F128GQ48-BR	Yes
EFM32TG11B320F128GQ64-AR	EFM32TG11B320F128GQ64-BR	Yes
EFM32TG11B320F128IM64-AR	EFM32TG11B320F128IM64-BR	Yes
EFM32TG11B320F128IQ48-AR	EFM32TG11B320F128IQ48-BR	Yes
EFM32TG11B320F128IQ64-AR	EFM32TG11B320F128IQ64-BR	Yes
EFM32TG11B340F64GM64-AR	EFM32TG11B340F64GM64-BR	Yes
EFM32TG11B340F64GQ48-AR	EFM32TG11B340F64GQ48-BR	Yes
EFM32TG11B340F64GQ64-AR	EFM32TG11B340F64GQ64-BR	Yes

EFM32TG11B340F64IM64-AR	EFM32TG11B340F64IM64-BR	Yes
EFM32TG11B340F64IQ48-AR	EFM32TG11B340F64IQ48-BR	Yes
EFM32TG11B340F64IQ64-AR	EFM32TG11B340F64IQ64-BR	Yes
EFM32TG11B510F128GM80-AR	EFM32TG11B510F128GM80-BR	Yes
EFM32TG11B510F128GQ80-AR	EFM32TG11B510F128GQ80-BR	Yes
EFM32TG11B520F128GM32-AR	EFM32TG11B520F128GM32-BR	Yes
EFM32TG11B520F128GM64-AR	EFM32TG11B520F128GM64-BR	Yes
EFM32TG11B520F128GM80-AR	EFM32TG11B520F128GM80-BR	Yes
EFM32TG11B520F128GQ48-AR	EFM32TG11B520F128GQ48-BR	Yes
EFM32TG11B520F128GQ64-AR	EFM32TG11B520F128GQ64-BR	Yes
EFM32TG11B520F128GQ80-AR	EFM32TG11B520F128GQ80-BR	Yes
EFM32TG11B520F128IM32-AR	EFM32TG11B520F128IM32-BR	Yes
EFM32TG11B520F128IM64-AR	EFM32TG11B520F128IM64-BR	Yes
EFM32TG11B520F128IM80-AR	EFM32TG11B520F128IM80-BR	Yes
EFM32TG11B520F128IQ48-AR	EFM32TG11B520F128IQ48-BR	Yes
EFM32TG11B520F128IQ64-AR	EFM32TG11B520F128IQ64-BR	Yes
EFM32TG11B520F128IQ80-AR	EFM32TG11B520F128IQ80-BR	Yes
EFM32TG11B540F64GM32-AR	EFM32TG11B540F64GM32-BR	Yes
EFM32TG11B540F64GM64-AR	EFM32TG11B540F64GM64-BR	Yes
EFM32TG11B540F64GM80-AR	EFM32TG11B540F64GM80-BR	Yes
EFM32TG11B540F64GQ48-AR	EFM32TG11B540F64GQ48-BR	Yes
EFM32TG11B540F64GQ64-AR	EFM32TG11B540F64GQ64-BR	Yes
EFM32TG11B540F64GQ80-AR	EFM32TG11B540F64GQ80-BR	Yes
EFM32TG11B540F64IM32-AR	EFM32TG11B540F64IM32-BR	Yes
EFM32TG11B540F64IM64-AR	EFM32TG11B540F64IM64-BR	Yes
EFM32TG11B540F64IM80-AR	EFM32TG11B540F64IM80-BR	Yes
EFM32TG11B540F64IQ48-AR	EFM32TG11B540F64IQ48-BR	Yes
EFM32TG11B540F64IQ64-AR	EFM32TG11B540F64IQ64-BR	Yes
EFM32TG11B540F64IQ80-AR	EFM32TG11B540F64IQ80-BR	Yes

Last Date of Unchanged Product: 3/6/2019

Qualification Samples

Samples available upon request.

Customer Response

Lack of acknowledgment of the PCN within 30 days constitutes acceptance of the change, Ref. JEDEC-J-STD-046.

To request further data or inquire about this notification, please contact your Silicon Labs sales representative. A list of Silicon Labs sales representatives is available at <http://www.silabs.com>.

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Qualification Data

See qualification report in the attached Appendix.



EFM32TG11 Qualification Report

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Part Rev B, TSMC Fabrication							
Test Name	Test Condition	Qualification	Lot ID or Start	Fail/Pass or End	Notes	Summary	Status
Test Group A – Accelerated Environment Stress Tests - 80-TQFP-12x12 - SPIIL Assembly							
HAST	JA110 130°C, 85%RH Vcc=3.8V, 96 hours	3 lots, N=>25	Q041412	0/27	1	3 lots 0/77	Pass
			Q041554	0/25	1		
			Q041555	0/25	1		
UHAST	JA118 130°C, 85%RH 96 hours	3 lots, N=>25	Q041411	0/27	1	3 lots 0/81	Pass
			Q041558	0/27	1		
			Q041559	0/27	1		
Temp Cycle	JA104 Cond C: -85°C to 150°C 500 cycles	3 lots, N=>25	Q041410	0/27	1	3 lots 0/81	Pass
			Q041556	0/27	1		
			Q041557	0/27	1		
HTSL	JA103 150°C, 1000hr	3 lots, N=>25	Q041413	0/27	1	3 lots 0/81	Pass
			Q041552	0/27	1		
			Q041553	0/27	1		
Test Group A – Accelerated Environment Stress Tests - 64-TQFP-10x10, 48-TQFP-7x7 - ASEKR Assembly							
HAST	JA110 130°C, 85%RH Vcc=3.8V, 96 hours	3 lots, N=>25	Q041116	0/27	1	3 lots 0/83	Pass
			Q041916	0/28	1		
			Q041920	0/28	1		
UHAST	JA118 130°C, 85%RH 96 hours	3 lots, N=>25	Q041119	0/28	1	3 lots 0/84	Pass
			Q041917	0/28	1		
			Q041921	0/28	1		
Temp Cycle	JA104 Cond C: -85°C to 150°C 500 cycles	3 lots, N=>25	Q041118	0/28	1	5 lots 1/135	Pass
			Q041918	1/26	1,2		
			Q042596	0/27	1		
			Q042493	0/27	1		
			Q042596	0/27	1		
HTSL	JA103 150°C, 1000hr	3 lots, N=>25	Q041117	0/28	1	3 lots 0/82	Pass
			Q041919	0/27	1		
			Q041923	0/27	1		
Test Group A – Accelerated Environment Stress Tests - 80-QFN-9x9, 64-QFN-9x9, 32-QFN-5x5 - ASEKR Assembly							
HAST	JA110 130°C, 85%RH Vcc=3.8V, 264 hours	3 lots, N=>25	Q041940	0/30	1	3 lots 0/90	Pass
			Q041941	0/30	1		
			Q041942	0/30	1		
UHAST	JA118 130°C, 85%RH 96 hours	3 lots, N=>25	Q041570	0/27	1	3 lots 0/108	Pass
			Q041584	0/27	1		
			Q041633	0/27	1		
			Q042495	0/27	1		
Temp Cycle	JA104 Cond C: -85°C to 150°C 500 cycles	3 lots, N=>25	Q041569	0/27	1	4 lots 0/108	Pass
			Q041583	0/27	1		
			Q041632	0/27	1		
			Q042494	0/27	1		

Qualification Report



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Part Rev B, TSMC Fabrication							
Test Name	Test Condition	Qualification	Lot ID of Start	Fail/Pass of End	Notes	Summary	Status
HTSL	JA103 150°C, 1000hr	3 lots, N=>25	Q041568	0/27	1	3 lots 0/81	Pass
			Q041582	0/27	1		
			Q041635	0/27	1		
Test Group B – Accelerated Lifetime Simulation Tests							
HTOL	JA108 T _j ≥ 125°C, Dynamic V _{cc} =3.8V, 1000 hours	3 lots, N=>77	Q041560	0/80		3 lots 0/240	Pass
			Q042111	0/80			
			Q042230	0/80			
LTOL	JA108 T _a = -10°C, Dynamic V _{cc} =3.8V, 1000 hours	1 lot, N=>32	Q040451	0/80		1 lots 0/80	Pass
ELFR	JA108 T _j ≥ 125°C, Dynamic V _{cc} =3.8V, 48 hours	3 lots, N=>500	Q041467	0/510		4 lots 0/2040	Pass
			Q042112	0/510			
			Q043315	0/510			
			Q042117	0/510			
NVM Endurance, Retention and Operating Life	JESD22-A117 25°C 500 hours	3 lots, N=>39	Q041577	0/39	3	3 lots 0/118	Pass
			Q040960	0/40	3		
			Q041578	0/39	3		
NVM Endurance, Retention and Operating Life	JESD22-A117 150°C 1000 hours	3 lots, N=>39	Q041533	0/40	4	3 lots 0/119	Pass
			Q041534	0/39	4		
			Q041092	0/40	4		
Test Group E – Electrical Verification							
ESD-HBM	JS-001	1 lot, N=>3	Q042576			2.5 kV	Class 2
ESD-CDM	JS-002	1 lot, N=>3	Q043364		5	600 V	Class III
			Q042337		6	750 V	Class III
			Q042482		7	750 V	Class III
			Q041184		8	750 V	Class III
			Q042101		9	750 V	Class III
			Q042338		10	750 V	Class III
Latch Up	JESD78 ±100mA Overvoltage = 5.25V	1 lot, N=>3	Q041183 Q041381	25 °C 85 °C			Pass



EFM32TG11 Qualification Report

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Part Rev B, TSMC Fabrication

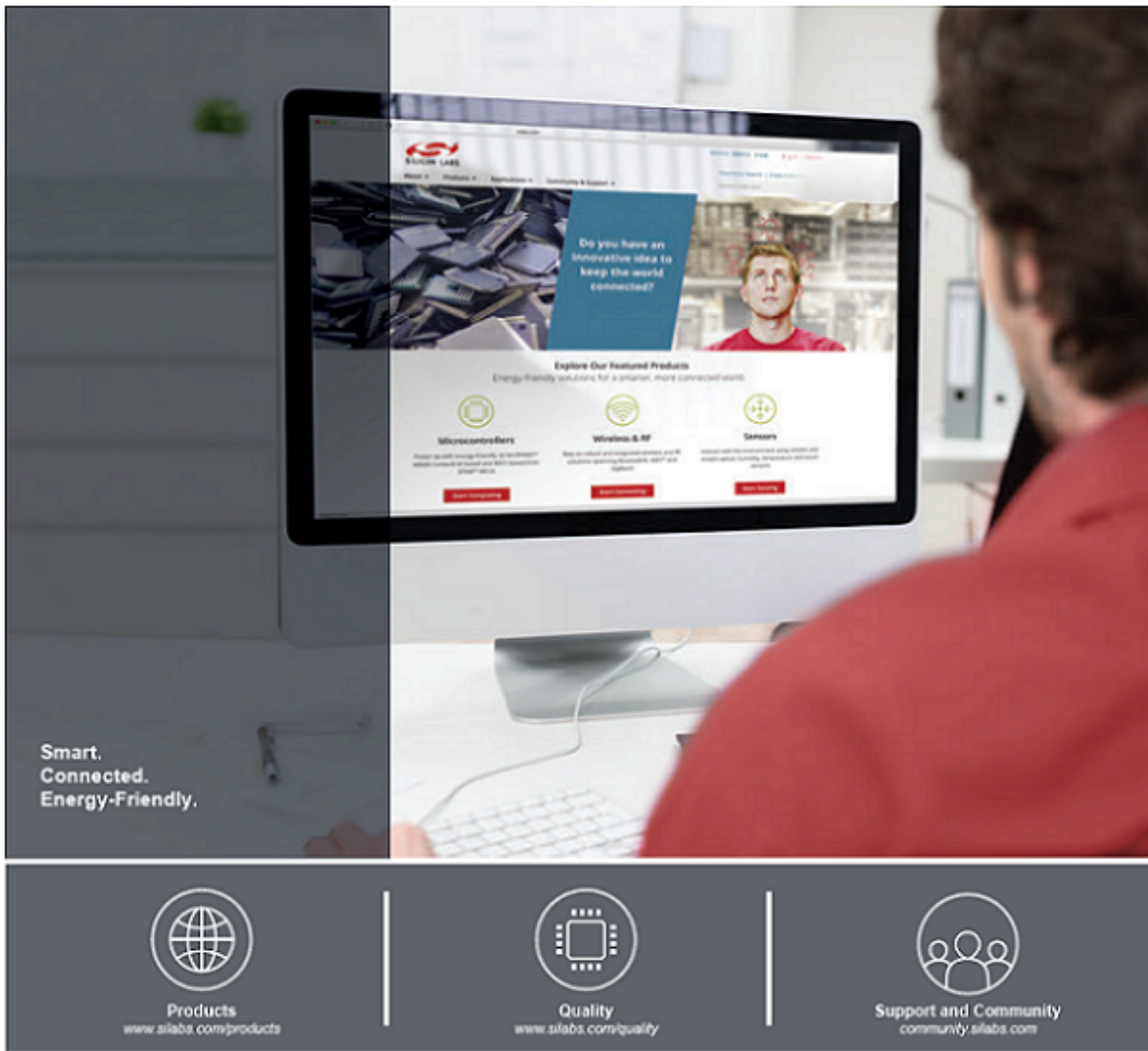
Test Name	Test Condition	Qualification	Lot ID or Start	Fail/Pass or End	Notes	Summary	Status
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Notes:

1. Parts are Pre-conditioned at MSLx/260°C
2. Corrective actions has been implemented and validated in ASEKR
3. Preconditioned with 10K write/erase cycles at 25°C
4. Preconditioned with 10K write/erase cycles at 125°C
5. 80-TQFP-12x12
6. 64_TQFP-10x10
7. 48-TQFP-7x7
8. 80-QFN-9x9
9. 64-QFN-9x9
10. 32-QFN-5x5

This report applies to the following part numbers:

EFM32TG11B120F128IM32-BR	EFM32TG11B340F64GM84-BR	EFM32TG11B540F64GM32-BR
EFM32TG11B120F128IM84-BR	EFM32TG11B340F64GQ48-BR	EFM32TG11B540F64GM84-BR
EFM32TG11B120F128IQ48-BR	EFM32TG11B340F64GQ64-BR	EFM32TG11B540F64GM80-BR
EFM32TG11B120F128IQ64-BR	EFM32TG11B340F64IM84-BR	EFM32TG11B540F64GQ48-BR
EFM32TG11B140F64GM32-BR	EFM32TG11B340F64IQ48-BR	EFM32TG11B540F64GQ64-BR
EFM32TG11B140F64GM84-BR	EFM32TG11B340F64IQ64-BR	EFM32TG11B540F64GQ80-BR
EFM32TG11B140F64GQ48-BR	EFM32TG11B520F128GM32-BR	EFM32TG11B540F64IM32-BR
EFM32TG11B140F64GQ64-BR	EFM32TG11B520F128GM84-BR	EFM32TG11B540F64IM64-BR
EFM32TG11B140F64IM32-BR	EFM32TG11B520F128GM80-BR	EFM32TG11B540F64IM80-BR
EFM32TG11B140F64IM64-BR	EFM32TG11B520F128GQ48-BR	EFM32TG11B540F64IQ48-BR
EFM32TG11B140F64IQ48-BR	EFM32TG11B520F128GQ64-BR	EFM32TG11B540F64IQ64-BR
EFM32TG11B140F64IQ64-BR	EFM32TG11B520F128GQ80-BR	EFM32TG11B540F64IQ80-BR
EFM32TG11B320F128GM84-BR	EFM32TG11B520F128IM32-BR	EFM32TG11B120F128GM32-BR
EFM32TG11B320F128GQ48-BR	EFM32TG11B520F128IM64-BR	EFM32TG11B120F128GM84-BR
EFM32TG11B320F128GQ64-BR	EFM32TG11B520F128IM80-BR	EFM32TG11B120F128GQ48-BR
EFM32TG11B320F128IM84-BR	EFM32TG11B520F128IQ48-BR	EFM32TG11B120F128GQ64-BR
EFM32TG11B320F128IQ48-BR	EFM32TG11B520F128IQ64-BR	
EFM32TG11B320F128IQ64-BR	EFM32TG11B520F128IQ80-BR	



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