

Mapping of OPTIREG™ product portfolio with various microcontrollers

ATV SP APS
H2 2024

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How to use this document?

- The aim of this document is to give an overview of the fit between OPTIREG™ products and various microcontrollers. For detailed information please refer to datasheets.
- On the upcoming slide you will find a navigation table, to jump to the slide with information of your interest. Once you are on the slide you can click on the ‚Home‘ icon to return to the navigation table.
- We have classified the quality of fit into various categories. On the slide ‚Legend for Fit Description‘ you will find more information about the fit types and respective description. On individual slides we have also mentioned what type of fit exists for a particular power supply product and microcontroller.




Navigation Table



CLICK !

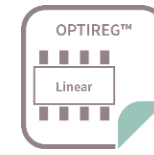
	Infineon AURIX™		Infineon Traveo™		Infineon	Texas Instruments	NXP	Renesas	ST Micro
OPTIREG™	TC2x	TC3x	I	II	PSoC®	Piccolo™/ Delfino™	S32K	RH850	SPC5x
					N/A				
								N/A	N/A
					N/A			N/A	N/A
									

Legend for Fit Description

Symbol	Fit type	Description
	Best Fit	Everything fits perfectly between the power supply product and respective microcontroller.
	Fit	The power supply fits well but may be more suitable for a microcontroller with higher power requirements; additional small components (capacitor, BJT,..) might be needed.
	Fit with additional components	Based on voltage requirement of the microcontroller an additional post LDO or a DC-DC may be required (μ C without internal VREG).
	(blank)	No fit

Mapping OPTIREG™ product portfolio with Infineon AURIX™ Microcontrollers

Mapping OPTIREG™ linear with AURIX™ TC2x Microcontroller



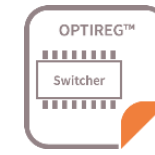
Infineon AURIX™ Family		Maximum Power Requirements (real power pattern)	OPTIREG™ linear					Post LDO / Core Voltage	
			Ultra Low Quiescent Current			Advanced Feature Set Reset and Watchdog			
			TLS810xxx	TLS820xxx	TLS835xxx	TLS820Fx	TLS850Fx		TLS20x Family
			100mA (5V/3.3V)	200mA (5V/3.3V)	350mA (5V/3.3V)	200mA (5V/3.3V)	500mA (5V/3.3V)		Use in combination with pre dc-dc
TC2x	TC21 series	88mA @ 3.3V							
	TC22 series	88mA @ 3.3V							
	TC23 series	109mA @ 3.3V							
	TC26 series	186mA @ 3.3V 123mA @ 5V						TLS203x (300mA)	
	TC26 series (ADAS variant)	203mA @ 3.3V 134mA @ 5V						TLS203x (300mA)	
	TC27 series	307mA @ 3.3V 203mA @ 5V						TLS203x (300mA)	
	TC29 series	485mA @ 3.3V 320mA @ 5V						TLS205x (500mA)	
	TC29 series (ADAS variant)	515mA @ 3.3V 340mA @ 5V							

Best Fit
 Fit
 Fit with additional components

Note: Based on **Maximum Power Dissipation** (at real power pattern) see datasheet parameter PD SR ($T_j = 150^\circ\text{C}$);
 Current Value = Power Dissipation / Voltage Level;

Further support and calculation tools under
www.infineon.com/OPTIREG™ and www.infineon.com/AURIX™

Mapping OPTIREG™ switcher with AURIX™ TC2x Microcontroller



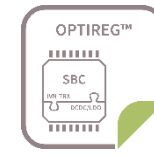
Infineon AURIX™ Family		Maximum Power Dissipation <small>(real power pattern)</small>	OPTIREG™ switcher for Pre-Regulation and Core Voltages					
			12V Pre-Regulator Low Power DC-DC 500mA			12V Pre-Regulator Medium Power Up-to 2.5A		Post LDO / Core Voltage
			TLF50241	TLF50251	TLF50281	TLS4120D0EP V33	TLS4125D0EP V50	TLS20x Family
			500mA (5V) Reset	500mA (5V) Enable & Reset	500mA (5V) Enable, Reset & Watchdog	2000mA (3.3V) Enable + Reset	2500mA (5V) Enable + Reset	Use in combination with pre dc-dc
TC2x	TC21 series	88mA @ 3.3V						
	TC22 series	88mA @ 3.3V						
	TC23 series	109mA @ 3.3V						
	TC26 series	186mA @ 3.3V 123mA @ 5V						
	TC26 series <i>(ADAS variant)</i>	203mA @ 3.3V 134mA @ 5V	✓	✓	✓			TLS203x (300mA)
	TC27 series	307mA @ 3.3V 203mA @ 5V	✓	✓	✓			TLS203x (300mA)
	TC29 series	485mA @ 3.3V 320mA @ 5V	✓	✓	✓	✓	✓	TLS203x (300mA)
	TC29 series <i>(ADAS variant)</i>	515mA @ 3.3V 340mA @ 5V	✓	✓	✓	✓	✓	TLS203x (300mA)

- Best Fit
- Fit
- Fit with additional components

Note:Based on **Maximum Power Dissipation** (at real power pattern) see datasheet parameter PD SR ($T_j = 150^{\circ}\text{C}$);
Current Value = Power Dissipation / Voltage Level;

Further support and calculation tools under
www.infineon.com/OPTIREG™ and www.infineon.com/AURIX™

Mapping OPTIREG™ SBC with AURIX™ TC2x Microcontroller



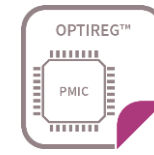
Infineon AURIX™ Family		Maximum Power Dissipation (real power pattern)	OPTIREG™ SBC				
			Lite LDO SBC	Lite DCDC SBC	MR+ SBC	DCDC SBC	MCP+ SBC
			TLE946x(-3)ES	TLE947x(-3)ES	TLE926x(-3)BQX	TLE927xQX	TLE9278(-3)BQX
			150mA (5V/3.3V)	500mA (5V/3.3V)	≥250mA (5V/3.3V)	750mA (5V/3.3V)	750mA (5V/3.3V)
TC2x	TC21 series	88mA @ 3.3V					
	TC22 series	88mA @ 3.3V					
	TC23 series	109mA @ 3.3V					
	TC26 series	186mA @ 3.3V 123mA @ 5V					
	TC26 series (ADAS variant)	203mA @ 3.3V 134mA @ 5V					
	TC27 series	307mA @ 3.3V 203mA @ 5V					
	TC29 series	485mA @ 3.3V 320mA @ 5V					
	TC29 series (ADAS variant)	515mA @ 3.3V 340mA @ 5V					

Best Fit
 Fit
 Fit with additional components

Note: Based on **Maximum Power Dissipation** (at real power pattern) see datasheet parameter PD SR ($T_j = 150^\circ\text{C}$);
 Current Value = Power Dissipation / Voltage Level;

Further support and calculation tools under
www.infineon.com/OPTIREG™ and www.infineon.com/AURIX™

Mapping OPTIREG™ PMIC with AURIX™ TC2x Microcontroller



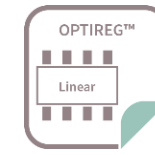
Infineon AURIX™ Family		Maximum Current Consumption (real power pattern)	OPTIREG™ PMIC			
			ISO 26262 compliant	ISO 26262 compliant		ISO 26262 compliant
			TLF35584/5Q*	TLF35584/5Q* w/ TLF11251	TLF30682QV	TLE9243QK
TC2x	TC21 series	88mA @ 3.3V				
	TC22 series	88mA @ 3.3V				
	TC23 series	109mA @ 3.3V	✓			
	TC26 series	186mA @ 3.3V 123mA @ 5V	✓			
	TC26 series (ADAS variant)	203mA @ 3.3V 134mA @ 5V	✓		✓	
	TC27 series	307mA @ 3.3V 203mA @ 5V	🎯		✓	✓
	TC29 series	485mA @ 3.3V 320mA @ 5V	🎯		✓	✓
	TC29 series (ADAS variant)	515mA @ 3.3V 340mA @ 5V	🎯		✓	✓

Best Fit
 Fit
 Fit with additional components

Note: Based on **Maximum Power Dissipation** (at real power pattern) see datasheet parameter PD SR ($T_j = 150^\circ\text{C}$);
 Current Value = Power Dissipation / Voltage Level;

Further support and calculation tools under
www.infineon.com/OPTIREG™ and www.infineon.com/AURIX™

Mapping OPTIREG™ linear with AURIX™ TC3x Microcontroller



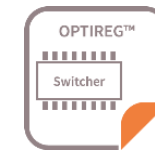
Infineon AURIX™ Family		Maximum Power Requirements <small>(real power pattern)</small>	OPTIREG™ linear					Post LDO / Core Voltage Use in combination with pre dc-dc
			Ultra Low Quiescent Current			Advanced Feature Set Reset and Watchdog		
			TLS810xxx	TLS820xxx	TLS835xxx	TLS820Fx	TLS850Fx	
			100mA (5V/3.3V)	200mA (5V/3.3V)	350mA (5V/3.3V)	200mA (5V/3.3V)	500mA (5V/3.3V)	
2nd Gen	TC33 series	200mA @ 3.3V 132mA @ 5V		✓	✓	✓	✓	TLS202x (150mA)
	TC33 series (ADAS variant)	381mA @ 3.3V 252mA @ 5V			✓		✓	TLS203x (300mA)
	TC35 series	576mA @ 3.3V 380mA @ 5V						
	TC36 series	333mA @ 3.3V 240mA @ 5V			✓		✓	TLS203x (300mA)
	TC37 series	370mA @ 3.3V 244mA @ 5V					✓	TLS205x (500mA)
	TC38 series	515mA @ 3.3V 340mA @ 5V						
	TC39 series	758mA @ 3.3V 500mA @ 5V						
	TC39 series (ADAS variant)	679 mA @ 3.3V (T _J = 125°C) 448 mA @ 5V (T _J = 125°C)						

- Best Fit
- Fit
- Fit with additional components

Note: Based on **Maximum Power Dissipation** (at real power pattern) see datasheet parameter PD SR (T_J = 150°C);
Current Value = Power Dissipation / Voltage Level;

Further support and calculation tools under www.infineon.com/OPTIREG™ and www.infineon.com/AURIX™

Mapping OPTIREG™ switcher with AURIX™ TC3x Microcontroller



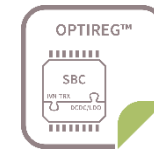
Infineon AURIX™ Family		Maximum Power Dissipation <small>(real power pattern)</small>	OPTIREG™ switcher for Pre-Regulation and Core Voltages					
			12V Pre-Regulator Low Power DC-DC 500mA			12V Pre-Regulator Medium Power Up-to 2.5A		Post LDO / Core Voltage
			TLF50241	TLF50251	TLF50281	TLS4120D0EP V33	TLS4125D0EP V50	TLS20x Family
			500mA (5V)	500mA (5V)	500mA (5V)	2000mA (3.3V)	2500mA (5V)	Use in combination with pre dc-dc
			Reset	Enable & Reset	Enable, Reset & Watchdog	Enable + Reset	Enable + Reset	
TC3x	TC33 series	200mA @ 3.3V 132mA @ 5V	✓	✓				TLS203x (300mA)
	TC33 series (ADAS variant)	381mA @ 3.3V 252mA @ 5V	✓	✓	✓			TLS203x (300mA)
	TC35 series	576mA @ 3.3V 380mA @ 5V	✓	✓	✓			TLS205x (500mA)
	TC36 series	333mA @ 3.3V 240mA @ 5V	✓	✓	✓			TLS205x (500mA)
	TC37 series	370mA @ 3.3V 244mA @ 5V	✓	✓	✓	✓	✓	TLS203x (300mA)
	TC38 series	515mA @ 3.3V 340mA @ 5V	✓	✓	✓	✓	✓	TLS203x (300mA)
	TC39 series	758mA @ 3.3V 500mA @ 5V				✓	✓	TLS205x (500mA)
	TC39 series (ADAS variant)	679 mA @ 3.3V (T _J = 125°C) 448 mA @ 5V (T _J = 125°C)				✓	✓	TLS205x (500mA)

- Best Fit
- Fit
- Fit with additional components

Note: Based on **Maximum Power Dissipation** (at real power pattern) see datasheet parameter PD SR (T_J = 150°C);
Current Value = Power Dissipation / Voltage Level;

Further support and calculation tools under www.infineon.com/OPTIREG™ and www.infineon.com/AURIX™

Mapping OPTIREG™ SBC with AURIX™ TC3x Microcontroller



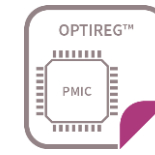
Infineon AURIX™ Family		Maximum Power Dissipation (real power pattern)	OPTIREG™ SBC				
			Lite LDO SBC	Lite DCDC SBC	MR+ SBC	DCDC SBC	MCP+ SBC
			TLE946x(-3)ES	TLE947x(-3)ES	TLE926x(-3)BQX	TLE927xQX	TLE9278(-3)BQX
			150mA (5V/3.3V)	500mA (5V/3.3V)	≥250mA (5V/3.3V)	750mA (5V/3.3V)	750mA (5V/3.3V)
TC3x	TC33 series	200mA @ 3.3V 132mA @ 5V	✔	✔	🎯	✔	✔
	TC33 series (ADAS variant)	381mA @ 3.3V 252mA @ 5V		✔	🎯	✔	✔
	TC35 series	576mA @ 3.3V 380mA @ 5V		✔		✔	✔
	TC36 series	333mA @ 3.3V 240mA @ 5V		✔		✔	✔
	TC37 series	370mA @ 3.3V 244mA @ 5V		✔		✔	✔
	TC38 series	515mA @ 3.3V 340mA @ 5V		✔		✔	✔
	TC39 series	758mA @ 3.3V 500mA @ 5V				✔	
	TC39 series (ADAS variant)	679 mA @ 3.3V (T _J = 125°C) 448 mA @ 5V (T _J = 125°C)					

Best Fit
 Fit
 Fit with additional components

Note: Based on **Maximum Power Dissipation** (at real power pattern) see datasheet parameter PD SR (T_J = 150°C);
 Current Value = Power Dissipation / Voltage Level;

Further support and calculation tools under
www.infineon.com/OPTIREG™ and www.infineon.com/AURIX™

Mapping OPTIREG™ PMIC with AURIX™ TC3x Microcontroller



Infineon AURIX™ Family		Maximum Current Consumption (real power pattern)	OPTIREG™ PMIC			
			ISO 26262 compliant	ISO 26262 compliant		ISO 26262 compliant
			TLF35584/5Q*	TLF35584/5Q* w/ TLF11251	TLF30682QV	TLE9243QK
TC3x	TC33 series	200mA @ 3.3V 132mA @ 5V	✔		✔	
	TC33 series (ADAS variant)	381mA @ 3.3V 252mA @ 5V	🎯		🎯	✔
	TC35 series	576mA @ 3.3V 380mA @ 5V	🎯		✔	✔
	TC36 series	333mA @ 3.3V 240mA @ 5V	🎯	✔	🎯	✔
	TC37 series	370mA @ 3.3V 244mA @ 5V	🎯	✔	🎯	✔
	TC38 series	515mA @ 3.3V 340mA @ 5V	🎯	🎯	✔	✔
	TC39 series	758mA @ 3.3V 500mA @ 5V	✔	🎯	✔	✔
	TC39 series (ADAS variant)	679 mA @ 3.3V (T _J = 125°C) 448 mA @ 5V (T _J = 125°C)	✔	🎯	✔	✔

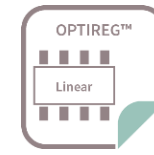


Note: Based on **Maximum Power Dissipation** (at real power pattern) see datasheet parameter PD SR (T_J = 150°C);
Current Value = Power Dissipation / Voltage Level;

Further support and calculation tools under
www.infineon.com/OPTIREG™ and www.infineon.com/AURIX™

Mapping OPTIREG™ product portfolio with Infineon Traveo™ Microcontrollers

Mapping OPTIREG™ linear with Traveo™ Microcontroller



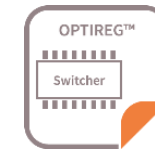
Traveo™ Family		Maximum Power Supply Current	OPTIREG™ linear					Post LDO / Core Voltage	
			Ultra Low Quiescent Current			Advanced Feature Set Reset and Watchdog			
			TLS810xxx	TLS820xxx	TLS835xxx	TLS820Fx	TLS850Fx		TLS20x Family
			100mA (5V/3.3V)	200mA (5V/3.3V)	350mA (5V/3.3V)	200mA (5V/3.3V)	500mA (5V/3.3V)		Use in combination with pre dc-dc
1st Gen	S6J311A/9 series	5V / 200mA (T _A = -40°C to +125°C)							
	S6J311E/D series	5V / 343mA (T _A = -40°C to +105°C)							
	S6J3120 series	5V / 255mA (T _A = -40°C to +105°C)							
	S6J3360 series	5V / 174mA (T _A = -40°C to +105°C)							
	S6J3370 series	5V / 158mA (T _A = -40°C to +105°C)							
	S6J3400 series	5V / 150mA (T _A = -40°C to +125°C)							
	S6J3510 series	5V / 158mA (T _A = -40°C to +125°C)							

Best Fit
 Fit
 Fit with additional components

Note: Based on **Power Supply Current Flash max.**, see datasheet parameter I_{CC5}

Further support and calculation tools under www.infineon.com/OPTIREG™

Mapping OPTIREG™ switcher with Traveo™ Microcontroller



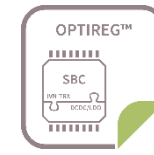
Traveo™ Family		Maximum Power Supply Current	OPTIREG™ switcher for Pre-Regulation and Core Voltages				
			12V Pre-Regulator Low Power DC-DC 500mA			12V Pre-Regulator Medium Power Up-to 2.5A	
			TLF50241	TLF50251	TLF50281	TLS4120D0EP V33	TLS4125D0EP V50
			500mA (5V)	500mA (5V)	500mA (5V)	2000mA (3.3V)	2500mA (5V)
			Reset	Enable & Reset	Enable, Reset & Watchdog	Enable + Reset	Enable + Reset
1st Gen	S6J311A/9 series	5V / 200mA (T _A = -40°C to +125°C)					
	S6J311E/D series	5V / 343mA (T _A = -40°C to +105°C)					
	S6J3120 series	5V / 255mA (T _A = -40°C to +105°C)					
	S6J3360 series	5V / 174mA (T _A = -40°C to +105°C)					
	S6J3370 series	5V / 158mA (T _A = -40°C to +105°C)					
	S6J3400 series	5V / 150mA (T _A = -40°C to +125°C)					
	S6J3510 series	5V / 158mA (T _A = -40°C to +125°C)					

- Best Fit
- Fit
- Fit with additional components

Note: Based on **Power Supply Current Flash max.**, see datasheet parameter I_{CC5}

Further support and calculation tools under www.infineon.com/OPTIREG™

Mapping OPTIREG™ SBC with Traveo™ Microcontroller



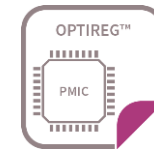
Traveo™ Family		Maximum Power Supply Current	OPTIREG™ SBC				
			Lite LDO SBC	Lite DCDC SBC	MR+ SBC	DCDC SBC	MCP+ SBC
			TLE946x(-3)ES	TLE947x(-3)ES	TLE926x(-3)BQX	TLE927xQX	TLE9278(-3)BQX
			150mA (5V/3.3V)	500mA (5V/3.3V)	≥250mA (5V/3.3V)	750mA (5V/3.3V)	750mA (5V/3.3V)
1 st Gen	S6J311A/9 series	5V / 200mA (T _A = -40°C to +125°C)		🎯	🎯		
	S6J311E/D series	5V / 343mA (T _A = -40°C to +105°C)		🎯		✅	✅
	S6J3120 series	5V / 255mA (T _A = -40°C to +105°C)		🎯	🎯	✅	✅
	S6J3360 series	5V / 174mA (T _A = -40°C to +105°C)		✅	🎯		
	S6J3370 series	5V / 158mA (T _A = -40°C to +105°C)	🎯	✅	🎯		
	S6J3400 series	5V / 150mA (T _A = -40°C to +125°C)	🎯	✅	🎯		
	S6J3510 series	5V / 158mA (T _A = -40°C to +125°C)	🎯	✅	🎯		

Best Fit
 Fit
 Fit with additional components

Note: Based on **Power Supply Current Flash max.**, see datasheet parameter I_{CC5}

Further support and calculation tools under www.infineon.com/OPTIREG™

Mapping OPTIREG™ PMIC with Traveo™ Microcontroller



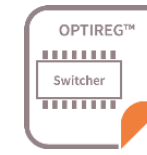
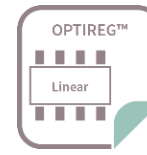
Traveo™ Family		Maximum Current Consumption (real power pattern)	OPTIREG™ PMIC			
			ISO 26262 compliant	ISO 26262 compliant		ISO 26262 compliant
			TLF35584QV/QK/ QVH	TLF35585QV/QU	TLF30682QV	TLE9243QK
1st Gen	S6J311A/9 series	5V / 200mA (T _A = -40°C to +125°C)				
	S6J311E/D series	5V / 343mA (T _A = -40°C to +105°C)	🎯	🎯		🎯
	S6J3120 series	5V / 255mA (T _A = -40°C to +105°C)	✅	✅	✅	✅
	S6J3360 series	5V / 174mA (T _A = -40°C to +105°C)	✅	✅	✅	✅
	S6J3370 series	5V / 158mA (T _A = -40°C to +105°C)	✅	✅	✅	✅
	S6J3400 series	5V / 150mA (T _A = -40°C to +125°C)	✅	✅	✅	✅
	S6J3510 series	5V / 158mA (T _A = -40°C to +125°C)	✅	✅	✅	✅

Best Fit
 Fit
 Fit with additional components

Note: Based on **Power Supply Current Flash max.**, see datasheet parameter I_{CC5}

Further support and calculation tools under www.infineon.com/OPTIREG™

Mapping OPTIREG™ Linear/Switcher with Traveo™ II Microcontroller



TRAVEO™ T2G Family		Core #	Current consumption Max. as per datasheet Max. clock speed All peripherals enabled No I/O toggling T _A = 105°C	Current consumption Scenario with lower performance at T _A = 85°C Max. as per estimation sheet Note: Flash writing not considered	I _{rush} C _{S1} *	External core supply and supply concept	OPTIREG™ Linear				OPTIREG™ Switcher		OPTIREG™		
							Ultra Low Quiescent Current		Advanced Feature Set Reset and Watchdog		12V Pre-Regulator Medium Power with enable + reset		Core Voltage		
							TLS820xxx	TLS835xxx	TLS820Fx	TLS850Fx	TLS4120D0x	TLS4125D0x			
							200mA (5V/3.3V)	350mA (5V/3.3V)	200mA (5V/3.3V)	500mA (5V/3.3V)	2000mA (3.3V)	2500mA (5V)	1.15V		
Body entry	T2G-BE-512K CYT2B6	Single	I _{DDD} = 85mA @3.3V / 5V	I _{DDD} = 45mA I _{IO} = 4mA Door ECU	375mA 9.4µF	No ①	✓	🎯	✓	🎯	✓	✓			
	T2G-BE-1M CYT2B7		I _{DDD} = 102mA @3.3V / 5V				✓	🎯	✓	🎯	✓	✓			
	T2G-BE-2M CYT2B9		I _{DDD} = 110mA @3.3V / 5V				✓	🎯	✓	🎯	✓	✓			
	T2G-BE-4M CYT2BL		I _{DDD} = 127mA @ 3.3V / 5V				✓	🎯	✓	🎯	✓	✓			
Cluster entry	T2G-CE-4M CYT2CL		I _{DDD} = 140mA @ 3.3V / 5V	I _{DDD} = 52mA I _{IO} = 4mA Cluster entry			✓	🎯	✓	🎯	✓	✓			
Body high	T2G-BH-4M CYT3BB	Dual	I _{CCD} = 240mA @ 1.15V	I _{CCD} = 110mA I _{DD} = 12mA I _{IO} = 2mA Cluster ECU	850mA 20µF	Yes ① ②③				✓	✓	✓	Post LDO TLS208 800mA		
	T2G-BH-4M CYT4BB		I _{CCD} = 287mA @ 1.15V							✓	✓	✓			
	T2G-BH-8M CYT4BF		I _{CCD} = 543mA @ 1.15V				I _{CCD} = 320mA		Yes ②③			✓	✓	✓	Post LDO TLS208 800mA
	T2G-BH-16M CYT6BJ		Quad				I _{CCD} = 800mA @ 1.15V			Yes ③			✓	✓	✓



①②③ Supply concept like defined in further slides

Note: * In-rush current through internal regulator to charge capacitor C_{S1} on core supply rail initially. Value for C_{S1} is a typical value. May differ due to application needs

Further support and calculation tools under www.infineon.com/OPTIREG™

Mapping OPTIREG™ SBC with Traveo™ II Microcontroller



TRAVEO™ T2G Family		Core #	Current consumption Max. as per datasheet Max. clock speed All peripherals enabled No I/O toggling T _A = 105°C	Current consumption Scenario with lower performance at T _A = 85°C Max. as per estimation sheet Note: Flash writing not considered	I _{rush} C _{S1} *	External core supply and supply concept	System Basis Chip (SBC)					OPTIREG™
							Lite LDO SBC	Lite DCDC SBC	MR+ SBC	DCDC SBC	MCP+ SBC	Core supply
							TLE9461(-3)ES	TLE9471(-3)ES	TLE926x(-3) BQX	TLE927xQX	TLE9278(-3) BQX	
			Max. as per datasheet Max. clock speed All peripherals enabled No I/O toggling T _A = 105°C	Scenario with lower performance at T _A = 85°C Max. as per estimation sheet Note: Flash writing not considered	I _{rush} C _{S1} *	External core supply and supply concept	150mA (5V/3.3V)	500mA (5V/3.3V)	≥250mA (5V/3.3V)	750mA (5V/3.3V)	750mA (5V/3.3V)	1.15V
Body entry	T2G-BE-512K CYT2B6	Single	I _{DD} = 85mA @3.3V / 5V	I _{DD} = 45mA I _{IO} = 4mA Door ECU	375mA 9.4μF	No ①						
	T2G-BE-1M CYT2B7		I _{DD} = 102mA @3.3V / 5V									
	T2G-BE-2M CYT2B9		I _{DD} = 110mA @3.3V / 5V									
	T2G-BE-4M CYT2BL		I _{DD} = 127mA @ 3.3V / 5V									
Cluster entry	T2G-CE-4M CYT2CL	Single	I _{DD} = 140mA @ 3.3V / 5V	I _{DD} = 52mA I _{IO} = 4mA Cluster entry								
Body high	T2G-BH-4M CYT3BB	Dual	I _{CCD} = 240mA @ 1.15V	I _{CCD} = 110mA I _{DD} = 12mA I _{IO} = 2mA Cluster ECU	850mA 20μF	Yes ① ② ③						
	T2G-BH-4M CYT4BB		I _{CCD} = 287mA @ 1.15V									
	T2G-BH-8M CYT4BF		I _{CCD} = 543mA @ 1.15V				I _{CCD} = 320mA					
	T2G-BH-16M CYT6BJ	Quad	I _{CCD} = 800mA @ 1.15V	Tbd		Yes ③						Post LDO TLS208 800mA

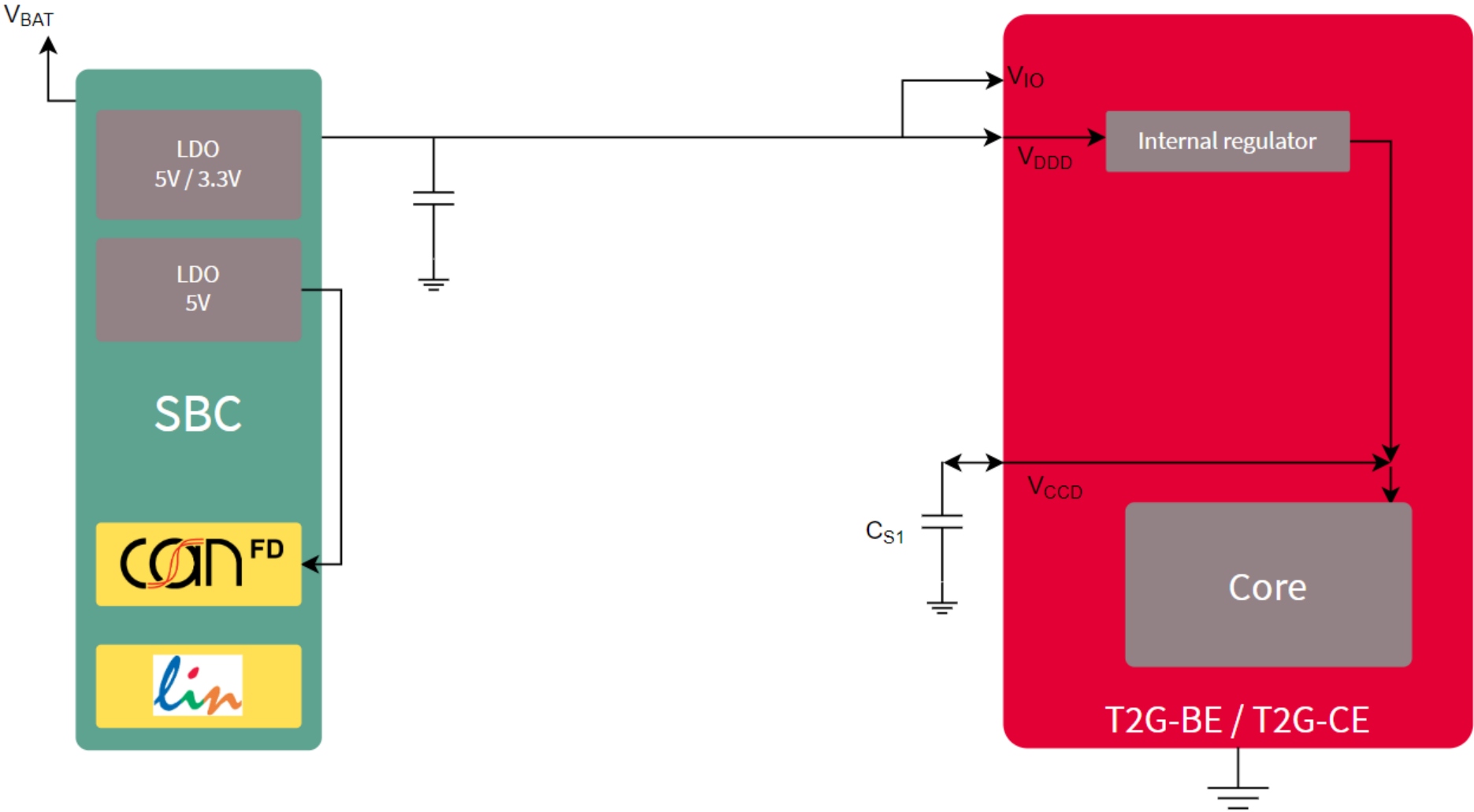


①②③ Supply concept like defined in further slides

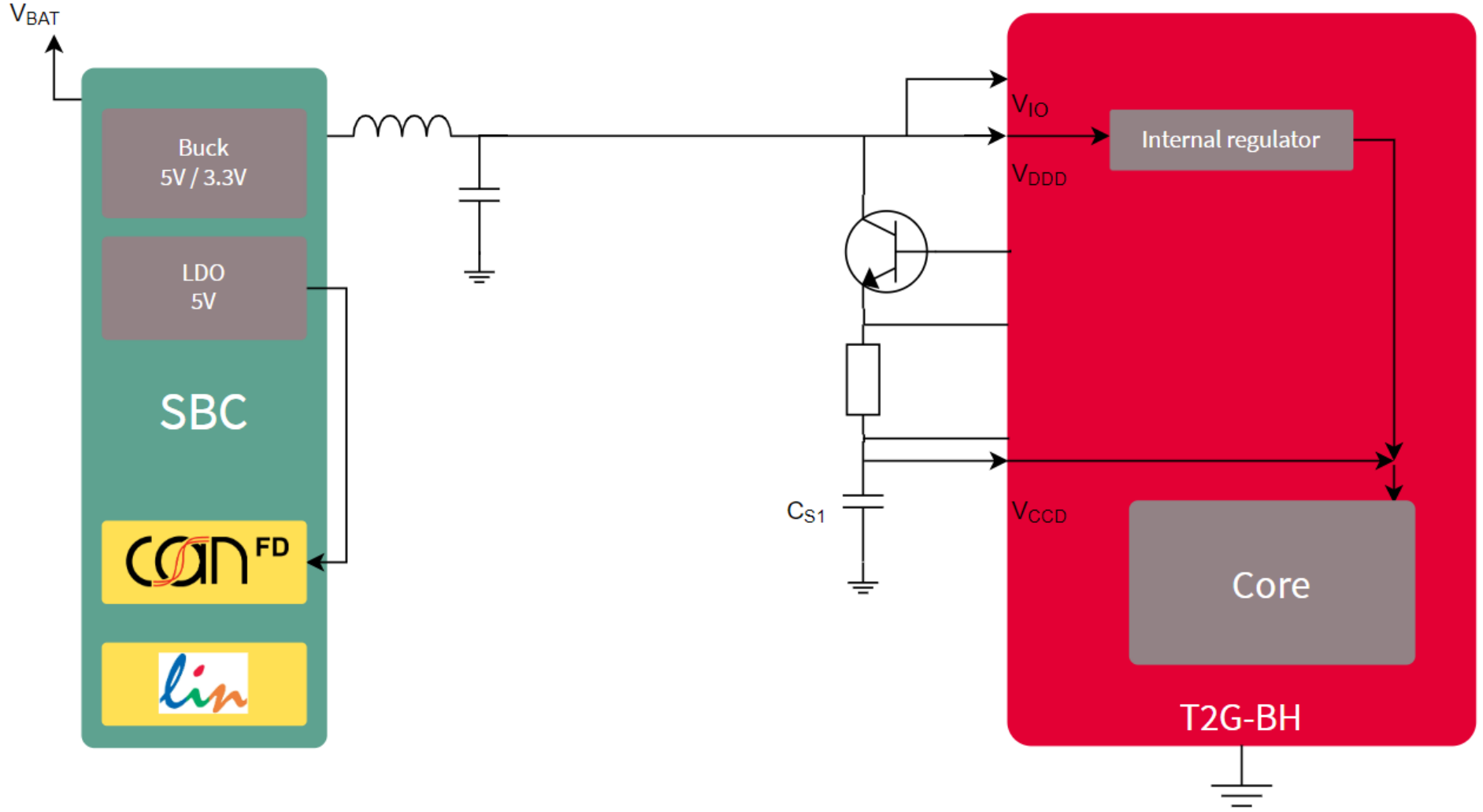
Note: * In-rush current through internal regulator to charge capacitor C_{S1} on core supply rail initially. Value for C_{S1} is a typical value. May differ due to application needs

Further support and calculation tools under www.infineon.com/OPTIREG™

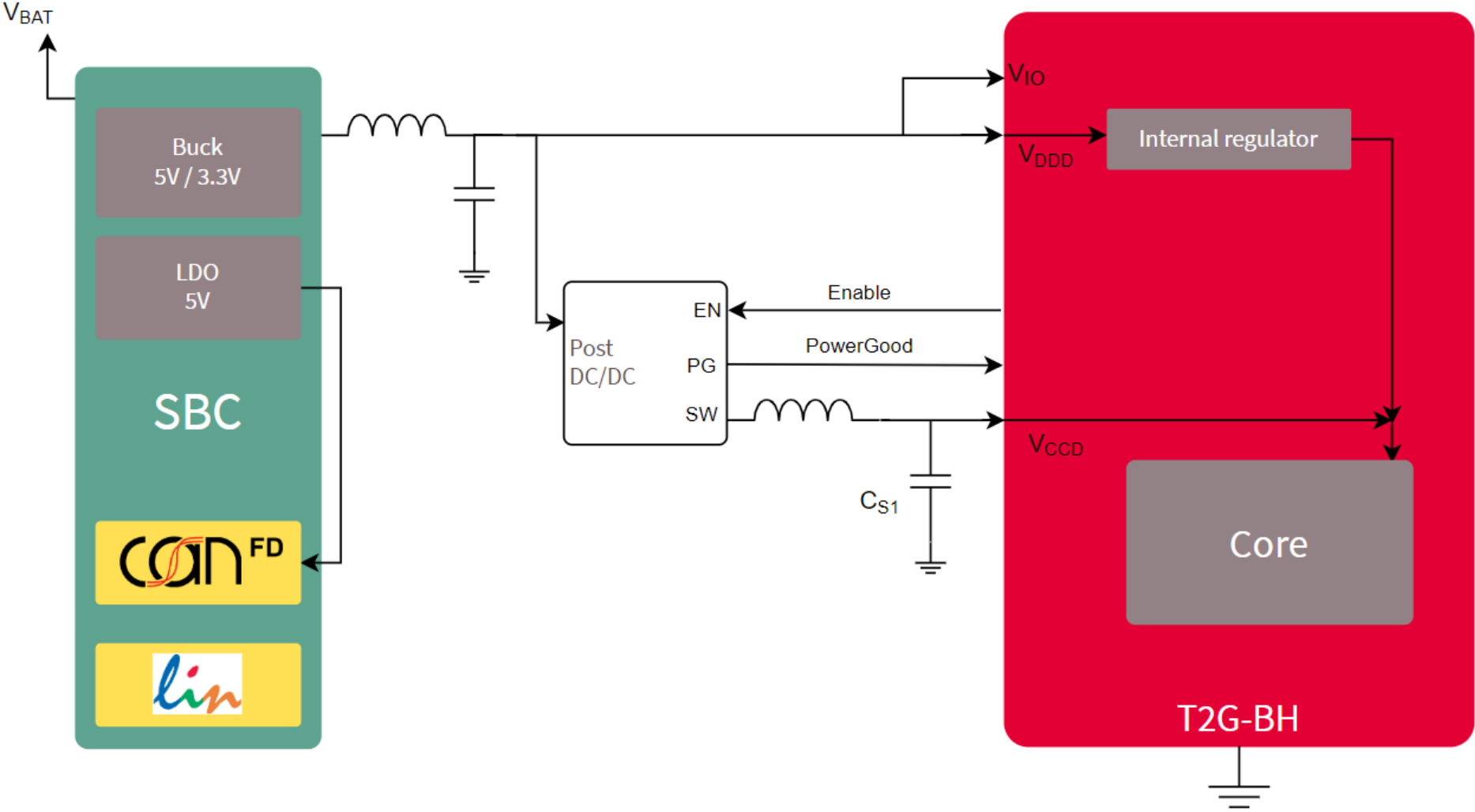
①: Supply concept example with internal core supply



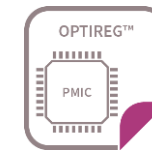
②: Supply concept example with external pass transistor



③: Supply concept example with external core supply



Mapping OPTIREG™ PMIC with Traveo™ II Microcontroller



Traveo™ II Family	Maximum Current Consumption (real power pattern)	Need of external core supply	OPTIREG™ PMIC				OPTIREG™ linear & switcher	
			ISO 26262 compliant	ISO 26262 compliant		ISO 26262 compliant	Core Voltage	
			TLF35584QV/QK/QVH	TLF35585QV/QU	TLF30682QV	TLE9243QK	1.15V	
2 nd Gen.	TVII-B-E-512K CYT2B6 TVII-B-E-1M CYT2B7	IDDD = 102mA @ 3.3V / 5V IIO = 2 x 15mA @ 3.3V / 5V	No					
	TVII-B-E-2M CYT2B9 TVII-B-E-4M CYT2BL	IDDD = 110mA @ 3.3V / 5V IIO = 2 x 15mA @ 3.3V / 5V	No					
	TVII-B-H-4M CYT3BB/4BB	IDDD= 249mA @ 3.3V / 5V IIO = 2 x 15mA @ 3.3V / 5V	No					
		ICCD = 240mA @ 1.15V IDDD= 9mA @ 3.3V / 5V IIO = 2 x 15mA @ 3.3V / 5V IIOHS = 1 x 20mA @ 3.3V	Yes					Post LDO TLS208 800mA
	TVII-B-H-8M CYT4BF	ICCD = 431mA @ 1.15V IDDD = 9.3mA @ 3.3V / 5V IIO = 2 x 15 mA @ 3.3V / 5V IIOHS = 2 x 20mA @ 3.3V	Yes					Post LDO TLS208 800mA
TVII-C-2D-6M CYT4D	ICCD = 1300mA @ 1.15V (with VIDEOSS) IIO = 2 x 15mA @ 3.3V / 5V IIOHS = 2 x 20mA @ 3.3V	Yes					DCDC TLE8366EV 1A	

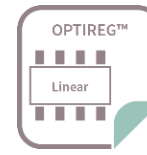
- Best Fit
- Fit
- Fit with additional components

Note: * In-rush current through internal regulator to charge capacitor C_{S1} on core supply rail initially. Value for C_{S1} is a typical value. May differ due to application needs

Further support and calculation tools under www.infineon.com/OPTIREG™

Mapping OPTIREG™ linear & SBC with Infineon PSoC® 4 Microcontrollers

Mapping OPTIREG™ linear & SBC with PSoC® 4 Microcontrollers



Cypress PSoC® 4 Family	Typical current consumption	Count of CAN controller	Internal LowVoltage-Detection *	LIN LDO	OPTIREG™ linear						OPTIREG™ SBC		
					Ultra Low Quiescent Current					Advanced Feature Set Reset and Watchdog		Lite LDO SBC	MR+ SBC
				TLE8457x	TLS805xxx	TLS810xxx	TLS820xxx	TLS835xxx	TLS820Fx	TLS850Fx	TLE9461(-3)ES	TLE926x(-3)BQX	
				70mA (5V/3.3V) 1 LIN	50mA (5V/3.3V)	100mA (5V/3.3V)	200mA (5V/3.3V)	350mA (5V/3.3V)	200mA (5V/3.3V)	500mA (5V/3.3V)	150mA (5V/3.3V) 1 CAN	≥250mA (5V/3.3V) 1 CAN 0 - 2 LIN	
PSoC 4000(S)	1.8 V < V _{CC} < 5.5 V I _{CC} = ~30 mA	0	no										
PSoC 4100 / PSoC 4100S			Yes / no										
PSoC 4100S Plus		1 CAN	no										
PSoC 4 M Series 4100M		2 CAN	yes										
PSoC 4100S Max		1 CAN-FD	no										

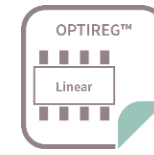


Note: At PSoC® devices without internal LowVoltageDetection the application may require a supply variant with reset output

Further support and calculation tools under www.infineon.com/OPTIREG™

Mapping OPTIREG™ product portfolio with Texas Instruments Piccolo™/ Delfino™ Microcontrollers

Mapping OPTIREG™ linear with TI Piccolo™/Delfino™ Microcontroller



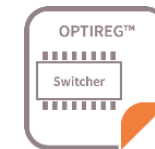
Texas Instrument C2000™ Family		Power Consumption	OPTIREG™ linear				
			Ultra Low Quiescent Current			Advanced Feature Set Reset and Watchdog	
			TLS810xxx	TLS820xxx	TLS835xxx	TLS820Fx	TLS850Fx
			100mA (5V/3.3V)	200mA (5V/3.3V)	350mA (5V/3.3V)	200mA (5V/3.3V)	500mA (5V/3.3V)
Piccolo™ generation	TMS320F28004x series	143mA@ 3.3V		🎯	🎯	🎯	✅
	TMS320F2802x series	98mA@ 3.3V	🎯	🎯	✅	🎯	✅
	TMS320F2802x series	153mA@ 3.3V		🎯	🎯	🎯	✅
	TMS320F2805x series	192mA@ 3.3V		🎯	🎯	🎯	✅
	TMS320F2806x series	307mA@ 3.3V			✅		🎯
	TMS320F2807x series	405mA@ 3.3V					🎯
Delfino™ generation*	TMS320F2833x series*	92mA @ 3.3V 350mA @ 1.8V	✅	✅		✅	✅
	TMS320F2834x series*	80mA @ 3.3V 45mA @ 1.8V 740mA @ 1.2V					
	TMS320F2837xD series*	90mA @ 3.3V 495mA @ 1.8V	✅	✅		✅	✅
	TMS320F2837xD series*	90mA @ 3.3V 400mA @ 1.2V	✅	✅		✅	✅

Best Fit
 Fit
 Fit with additional components

*Based on **Power Consumption Operational (flash) max.**, see datasheet parameter $I_{DDIO} + I_{DDA} (+I_{DD3VFL} + I_{DDA33})$ if VREG enabled ($T_J = -40^{\circ}\text{C}$ to 125°C), V_{IN} (3.3 V)

Further support and calculation tools under www.infineon.com/OPTIREG™

Mapping OPTIREG™ switcher with TI Piccolo™/Delfino™ Microcontroller



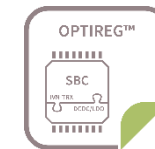
Texas Instrument C2000™ Family		Power Consumption	OPTIREG™ switcher for Pre-Regulation and Core Voltages			
			12V Pre-Regulator Low Power DC-DC 500mA		12V Pre-Regulator Medium Power Up-to 2.5A	
			TLF50251	TLF50281	TLS4120D0EP V33	TLS4125D0EP V50
			500mA (5V)	500mA (5V)	2000mA (3.3V)	2500mA (5V)
			Enable & Reset	Enable, Reset & Watchdog	Enable + Reset	Enable + Reset
Piccolo™ generation	TMS320F28004x series	143mA @ 3.3V				
	TMS320F2802x series	98mA @ 3.3V				
	TMS320F2802x series	153mA @ 3.3V				
	TMS320F2805x series	192mA @ 3.3V				
	TMS320F2806x series	307mA @ 3.3V				
	TMS320F2807x series	405mA @ 3.3V			✔	
Delfino™ generation*	TMS320F2833x series*	92mA @ 3.3V 350mA @ 1.8V			✔	
	TMS320F2834x series*	80mA @ 3.3V 45mA @ 1.8V 740mA @ 1.2V				
	TMS320F2837xD series*	90mA @ 3.3V 495mA @ 1.8V			✔	
	TMS320F2837xD series*	90mA @ 3.3V 400mA @ 1.2V			✔	



*Based on **Power Consumption Operational (flash) max.**, see datasheet parameter $I_{DDIO} + I_{DDA} (+I_{DD3VFL} + I_{DDA33})$ if VREG enabled ($T_J = -40^\circ\text{C}$ to 125°C), $V_{IN} (3.3\text{ V})$

Further support and calculation tools under www.infineon.com/OPTIREG™

Mapping OPTIREG™ SBC with TI Piccolo™/Delfino™ Microcontroller



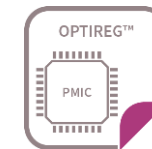
Texas Instrument C2000™ Family		Power Consumption	OPTIREG™ SBC				
			Lite LDO SBC	Lite DCDC SBC	MR+ SBC	DCDC SBC	MCP+ SBC
			TLE946x(-3)ES	TLE947x(-3)ES	TLE926x(-3)BQX	TLE927xQX	TLE9278(-3)BQX
			150mA (5V/3.3V)	500mA (5V/3.3V)	≥250mA (5V/3.3V)	750mA (5V/3.3V)	750mA (5V/3.3V)
Piccolo™ generation	TMS320F28004x series	143mA @ 3.3V	🎯	🎯	🎯		
	TMS320F2802x series	98mA @ 3.3V	🎯	✅	✅		
	TMS320F2802x series	153mA @ 3.3V	✅	🎯	🎯		
	TMS320F2805x series	192mA @ 3.3V		🎯	🎯		
	TMS320F2806x series	307mA @ 3.3V		🎯		✅	✅
	TMS320F2807x series	405mA @ 3.3V		🎯		✅	✅
Delfino™ generation*	TMS320F2833x series*	92mA @ 3.3V 350mA @ 1.8V	✅	✅	✅	✅	✅
	TMS320F2834x series*	80mA @ 3.3V 45mA @ 1.8V 740mA @ 1.2V					
	TMS320F2837xD series*	90mA @ 3.3V 495mA @ 1.8V	✅	✅	✅	✅	✅
	TMS320F2837xD series*	90mA @ 3.3V 400mA @ 1.2V	✅	✅	✅	✅	✅



*Based on **Power Consumption Operational (flash) max.**, see datasheet parameter $I_{DDIO} + I_{DDA} (+I_{DD3VFL} + I_{DDA33})$ if VREG enabled ($T_J = -40^{\circ}\text{C}$ to 125°C), V_{IN} (3.3 V)

Further support and calculation tools under www.infineon.com/OPTIREG™

Mapping OPTIREG™ PMIC with TI Piccolo™/Delfino™ Microcontroller



Texas Instrument C2000™ Family		Maximum Current Consumption	OPTIREG™ PMIC			
			ISO 26262 compliant	ISO 26262 compliant		ISO 26262 compliant
			TLF35584QV/QK/QVH	TLF35585QV/QU	TLF30682QV	TLE9243QK
Piccolo™ generation	TMS320F28004x series	143mA @ 3.3V				
	TMS320F2802x series	98mA @ 3.3V				
	TMS320F2802x series	153mA @ 3.3V				
	TMS320F2805x series	192mA @ 3.3V				
	TMS320F2806x series	307mA @ 3.3V	🎯	🎯	✅	
	TMS320F2807x series	405mA @ 3.3V	🎯	🎯	✅	✅
Delfino™ generation *	TMS320F2833x series*	92mA @ 3.3V 350mA @ 1.8V	✅	✅	✅	✅
	TMS320F2834x series*	80mA @ 3.3V 45mA @ 1.8V 740mA @ 1.2V	✅	✅	✅	✅
	TMS320F2837xD series*	90mA @ 3.3V 495mA @ 1.8V	✅	✅	✅	✅
	TMS320F2837xD series*	90mA @ 3.3V 400mA @ 1.2V	✅	✅	✅	✅

*Device without internal VREG. Infineon's SBC can only be used to supply 3.3V ($I_{DDIO} + I_{DD3VFL} + I_{DDA33}$) from Vcc1 to as well as the 5V on Vcc2 to supply the CAN transceiver or off-board supply, e.g. for sensor. The core supply I_{DD} and I_{DDA18} needs to come from a separate source.

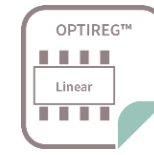
Best Fit
 Fit
 Fit with additional components

*Based on **Power Consumption Operational (flash) max.**, see datasheet parameter $I_{DDIO} + I_{DDA} (+I_{DD3VFL} + I_{DDA33})$ if VREG enabled ($T_J = -40^{\circ}\text{C}$ to 125°C), V_{IN} (3.3 V)

Further support and calculation tools under www.infineon.com/OPTIREG™

Mapping OPTIREG™ product portfolio with NXP S32K Microcontrollers

Mapping OPTIREG™ linear with NXP S32K Microcontroller



NXP S32K1xx Family		Maximum Power Consumption	OPTIREG™ linear					Post LDO / Core Voltage	
			Ultra Low Quiescent Current			Advanced Feature Set Reset and Watchdog			
			TLS810xxx	TLS820xxx	TLS835xxx	TLS820Fx	TLS850Fx		TLS20x Family
			100mA (5V/3.3V)	200mA (5V/3.3V)	350mA (5V/3.3V)	200mA (5V/3.3V)	500mA (5V/3.3V)		Use in combination with pre dc-dc
S32K	S32K116 ¹	24.1mA @ 5V	🎯						
	S32K118 ¹	25.9mA @ 5V	🎯						
	S32K142 ²	57.4mA @ 5V	🎯	✅		✅			
	S32K144 ²	61.3mA @ 5V	🎯	✅		✅			
	S32K146 ²	82.8mA @ 5V	🎯	🎯	✅	🎯			
	S32K148 ²	97.4mA @ 5V 119mA @ 3.3V			✅		✅	TLS203x (300mA)	

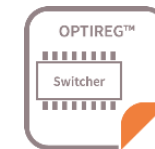
¹ Max. 48 MHz @ T_A = 125°C
² Max. 112 MHz @ T_A = 105°C

🎯 Best Fit ✅ Fit 🟡 Fit with additional components

Note: Based on **Power Supply Current Flash max.**, see datasheet parameter I_{CC5}

Further support and calculation tools under www.infineon.com/OPTIREG™

Mapping OPTIREG™ switcher with NXP S32K Microcontroller



NXP S32K1xx Family		Maximum Power Consumption	OPTIREG™ switcher for Pre-Regulation and Core Voltages		Post LDO / Core Voltage
			12V Pre-Regulator Low Power DC-DC 500mA		
			TLF50251	TLF50281	
			500mA (5V)	500mA (5V)	
			Enable & Reset	Enable, Reset & Watchdog	
S32K	S32K116 ¹	24.1mA @ 5V			
	S32K118 ¹	25.9mA @ 5V			
	S32K142 ²	57.4mA @ 5V			
	S32K144 ²	61.3mA @ 5V			
	S32K146 ²	82.8mA @ 5V			
	S32K148 ²	97.4mA @ 5V 119mA @ 3.3V	✔	✔	TLS203x (300mA)

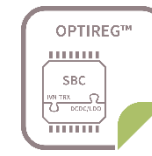
¹ Max. 48 MHz @ T_A = 125°C
² Max. 112 MHz @ T_A = 105°C

- Best Fit
- Fit
- Fit with additional components

Note: Based on **Power Supply Current Flash max.**, see datasheet parameter I_{CC5}

Further support and calculation tools under www.infineon.com/OPTIREG™

Mapping OPTIREG™ SBC with NXP S32K Microcontroller



NXP S32K1xx Family		Maximum Power Consumption	OPTIREG™ SBC				
			Lite LDO SBC	Lite DCDC SBC	MR+ SBC	DCDC SBC	MCP+ SBC
			TLE946x(-3)ES	TLE947x(-3)ES	TLE926x(-3)BQX	TLE927xQX	TLE9278(-3)BQX
			150mA (5V/3.3V)	500mA (5V/3.3V)	≥250mA (5V/3.3V)	750mA (5V/3.3V)	750mA (5V/3.3V)
S32K	S32K116 ¹	24.1mA @ 5V					
	S32K118 ¹	25.9mA @ 5V					
	S32K142 ²	57.4mA @ 5V					
	S32K144 ²	61.3mA @ 5V					
	S32K146 ²	82.8mA @ 5V					
	S32K148 ²	97.4mA @ 5V 119mA @ 3.3V					

¹ Max. 48 MHz @ T_A = 125°C

² Max. 112 MHz @ T_A = 105°C



Best Fit



Fit



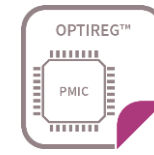
Fit with additional components

Note: Based on **Power Supply Current Flash max.**, see datasheet parameter I_{CC5}

Further support and calculation tools under www.infineon.com/OPTIREG™

Mapping OPTIREG™ PMICs & SBCs with Renesas RH850 Microcontrollers

Mapping OPTIREG™ PMIC with Renesas RH850 Microcontroller

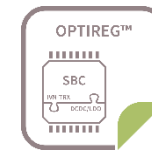


RH850 Family		Maximum Power dissipation	OPTIREG™ PMIC			
			ISO 26262 compliant	ISO 26262 compliant		ISO 26262 compliant
			TLF35584QV/QK/ QVH	TLF35585QV/QU	TLF30682QV	TLE9243QK
C Series	RH850/C1M-Ax	730mA @ 1.25V 112mA @ 3.3V/5V			🎯	✅
E Series	RH850/E1L	260mA @ 1.1V (NN) 53mA @ 3.3V/5V	✅	✅	✅	✅
	RH850/E2H	1300mA @ 1.1V 152mA @ 3.3V/5V				
	RH850/E2M	1500mA @ 1.1V 154mA @ 3.3V/5V				
	RH850/E2UH	1700mA @ 1.1V 156mA @ 3.3V/5V				
F Series	RH850/F1K	96mA @ 3.3V/5V				
	RH850/F1H-D8	350mA tot @ 3.3V/5V (REG1VCC 290mA @ 3.3V)	🎯	🎯		✅
	RH850/F1KM-S1	82mA @ 3.3V/5V				
	RH850/F1KM-S4	205mA @ 3.3V/5V	✅	✅		



Further support and calculation tools under www.infineon.com/OPTIREG™

Mapping OPTIREG™ SBC with Renesas RH850 Microcontroller



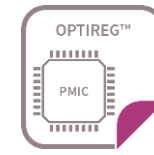
Renesas RH850 Family		Power Consumption	OPTIREG™ SBC				
			Lite LDO SBC	Lite DCDC SBC	MR+ SBC	DCDC SBC	MCP+ SBC
			TLE946x(-3)ES	TLE947x(-3)ES	TLE926x(-3)BQX	TLE927xQX	TLE9278(-3)BQX
			150mA (5V/3.3V)	500mA (5V/3.3V)	≥250mA (5V/3.3V)	750mA (5V/3.3V)	750mA (5V/3.3V)
C Series	RH850/C1M-Ax	730mA @ 1.25V 112mA @ 3.3V/5V				✓	✓
E Series	RH850/E1L	260mA @ 1.1V (NN) 53mA @ 3.3V/5V	✓	✓	✓	✓	✓
	RH850/E2H	1300mA @ 1.1V 152mA @ 3.3V/5V					
	RH850/E2M	1500mA @ 1.1V 154mA @ 3.3V/5V					
	RH850/E2UH	1700mA @ 1.1V 156mA @ 3.3V/5V					
F Series	RH850/F1K	96mA @ 3.3V/5V	🎯		✓		
	RH850/F1KH-D8	350mA tot @ 3.3V/5V (REG1VCC 290mA @ 3.3V)		🎯		✓	✓
	RH850/F1KM-S1	82mA @ 3.3V/5V	🎯		✓		
	RH850/F1KM-S4	205mA @ 3.3V/5V		🎯	🎯	✓	✓



Further support and calculation tools under www.infineon.com/OPTIREG™

Mapping OPTIREG™ PMICs & SBCs with ST SPC5x Microcontrollers

Mapping OPTIREG™ PMIC with ST SPC5x Microcontroller

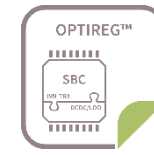


ST SPC5x Family	Maximum Power dissipation	OPTIREG™ PMIC			
		ISO 26262 compliant	ISO 26262 compliant		ISO 26262 compliant
		TLF35584QV/QK/ QVH	TLF35585QV/QU	TLF30682QV	TLE9243QK
SPC584C70E3	711mA @ 3.3V/5V			✓	✓
SPC584B60E1	390mA @ 3.3V/5V	🎯	🎯	✓	✓
SPC58NH92C3	1800mA @ 3.3V/5V			✓	
SPC560B64L7	386mA @ 3.3V/5V	🎯	🎯	✓	✓
SPC56EL70L5	460mA @ 3.3V	🎯	🎯	✓	✓
SPC564A80B4	546mA @ 5V	🎯	🎯	✓	🎯



Further support and calculation tools under www.infineon.com/OPTIREG™

Mapping OPTIREG™ SBC with ST SPC5x Microcontroller



ST SPC5x Family	Power Consumption	OPTIREG™ SBC				
		Lite LDO SBC	Lite DCDC SBC	MR+ SBC	DCDC SBC	MCP+ SBC
		TLE946x(-3)ES	TLE947x(-3)ES	TLE926x(-3)BQX	TLE927xQX	TLE9278(-3)BQX
		150mA (5V/3.3V)	500mA (5V/3.3V)	≥250mA (5V/3.3V)	750mA (5V/3.3V)	750mA (5V/3.3V)
SPC584C70E3	711mA @ 3.3V/5V				🎯	
SPC584B60E1	390mA @ 3.3V/5V		🎯		🎯	🎯
SPC58NH92C3	1800mA @ 3.3V/5V					
SPC560B64L7	386mA @ 3.3V/5V		🎯		🎯	🎯
SPC56EL70L5	460mA @ 3.3V		🎯		🎯	🎯
SPC564A80B4	546mA @ 5V				🎯	🎯



Further support and calculation tools under www.infineon.com/OPTIREG™

