

Mapping of OPTIREG[™] product portfolio with various microcontrollers

Infineon Automotive Division H2 2025

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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





C										
CLICK!	Infine	on AURI)	(TM	Infineon [·]	Traveo™	Infineon	Texas Instruments	NXP	Renesas	ST Micro
OPTIREG™	TC2x	TC3x	TC4x	- 1	II	PSoC®	Piccolo™/ Delfino™	S32K	RH850	SPC5x
OPTIREG™ PMIC	©	©	©	©	©	N/A	6	©	©	
OPTIREG™ Linear	©	©	N/A	6	©	©	6	©	N/A	N/A
OPTIREG™ Switcher	©	(3)	N/A	6	©	N/A	6	©	N/A	N/A
OPTIREG™ SBC MO TEX. SBC M	©	©	N/A	6	©	©	6	©	©	©



Legend for Fit Description

Symbol	Fit type	Description
Ø	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 componets (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 (e.g. µC without internal VREG).
	(blank)	No fit



Mapping OPTIREG™ product portfolio with Infineon AURIX™ Microcontrollers

Mapping OPTIREG™ linear with AURIX™ TC2x Microcontroller







					OPTIREG™	linear		
	nfineon AURIX™	Maximum Power Requirements (real power pattern)	Ultra	a Low Quiescent Curre	nt		Feature Set I Watchdog	Post LDO / Core Voltage
	Family		TLS810xxx	TLS820xxx	TLS835xxx	TLS820Fx	TLS850Fx	TLS20x Family
	Ž		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
	TC21 series	88mA @ 3.3V	Ø					
	TC22 series	88mA @ 3.3V	Ø			⊘		
	TC23 series	109mA @ 3.3V		©	Ø	©		
T00	TC26 series	186mA @ 3.3V 123mA @ 5V				\bigcirc	⊘	TLS203x (300mA)
TC2x	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						







Mapping OPTIREG™ switcher with AURIX™ TC2x Microcontroller







				OF	PTIREG™ switcher for Pre	Regulation and Core Vol	tages	
Infineon				12V Pre-Regu Low Power DC-D		12V Pre-Regu Medium Power Սր		Post LDO / Core Voltage
	AURIX™ Family	Maximum Power Dissipation (real power pattern)	TLF50241	TLF50251	TLF50281	TLS4120D0EP V33	TLS4125D0EP V50	TLS20x Family
			500mA (5V)	500mA (5V)	500mA (5V)	2000mA (3.3V)	2500mA (5V)	Use in combination
			Reset	Enable & Reset	Enable, Reset & Watchdog	Enable + Reset	Enable + Reset	with pre dc-dc
	TC21 series	88mA @ 3.3V						
	TC22 series	88mA @ 3.3V						
	TC23 series	109mA @ 3.3V						
TC2x	TC26 series	186mA @ 3.3V 123mA @ 5V						
102x	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						TLS203x (300mA)
	TC29 series (ADAS variant)	515mA @ 3.3V 340mA @ 5V				\bigcirc		TLS203x (300mA)





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™ TC2x Microcontroller







			OPTIREG™ SBC							
	nfineon \URIX™	Maximum Power Dissipation	Lite LDO SBC	Lite DCDC SBC	MR+ SBC	DCDC SBC	MCP+ SBC			
Family		(real power pattern)	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)			
	TC21 series	88mA @ 3.3V	Ø		©					
	TC22 series	88mA @ 3.3V	Ø		Ø					
	TC23 series	109mA @ 3.3V	Ø		©					
TC2x	TC26 series	186mA @ 3.3V 123mA @ 5V		Ø	Ø					
1028	TC26 series (ADAS variant)	203mA @ 3.3V 134mA @ 5V			Ø					
	TC27 series	307mA @ 3.3V 203mA @ 5V		⊘						
	TC29 series	485mA @ 3.3V 320mA @ 5V								
	TC29 series (ADAS variant)	515mA @ 3.3V 340mA @ 5V								







Mapping OPTIREG™ PMIC with AURIX™ TC2x Microcontroller







					OPTIRE	G™ PMIC	
Infineon AURIX™ Family		Maximum Current	ISO 26262 compliant	ISO 26262 compliant		ISO 26262 compliant	ISO 26262 compliant
		Consumption (real power pattern)	TLF35584/5Q*	TLF35584/5Q* w/ TLF11251	TLF30682QV	TLE9243QK	TLF4D985Q
			600mA (5V/3.3V)	600mA (5V/3.3V)	3.5A (3.3V), 2A (1.25V), 0.25A (5V)	800mA (5V)	600mA (5V/3.3V)
	TC21 series	88mA @ 3.3V					
	TC22 series	88mA @ 3.3V					
	TC23 series	109mA @ 3.3V					
TOOM	TC26 series	186mA @ 3.3V 123mA @ 5V					⊘
TC2x	TC26 series (ADAS variant)	203mA @ 3.3V 134mA @ 5V					
	TC27 series	307mA @ 3.3V 203mA @ 5V	Ø			\bigcirc	
	TC29 series	485mA @ 3.3V 320mA @ 5V	©				
	TC29 series (ADAS variant)	515mA @ 3.3V 340mA @ 5V	Ø			\bigcirc	⊘







Mapping OPTIREG™ linear with AURIX™ TC3x Microcontroller







					OPTIREG ^{TI}	M linear		
	Infineon AURIX™	Maximum Power	Ultra	Low Quiescent Curre	ent		Feature Set Watchdog	Post LDO / Core Voltage
Family		Requirements (real power pattern)	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
	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						
Ond	TC36 series	333mA @ 3.3V 240mA @ 5V						TLS203x (300mA)
2 nd Gen	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)						







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







				Ol	PTIREG™ switcher for Pre	-Regulation and Core Vol	tages	
	Infineon	Martinarya Davier Disaination		12V Pre-Regu Low Power DC-D		12V Pre-Regu Medium Power Սլ		Post LDO / Core Voltage
	AURIX™ Family	Maximum Power Dissipation (real power pattern)	TLF50241	TLF50251	TLF50281	TLS4120D0EP V33	TLS4125D0EP V50	TLS20x Family
			500mA (5V)	500mA (5V)	500mA (5V)	2000mA (3.3V)	2500mA (5V)	Use in combination
			Reset	Enable & Reset	Enable, Reset & Watchdog	Enable + Reset	Enable + Reset	with pre dc-dc
	TC33 series	200mA @ 3.3V 132mA @ 5V						TLS203x (300mA)
	TC33 series (ADAS variant)	381mA @ 3.3V 252mA @ 5V		Ø				TLS203x (300mA)
	TC35 series	576mA @ 3.3V 380mA @ 5V						TLS205x (500mA)
TC3x	TC36 series	333mA @ 3.3V 240mA @ 5V	⊘					TLS205x (500mA)
IC3X	TC37 series	370mA @ 3.3V 244mA @ 5V						TLS203x (300mA)
	TC38 series	515mA @ 3.3V 340mA @ 5V				\bigcirc		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)





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







				(OPTIREG™ SBC		
	nfineon \URIX™	Maximum Power Dissipation	Lite LDO SBC	Lite DCDC SBC	MR+ SBC	DCDC SBC	MCP+ SBC
	Family	(real power pattern)	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)
	TC33 series	200mA @ 3.3V 132mA @ 5V			Ø		
	TC33 series (ADAS variant)	381mA @ 3.3V 252mA @ 5V		~	Ø		
	TC35 series	576mA @ 3.3V 380mA @ 5V					
TOO	TC36 series	333mA @ 3.3V 240mA @ 5V				\bigcirc	
TC3x	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)					







Mapping OPTIREG™ PMIC with AURIX™ TC3x Microcontroller







					OPTIREG ¹	™ PMIC	
	Infineon	Maximum Current	ISO 26262 compliant	ISO 26262 compliant		ISO 26262 compliant	ISO 26262 compliant
	AURIX™ Family	Consumption (real power pattern)	TLF35584/5Q*	TLF35584/5Q* w/ TLF11251	TLF30682QV	TLE9243QK	TLF4D985QK
		(real power pattern)	600mA (5V/3.3V)	600mA (5V/3.3V)	3.5A (3.3V), 2A (1.25V), 0.25A (5V)	800mA (5V)	600mA (5V/3.3V)
	TC33 series	200mA @ 3.3V 132mA @ 5V					
	TC33 series (ADAS variant)	381mA @ 3.3V 252mA @ 5V	©		©		©
	TC35 series	576mA @ 3.3V 380mA @ 5V	©				Ø
	TC36 series	333mA @ 3.3V 240mA @ 5V	©		Ø	~	Ø
TC3x	TC37 series	370mA @ 3.3V 244mA @ 5V	Ø		Ø		©
	TC38 series	515mA @ 3.3V 340mA @ 5V	©	Ø			Ø
	TC39 series	758mA @ 3.3V 500mA @ 5V		Ø			
	TC39 series (ADAS variant)	679 mA @ 3.3V (Τ _J = 125°C) 448 mA @ 5V (Τ _J = 125°C)	Ø	Ø			







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

Mapping OPTIREG™ PMIC with AURIX™ TC4x Microcontroller







				OPTIREG™ PMIC								
	nfineon	Marrian um Current	ISO 26262 compliant	ISO 26262 compliant		ISO 26262 compliant	ISO 26262 compliant					
A	AURIX TM Family	Maximum Current Consumption (real power pattern)	Consumption TLF35584/5Q*		TLF30682QV	TLE9243QK	TLF4D985QK					
			600mA (5V/3.3V)	600mA (5V/3.3V)	3.5A (3.3V), 2A (1.25V), 0.25A (5V)	800mA (5V)	600mA (5V/3.3V)					
TC4x	TC4D series	160mA @ 5V/3.3V 40mA @ 3.3V/1.8V 5000mA @ 1.0V					©					









Mapping OPTIREG™ product portfolio with Infineon Traveo™ Microcontrollers

Mapping OPTIREG[™] linear with Traveo[™] Microcontroller







					OPTIREG™	¹ linear		
1	Γraveo™	Maximum Power	Ultra	a Low Quiescent Currer	nt		Feature Set d Watchdog	Post LDO / Core Voltage
Family	Supply Current	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
	S6J311A/9 series	5V / 200mA (T _A = -40°C to +125°C)		Ø	Ø	Ø	Ø	
	S6J311E/D series	5V / 343mA (T _A = -40°C to +105°C)			Ø		Ø	
	S6J3120 series	5V / 255mA (T _A = -40°C to +105°C)			©		Ø	
1 st Gen	S6J3360 series	5V / 174mA (T _A = -40°C to +105°C)		Ø	Ø	Ø		
	S6J3370 series	5V / 158mA (T _A = -40°C to +105°C)		©		Ø		
	S6J3400 series	5V / 150mA (T _A = -40°C to +125°C)		©		Ø		
	S6J3510 series	5V / 158mA (T _A = -40°C to +125°C)		Ø		Ø		







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

Mapping OPTIREG[™] switcher with Traveo[™] Microcontroller







				OPTIR	EG™ switcher for Pre-Regulati	on and Core Voltages	
	Traveo™	Maximum Power		12V Pre-Reg Low Power DC-D		12V Pre-Regulator Medium Power Up-to 2.5A	
	Family	Supply Current	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
	S6J311A/9 series	5V / 200mA (T _A = -40°C to +125°C)	Ø	Ø	©		
	S6J311E/D series	5V / 343mA (T _A = -40°C to +105°C)	Ø	Ø	Ø	②	
	S6J3120 series	5V / 255mA (T _A = -40°C to +105°C)	Ø	Ø	Ø		
1 st Gen	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)					







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

Mapping OPTIREG™ SBC with Traveo™ Microcontroller







				(OPTIREG™ SBC		
٦	Γraveo™	Maximum Power Supply Current	Lite LDO SBC	Lite DCDC SBC	MR+ SBC	DCDC SBC	MCP+ SBC
	Family		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)
	S6J311A/9 series	5V / 200mA (T _A = -40°C to +125°C)		©	©		
	S6J311E/D series	5V / 343mA (T _A = -40°C to +105°C)		Ø			
	S6J3120 series	5V / 255mA (T _A = -40°C to +105°C)		Ø	Ø		
1 st Gen	S6J3360 series	5V / 174mA (T _A = -40°C to +105°C)		Ø	©		
	S6J3370 series	5V / 158mA (T _A = -40°C to +105°C)	Ø		©		
	S6J3400 series	5V / 150mA (T _A = -40°C to +125°C)	Ø	~	©		
	S6J3510 series	5V / 158mA (T _A = -40°C to +125°C)	©		©		







Mapping OPTIREG™ PMIC with Traveo™ Microcontroller







					OPTIREG™ P	MIC	
	Traveo™	Maximum Current	ISO 26262 compliant	ISO 26262 compliant		ISO 26262 compliant	ISO 26262 compliant
	Family	Consumption	TLF35584QV/QK/ QVH	TLF35585QV/QU	TLF30682QV	TLE9243QK	TLF4D985QK
		(real power pattern)	600mA (5V/3.3V)	600mA (5V/3.3V)	3.5A (3.3V), 2A (1.25V), 0.25A (5V)	800mA (5V)	600mA (5V/3.3V)
	S6J311A/9 series	5V / 200mA (T _A = -40°C to +125°C)					
	S6J311E/D series	5V / 343mA (T _A = -40°C to +105°C)	Ø	Ø		Ø	Ø
	S6J3120 series	5V / 255mA (T _A = -40°C to +105°C)					
1 st Gen	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)					







Mapping OPTIREG[™] Linear/Switcher with Traveo[™] II Microcontroller









				Current consumption	I _{rush} C _{S1}			OPTIREG™	Linear		OPTIREG	[™] Switcher	OPTIREG™
	TRANSOTM TOO		Current consumption Max. as per datasheet	Scenario with lower		supply	Ultra Low Quiescent Current		Advanced Feature Set Reset and Watchdog		12V Pre-Regulator Medium Power with enable + reset		Core Voltage
	RAVEO™ T2G Family	Core #	Max. clock speed All peripherals enabled	performance at T _^ = 85°C			TLS820xxx	TLS835xxx	TLS820Fx	TLS850Fx	TLS4120D0x	TLS4125D0x	
	<u>►</u> T2G-BE-512K CYT2B6		No I/O toggling T _A = 105°C	Max. as per estimation sheet Note: Flash writing not considered	*	and supply concept	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 T2G-BE-1M CYT2B7 T2G-BE-2M CYT2B9 T2G-BE-4M CYT2BL	Ф	I _{DDD} = 85mA @3.3V / 5V I _{DDD} = 102mA @3.3V / 5V I _{DDD} = 110mA @3.3V / 5V I _{DDD} = 127mA @ 3.3V / 5V	$I_{DDD} = 45mA$ $I_{IO} = 4mA$ Door ECU	375mA 9.4µF	No ①	⊘	Ø	⊘	©	②	②	
Cluster	T2G-CE-4M CYT2CL	Single	I _{DDD} = 140mA @ 3.3V / 5V	I _{DDD} = 52mA I _{IO} = 4mA Cluster entry	9. 4 µ1	(1)		©		Ø			
	T2G-BH-4M CYT3BB		I _{CCD} = 240mA @ 1.15V	$I_{CCD} = 110 \text{mA}$ $I_{DDD} = 12 \text{mA}$ $I_{DDD} = 2 \text{mA}$		Yes							Post LDO TLS208
high	T2G-BH-4M CYT4BB	Dual	I _{CCD} = 287mA @ 1.15V	I _{IO} = 2mA	850mA	23							800mA
Body high	T2G-BH-8M CYT4BF	Dn	I _{CCD} = 543mA @ 1.15V	I _{CCD} = 320mA	20µF	Yes ②③							Post LDO TLS208
	T2G-BH-16M CYT6BJ	Quad	I _{CCD} = 800mA @ 1.15V			Yes 3							800mA







(1)(2)(3) 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

Mapping OPTIREG™ SBC with Traveo™ II Microcontroller





				Current				Syste	m Basis Chip	(SBC)		OPTIREG™
			Current	consumptio n Scenario with			Lite LDO SBC	Lite DCDC SBC	MR+ SBC	DCDC SBC	MCP+ SBC	Core supply
_	RAVEO™ T2G	Core #	consumption	lower performance	I _{rush}	External core supply	TLE9461(-3) ES	TLE9471(-3) ES	TLE926x(-3) BQX	TLE927xQX	TLE9278(-3) BQX	
'	T2G-BE-512K		Max. as per datasheet Max. clock speed All peripherals enabled No I/O toggling T _A = 105°C	at T _A = 85°C Max. as per estimation sheet Note: Flash writing not considered		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
ΙŢ	T2G-BE-512K CYT2B6		I _{DDD} = 85mA @3.3V / 5V	I _{DDD} = 45mA								
Body entry	T2G-BE-1M CYT2B7		I _{DDD} = 102mA @3.3V / 5V	$I_{IO} = 4mA$	375mA 9.4μF		Ø	Ø	(3)			
Bod	T2G-BE-2M CYT2B9 T2G-BE-4M CYT2BL	gle	I_{DDD} = 110mA @3.3V / 5V I_{DDD} = 127mA @ 3.3V / 5V	Door ECU		No ①			•			
Cluster	T2G-BE-4M CYT2BL T2G-CE-4M CYT2CL	Sin	I _{DDD} = 140mA @ 3.3V / 5V	I_{DDD} = 52mA I_{IO} = 4mA Cluster entry			Ø	Ø	Ø			
	T2G-BH-4M CYT3BB		I _{CCD} = 240mA @ 1.15V	$I_{CCD} = 110 \text{mA}$ $I_{DDD} = 12 \text{mA}$ $I_{IO} = 2 \text{mA}$		Yes						
high	T2G-BH-4M CYT4BB	a	I _{CCD} = 287mA @ 1.15V	Cluster ECU	mA ECU 850mA 20µF	23						Post LDO
Body high	T2G-BH-8M CYT4BF	Dual	I _{CCD} = 543mA @ 1.15V	I _{CCD} = 320mA		20µF _{Ves}						TLS208 800mA
	T2G-BH-16M CYT6BJ	Quad	I _{CCD} = 800mA @ 1.15V	Tbd		Yes ③						







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

123 Supply concept like defined in further slides

Mapping OPTIREG[™] PMIC with Traveo[™] II Microcontroller







						OPTIREG™ PMI	С	
	Traveo™ II	Maximum Current	Need of external	ISO 26262 48V compliant	ISO 26262, 48V compliant	1	ISO 26262 compliant	ISO 26262 compliant
	Family	Consumption	core supply	TLF35584QV/QK	TLF35585QV/QU	TLF30682QV	TLE9243QK	TLF4D985QK
				600mA (5V/3.3V)	600mA (5V/3.3V)	3.5A (3.3V), 2A (1.25V), 0.25A (5V)	800mA (5V)	600mA (5V/3.3V)
Body	TVII-BE-512K CYT2B6 TVII-BE-1M CYT2B7	I _{DDD} = 102mA @3.3V / 5V I _{IO} = 50mA @ 3.3V / 5V	No					
entry	TVII-BE-2M CYT2B9 TVII-B-E-4M CYT2BL	I _{DDD} = = 110mA @3.3V / 5V I _{IO} = 50mA @ 3.3V / 5V	No					
	TVII-BH-4M CYT3BB TVII-BH-4M CYT4BB	I _{CCD} = 287mA @ 1.15V I _{IO} = 50mA @ 3.3V / 5V	Yes	Ø		•		Ø
Body high	TVII-BH-8M CYT4BF	I _{CCD} = 543mA @ 1.15V I _{IO} = 50mA @ 3.3V / 5V	Yes		⊘			Ø
	TVII-BH-16 CYT6BJ	I _{CCD} = 800mA @ 1.15V I _{IO} = 50mA @ 3.3V / 5V	Yes		⊘			⊘

Note: For **48V** application please refer to 48V slides.





Fit with additional components

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

Mapping OPTIREG[™] PMIC with Traveo[™] II Microcontroller







				OPTIREG™ PMIC								
1	Γraveo™ II	Maximum Current		ISO 26262 48V compliant	ISO 26262 48V compliant		ISO 26262 compliant	ISO 26262 compliant				
	Family	Consumption		TLF35584QV/QK	TLF35585QV/QU	TLF30682QV	TLE9243QK	TLF4D985QK				
				600mA (5V/3.3V)	600mA (5V/3.3V)	3.5A (3.3V), 2A (1.25V), 0.25A (5V)	800mA (5V)	600mA (5V/3.3V)				
Cluster entry	TVII-CE-4M CYT2CL	I _{DDD} = 140mA @3.3V / 5V I _{IO} = 50mA@ 3.3V	No									
	TVII-C-2D-4M CYT3DL	I _{CCD} = 950mA @ 1.15V I _{IO} = 50mA@ 3.3V / 5V	Yes									
Cluster	TVII-C-2D-6M CYT4DN	I _{CCD} = 1120mA @ 1.15V I _{IO} = 50mA @ 3.3V / 5V	Yes									

Note: For **48V** application please refer to 48V slides.

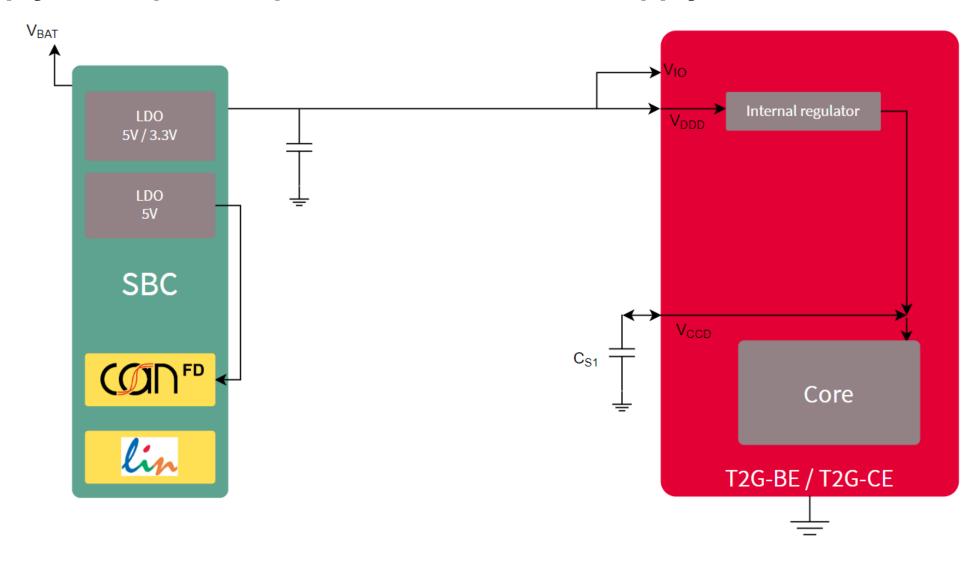






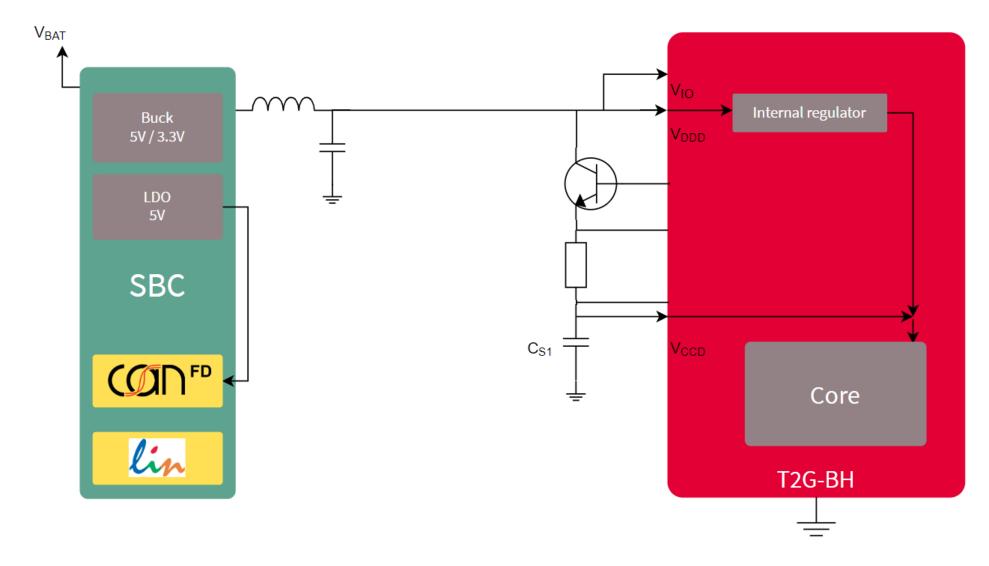


1: Supply concept example with internal core supply



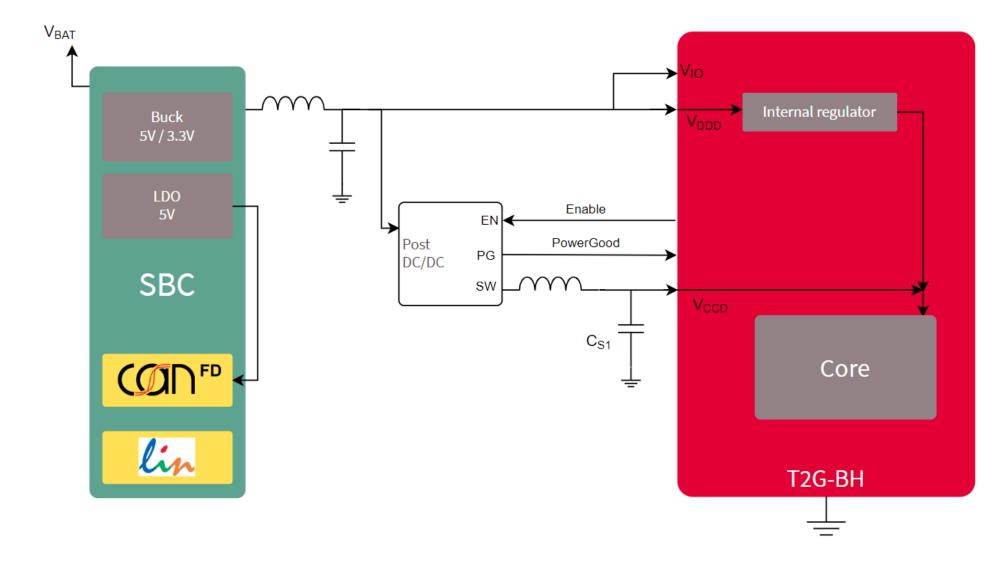


2: Supply concept example with external pass transistor





3: Supply concept example with external core supply





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

Mapping OPTIREG™ linear & SBC with PSoC® 4 Microcontrollers









			LowVoltage-	LIN LDO			OPTIREC	6™ linear			OPTIRE	G™ SBC	
Cypress	Typical current	Count of CAN				Ultra Low Qui	escent Current	t		Feature Set Watchdog	Lite LDO SBC	MR+ SBC	
PSoC® 4 Family		controller		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)		0	0	no	Ø	©	©					©	
PSoC 4100 / PSoC 4100S			Yes / no	Ø	Ø	©					©		
PSoC 4100S Plus	1.8 V < V _{CC} < 5.5 V I _{CC} = ~30 mA	1 CAN	no	⊘	~	Ø	⊘				©	Ø	
PSoC 4 M Series 4100M		2 CAN	yes								©	©	
PSoC 4100S Max		1 CAN-FD	no								©	Ø	







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



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

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







				OPTIREG™ linear							
	Texas Instrument C2000™	Power Consumption	Ult	ra Low Quiescent Cu	rrent	Advanced Feature Set Reset and Watchdog					
	Family		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)				
	TMS320F28004x series	143mA@ 3.3V		©	©	©					
	TMS320F2802x series	98mA@ 3.3V	©	©		©					
Piccolo™	TMS320F2802x series	153mA@ 3.3V		Ø	Ø	©					
generation	TMS320F2805x series	192mA@ 3.3V		Ø	Ø	Ø					
	TMS320F2806x series	307mA@ 3.3V					©				
	TMS320F2807x series	405mA@ 3.3V					Ø				
	TMS320F2833x series*	92mA @ 3.3V 350mA @ 1.8V									
Delfino™	TMS320F2834x series*	80mA @ 3.3V 45mA @ 1.8V 740mA @ 1.2V									
generation*	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°C to 125°C), V_{IN} (3.3 V)

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







			Ol	PTIREG™ switcher for Pre-	Regulation and Core Vo	Itages
Te	exas Instrument			e-Regulator r DC-DC 500mA		Regulator /er Up-to 2.5A
	C2000™	Power Consumption	TLF50251	TLF50281	TLS4120D0EP V33	TLS4125D0EP V50
	Family		500mA (5V)	500mA (5V)	2000mA (3.3V)	2500mA (5V)
			Enable & Reset	Enable, Reset & Watchdog	Enable + Reset	Enable + Reset
	TMS320F28004x series	143mA@ 3.3V				
	TMS320F2802x series	98mA@ 3.3V				
Piccolo™ generation	TMS320F2802x series	153mA@ 3.3V				
Piccolo ···· generation	TMS320F2805x series	192mA@ 3.3V				
	TMS320F2806x series	307mA@ 3.3V				
	TMS320F2807x series	405mA@ 3.3V			⊘	
	TMS320F2833x series*	92mA @ 3.3V 350mA @ 1.8V				
5 15 TM	TMS320F2834x series*	80mA @ 3.3V 45mA @ 1.8V 740mA @ 1.2V				
Delfino [™] generation*	TMS320F2837xD series*	90mA @ 3.3V 495mA @ 1.8V			Ø	
	TMS320F2837xD series*	90mA @ 3.3V 400mA @ 1.2V			⊘	





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°C to 125°C), V_{IN} (3.3 V)

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







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







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

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







*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 seperate source.

 V_{IN} (3.3 V)

Based on **Power Consumption Operational (flash) max.**, see datasheet parameter $I_{DDIO} + I_{DDA}$

 $(+I_{DD3VFL} + I_{DDA33})$ if VREG enabled (T_J = -40°C to 125°C),

					OPTIREG™ P	MIC	
Tex	as Instrument	Maximum	ISO 26262 compliant	ISO 26262 compliant		ISO 26262 compliant	ISO 26262 compliant
	C2000™ Family	Current Consumption	TLF35584QV/Q K	TLF35585QV/QU	TLF30682QV	TLE9243QK	TLF4D985QK
			600mA (5V/3.3V)	600mA (5V/3.3V)	3.5A (3.3V), 2A (1.25V), 0.25A (5V)	800mA (5V)	600mA (5V/3.3V)
	TMS320F28004x series	143mA@ 3.3V					
	TMS320F2802x series	98mA@ 3.3V					
Piccolo™	TMS320F2802x series	153mA@ 3.3V					
generation	TMS320F2805x series	192mA@ 3.3V					
	TMS320F2806x series	307mA@ 3.3V	Ø	Ø			
	TMS320F2807x series	405mA@ 3.3V	Ø	Ø			
	TMS320F2833x series*	92mA @ 3.3V 350mA @ 1.8V					
Delfino™	TMS320F2834x series*	80mA @ 3.3V 45mA @ 1.8V 740mA @ 1.2V				Ø	⊘
generation*	TMS320F2837xD series*	90mA @ 3.3V 495mA @ 1.8V				Ø	
	TMS320F2837xD series*	90mA @ 3.3V 400mA @ 1.2V	⊘				

6 Best 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 ($T_J = -40$ °C to 125°C), V_{IN} (3.3 V)



Mapping OPTIREG™ product portfolio with NXP S32K Microcontrollers

Mapping OPTIREG[™] linear with NXP S32K Microcontroller







			OPTIREG™ linear							
S	NXP 32K1xx	Maximum	Ultra	Ultra Low Quiescent Current			Advanced Feature Set Reset and Watchdog			
	Family	Power Consumption	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		
	S32K116 ¹	24.1mA @ 5V	Ø							
	S32K118 ¹	25.9mA @ 5V	Ø							
COOK	S32K142²	57.4mA @ 5V	Ø							
S32K	S32K144²	61.3mA @ 5V	Ø							
	S32K146²	82.8mA @ 5V	Ø	Ø		©				
	S32K148²	97.4mA @ 5V 119mA @ 3.3V					⊘	TLS203x (300mA)		

² Max. 112 MHz @ T_A = 105°C







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

¹ Max. 48 MHz @ T_A = 125°C

Mapping OPTIREG[™] switcher with NXP S32K Microcontroller







			OPTIREG™ switcher for Pre			
	NXP	Maximum	12V Pre Low Power	Post LDO / Core Voltage		
	S32K1xx Family	Power Consumption	TLF50251	TLF50281	TLS20x Family	
	1 anny		500mA (5V)	500mA (5V)	Use in combination with pre dc-dc	
			Enable & Reset	Enable, Reset & Watchdog		
	S32K116 ¹	24.1mA @ 5V				
	S32K118 ¹	25.9mA @ 5V				
62214	S32K142²	57.4mA @ 5V				
S32K	S32K144²	61.3mA @ 5V				
	S32K146²	82.8mA @ 5V				
	S32K148 ²	97.4mA @ 5V 119mA @ 3.3V			TLS203x (300mA)	

² Max. 112 MHz @ T_A = 105°C







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

¹ Max. 48 MHz @ T_A = 125°C

Mapping OPTIREG™ SBC with NXP S32K Microcontroller







				C	PTIREG™ SBC		
COOK	NXP	Maximum Bower Consumption	Lite LDO SBC	Lite DCDC SBC	MR+ SBC	DCDC SBC	MCP+ SBC
332N	1xx Family	Power Consumption	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)
	S32K116 ¹	24.1mA @ 5V	Ø				
	S32K118 ¹	25.9mA @ 5V	Ø				
COOK	S32K142 ²	57.4mA @ 5V	Ø				
S32K	S32K144 ²	61.3mA @ 5V	Ø				
	S32K146 ²	82.8mA @ 5V	Ø				
	S32K148 ²	97.4mA @ 5V 119mA @ 3.3V	⊘	⊘	✓		

² Max. 112 MHz @ T_A = 105°C







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

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

¹ Max. 48 MHz @ T_A = 125°C

Mapping OPTIREG[™] PMIC with NXP S32K Microcontroller







			OPTIREG™ PMIC						
NXP S32K1xx Family			ISO 26262 compliant	ISO 26262 compliant		ISO 26262 compliant	ISO 26262 compliant		
		Maximum Current Consumption	TLF35584QV/QK / QVH	TLF35585QV/QU	TLF30682QV	TLE9243QK	TLF4D985QK		
			600mA (5V/3.3V)	600mA (5V/3.3V)	3.5A (3.3V), 2A (1.25V), 0.25A (5V)	800mA (5V)	600mA (5V/3.3V)		
	S32K116 ¹	24.1mA @ 5V							
	S32K118 ¹	25.9mA @ 5V							
S32K	S32K142 ²	57.4mA @ 5V							
532K	S32K144 ²	61.3mA @ 5V					⊘		
	S32K146 ²	82.8mA @ 5V							
	S32K148 ²	97.4mA @ 5V 119mA @ 3.3V							

² Max. 112 MHz @ T_A = 105°C







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

¹ Max. 48 MHz @ T_A = 125°C



Mapping OPTIREG™ PMICs & SBCs with Renesas RH850 Microcontrollers

Mapping OPTIREG™ PMIC with Renesas RH850 Microcontroller







			OPTIREG™ PMIC						
		Maximum	ISO 26262 compliant	ISO 26262 compliant		ISO 26262 compliant	ISO 26262 compliant		
RH850 Family			TLF35584QV/QK/ QVH	TLF35585QV/QU	TLF30682QV	TLE9243QK	TLF4D985x		
			600mA (5V/3.3V)	600mA (5V/3.3V)	3.5A (3.3V), 2A (1.25V), 0.25A (5V)	800mA (5V)	600mA (5V/3.3V)		
C Series	RH850/C1M-Ax	730mA @ 1.25V 112mA @ 3.3V/5V			Ø				
	RH850/E1L	260mA @ 1.1V (NN) 53mA @ 3.3V/5V							
E Series	RH850/E2H	1300mA @ 1.1V 152mA @ 3.3V/5V					Ø		
E Series	RH850/E2M	1500mA @ 1.1V 154mA @ 3.3V/5V					Ø		
	RH850/E2UH	1700mA @ 1.1V 156mA @ 3.3V/5V					Ø		
	RH850/F1K	96mA @ 3.3V/5V							
E Saviac	RH850/F1H-D8	350mA tot @ 3.3V/5V (REG1VCC 290mA @ 3.3V)	Ø	Ø			©		
F Series	RH850/F1KM-S1	82mA @ 3.3V/5V							
	RH850/F1KM-S4	205mA @ 3.3V/5V		\bigcirc			⊘		







Mapping OPTIREG™ SBC with Renesas RH850 Microcontroller







Renesas RH850 Family			OPTIREG™ SBC					
		Power Consumption	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						
	RH850/E1L	260mA @ 1.1V (NN) 53mA @ 3.3V/5V						
E Series	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						
	RH850/F1K	96mA @ 3.3V/5V	©		\bigcirc			
F Series	RH850/F1KH-D8	350mA tot @ 3.3V/5V (REG1VCC 290mA @ 3.3V)		Ø			⊘	
	RH850/F1KM-S1	82mA @ 3.3V/5V	©					
	RH850/F1KM-S4	205mA @ 3.3V/5V		©	Ø		⊘	







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







	Maximum	OPTIREG™ PMIC						
ST SPC5x Family		ISO 26262 compliant	ISO 26262 compliant		ISO 26262 compliant	ISO 26262 compliant		
	Power dissipation	TLF35584QV/QK/ QVH	TLF35585QV/QU	TLF30682QV	TLE9243QK	TLF4D985QK		
		600mA (5V/3.3V)	600mA (5V/3.3V)	3.5A (3.3V), 2A (1.25V), 0.25A (5V)	800mA (5V)	600mA (5V/3.3V)		
SPC584C70E3	711mA @ 3.3V/5V							
SPC584B60E1	390mA @ 3.3V/5V	Ø	Ø			Ø		
SPC58NH92C3	1800mA @ 3.3V/5V			⊘				
SPC560B64L7	386mA @ 3.3V/5V	Ø	©			Ø		
SPC56EL70L5	460mA @ 3.3V	Ø	Ø		Ø	©		
SPC564A80B4	546mA @ 5V	Ø	Ø		©	Ø		







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

Mapping OPTIREG™ SBC with ST SPC5x Microcontroller







		OPTIREG™ SBC					
ST SDCEv Family	Power	Lite LDO SBC	Lite DCDC SBC	MR+ SBC	DCDC SBC	MCP+ SBC	
ST SPC5x Family	Consumption	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				Ø		
SPC584B60E1	390mA @ 3.3V/5V		Ø		©	Ø	
SPC58NH92C3	1800mA @ 3.3V/5V						
SPC560B64L7	386mA @ 3.3V/5V		Ø		©	©	
SPC56EL70L5	460mA @ 3.3V		©		©	©	
SPC564A80B4	546mA @ 5V				Ø	©	







