Rev. 2.0, 2006-04-05

SLIC-E / TSLIC-E

Subscriber Line Interface Circuit

PEF 4265 / PEF 4365, Version 2.1

Preface

This document explains the differences between SLIC-E PEF 4265 V2.1 / TSLIC-E PEF 4365 V2.1 and the predecessor version V1.2 (**Chapter 1**). With the new version the evaluation boards SMART 4265 V1.2 or SMART 4365 V1.1 have to be slightly modified (**Chapter 2**).

1 Differences between (T)SLIC-E V1.2 and (T)SLIC-E V2.1

Although SLIC-E / TSLIC-E V2.1 is pin-compatible with version V1.2, some differences and their consequences should be considered.

1.1 Compatibility with VDD = 3.3 V and VDD = 5 V Supply Voltages

SLIC-E / TSLIC-E V2.1 is compatible with both 3.3 V and 5 V VDD voltages, whereas version V1.2 can only be operated at 5 V.

1.2 High Impedance DC Inputs

SLIC-E / TSLIC-E V2.1 features high ohmic input pins DCP / DCN (typically some MOhms).

Consequences

- SLIC-E / TSLIC-E V2.1 can be operated together with VINETIC-2CPE V2.1
- With V2.1, the VINETICOS coefficients calculated for V1.2 result in higher output voltages (typically 4% higher). If such tolerances can not be accepted, new coefficients must be calculated and downloaded. SLIC-E / TSLIC-E V2.1 can be selected in the new version of the coefficient program VINETICOS.

1.3 Improved ADSL Friendliness

Version V2.1 is particularly well suited for applications in ADSL IVD (integrated voice/data) systems due to low noise and distortions and optimized mode transition behavior.

1.4 Changes in Application Circuit

There are three changes in the application circuit compared to SLIC-E / TSLIC-E V1.2.

Revision History: Previous Version:

Major Changes:

1.4.1 Change of Value and Voltage Rating of Capacitor C_{EXT}

The required nominal capacitor value as well as the voltage rating of capacitor C_{EXT} are different compared to the previous version V1.2. The differences are shown in **Table 1**.

Table 1 Parameters of C_{EXT}

Parameter	Value for V1.2	Value for V2.1
Nominal Capacitance	470 nF	100 nF
Voltage Rating	10 V	50 V
Tolerance	20 %	20 %

Consequences

- A change of capacitor C_{EXT} is mandatory, if SLIC-E / TSLIC-E V2.1 should be used in an existing design! Thus, the capacitors on the SLIC evaluation boards SMART 4265 V1.2 and SMART 4365 V.1.1 must be changed accordingly (see **Chapter 2** for details).

1.4.2 Necessity of per Channel Series Diode in V_{BATL} Supply

If two battery voltages are used, the diode scheme of **Figure 1** is required on a per channel base (with V1.2, sharing of D3 between different SLICs is allowed).

Consequence

- Configurations where two or more SLIC devices share power supply diodes can not be used together with SLIC-E / TSLIC-E V2.1.

The recommended (and only valid) power supply diode configuration for SLIC-E V2.1 is shown in **Figure 1**.

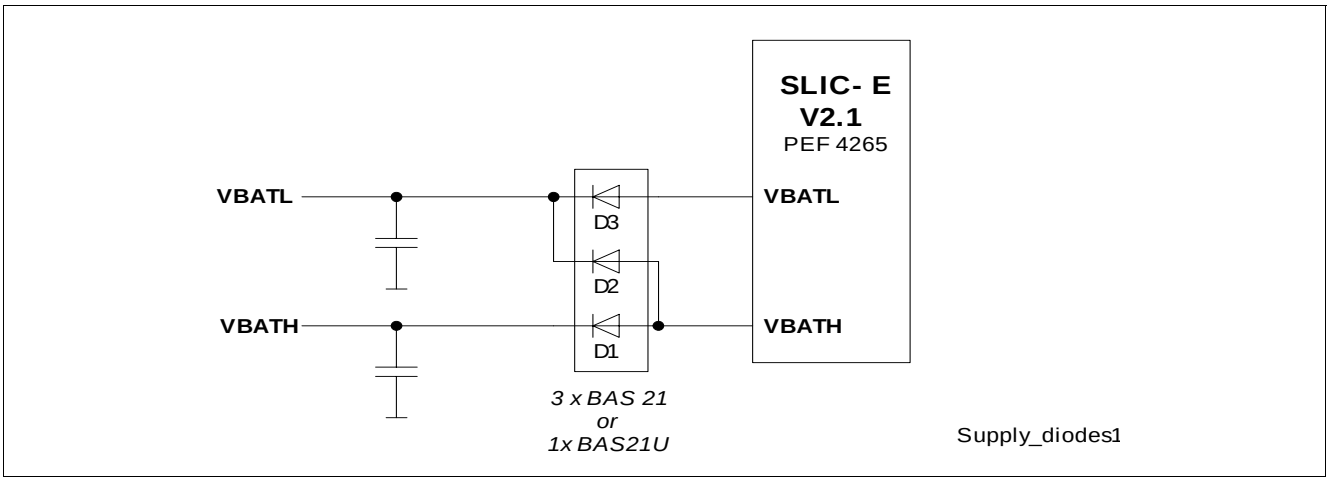

Figure 1 Power Supply Diode Configuration for SLIC-E V2.1

Similarly, the recommended (and only valid) power supply diode configuration for TSLIC-E V2.1 is shown in **Figure 2**.

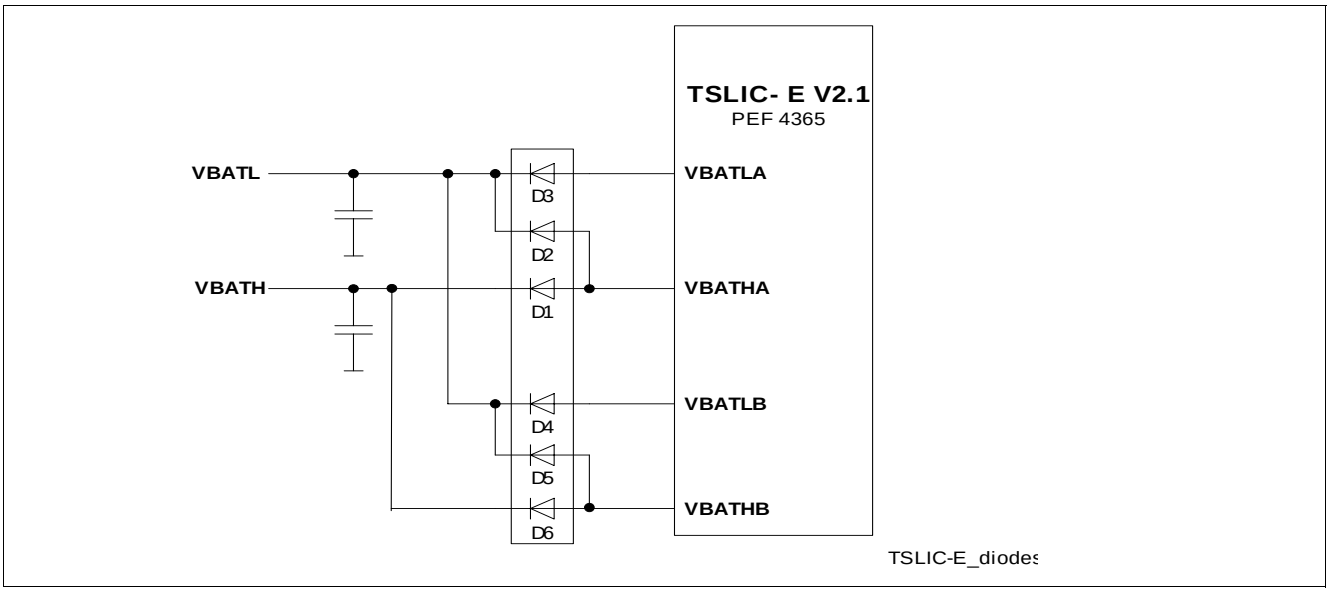

Figure 2 Power Supply Diode Configuration for TSLIC-E V2.1

1.4.3 Missing VCMS Pin

Compared to previous SLIC-E / TSLIC-E versions there is no need for applying the reference voltage VCMS to SLIC-E / TSLIC-E V2.1. This voltage is now generated internally. The pins “VCMS” of previous SLIC-E / TSLIC-E versions are internally not connected (“n.c”). The affected pins are shown in **Table 2**.

Table 2 Affected Pins of SLIC-E / TSLIC-E V2.1

Device	SLIC-E V2.1	SLIC-E V2.1	TSLIC-E V2.1
Package	P-/PG-DSO-20-24	P-/PG-VQFN-48-4	P-/PG-DSO-36-10
Pin Number	11	14	19, 28

Consequence

If SLIC-E / TSLIC-E V2.1 is used in existing designs, no change is necessary. In new designs, “n.c” pins should be left open.

2 Capacitor Change on Evaluation Boards

As mentioned in **Chapter 1.4.1**, SLIC-E / TSLIC-E V2.1 requires a capacitor C_{EXT} with higher voltage rating and different nominal value compared to SLIC-E / TSLIC-E V1.2. As a consequence, SLIC-E / TSLIC-E V2.1 can not be used on the evaluation boards SMART 4265 V1.2 (PEF 4265) or SMART 4365 V1.1 (PEF 4365) without any modification. The capacitor C_{EXT} corresponds to capacitor **C3** (channel A) and to capacitor **C16** (channel B) on these boards. Both capacitors must be changed according to **Table 1**. A SMD type of 0805 size is required. The locations of both capacitors are shown in **Figure 3** (SMART 4265 V1.2) and in **Figure 4** (SMART 4365 V1.1).

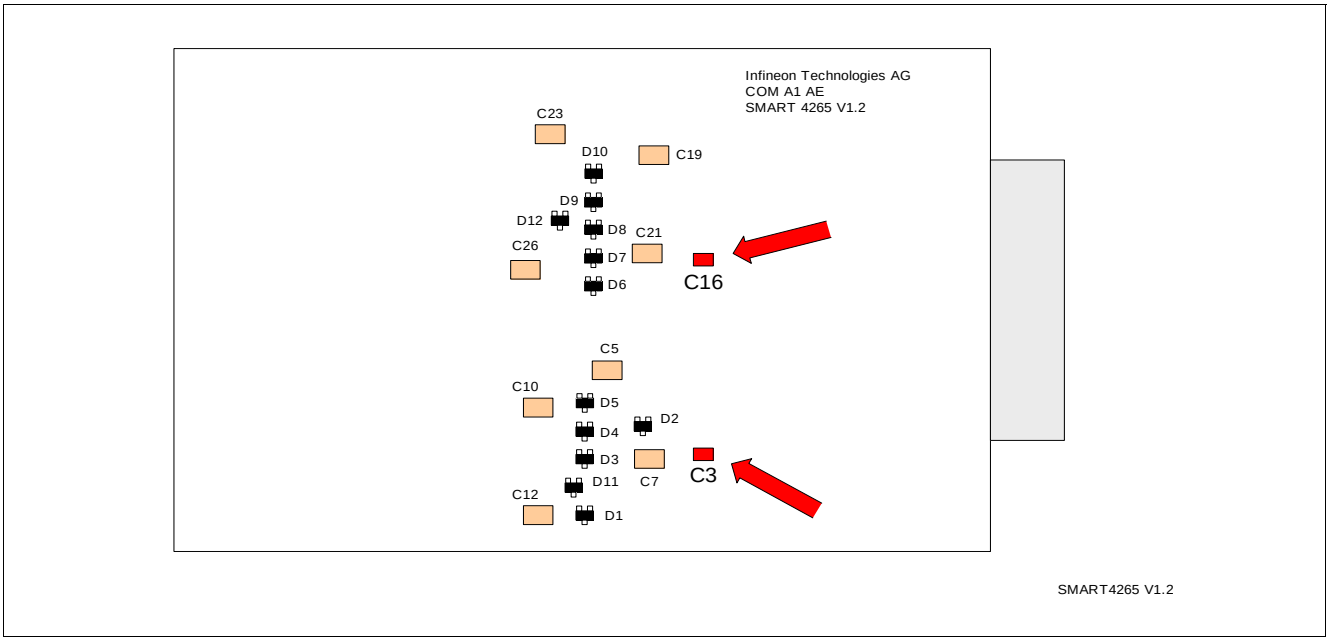

Figure 3 Location of C3 and C16 on SMART 4265 Version 1.2 (bottom side)

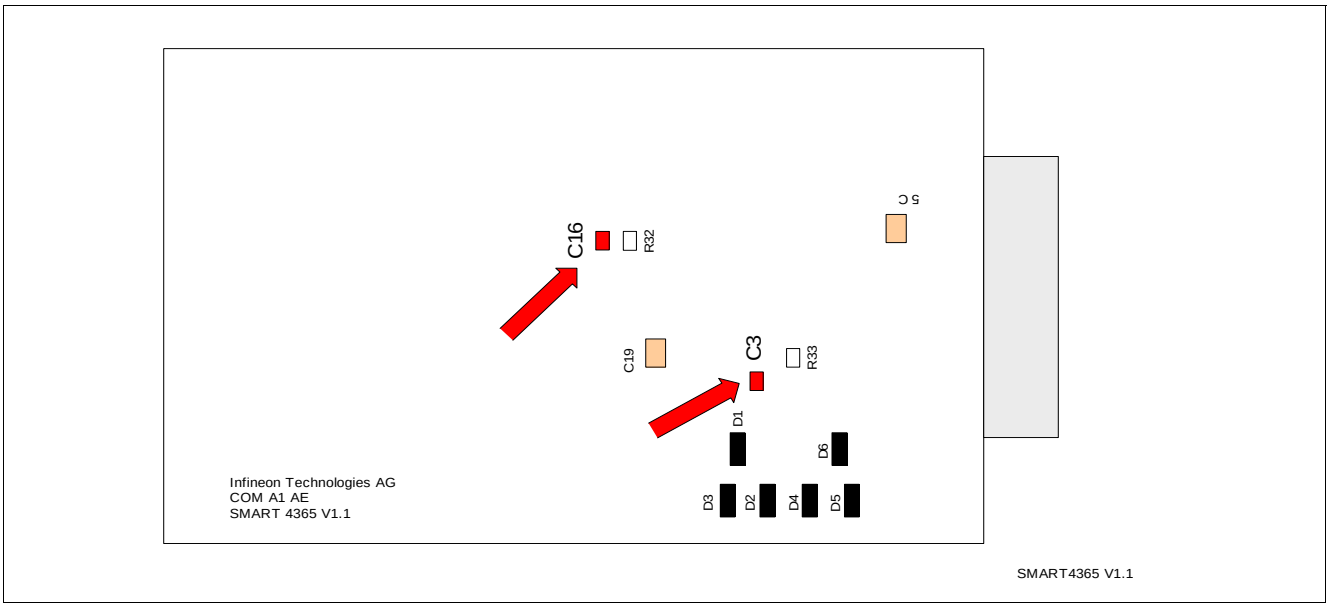

Figure 4 Location of C3 and C16 on SMART 4365 Version 1.1 (bottom side)

3 Marking of new Version V2.1

The marking of the new version V2.1 of SLIC-E / TSLIC-E is shown in **Table 3** below.

Table 3 Marking of SLIC-E / TSLIC-E V2.1

	PEF 4265 T V2.1	PEF 4265 V V2.1	PEF 4365 T V2.1	PEF 4365 T-S V2.1
Line 1	PEF4265T V2.1	INFINEON	INFINEON	PEF4365TSV2.1
Line 2	<date code> <lot code>	PEF4265V	PEF 4365 T	<date code> <lot code>
Line 3		V2.1	<date code>	
Line 4		<lot code>	V2.1	