Transition Guideline to Replace the TFDU4202 and TFDU4203

The TFDU4202 and TFDU4203 transceivers are obsolete. There is not a pin compatible transceiver available to replace them. The TFDU4300 is the recommended replacement. This guide provides a summary of all the SIR or 115 kbit/s transceivers available and the associated design changes that are required.

In the following table the mechanical dimensions are shown for comparison.

TABLE 1 - MECHANICAL DIMENSIONS AND ECHO

	LENGTH (mm)	HEIGHT (mm)	WIDTH (mm)	FOOTPRINT AREA (mm^2)	PIN PITCH (mm)	RANGE (cm)	ECHO
TFDU4202/TFDU4203	7.1	2.8	4.7	33	0.8	≥ 70	Off
TFBS4650	6.8	1.6	2.8	19	0.95	≥ 30	Off
TFBS4711	6.0	1.9	3.1	19	0.95	≥ 50	Off
TFDU4300	8.5	2.5	2.9	25	0.95	≥ 70	Off
TFDU4101	9.7	4.0	4.7	46	1.0	≥ 100	On

TABLE 2 - PIN ORDER

	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7	PIN 8
TFDU4202	GND/cath/IRED		RXD	V_{CCP}	GND	GND	TXD	V_{CC}
TFDU4203	GND/cath/IRED		RXD	V_{CC}	GND	GND	TXD	SD
TFDU4300	V_{CC2}/IRED	Cath/IRED	TXD	RXD	SD	V_{CC1}	$V_{I/O}$	GND
TFDU4101	V_{CC2}/IRED	Cath/IRED	TXD	RXD	SD	V_{CC1}	NC	GND
TFBS4650	V_{CC2}/IRED	Cath/IRED	TXD	RXD	SD	V_{CC1}	GND	--
TFBS4711	V_{CC2}/IRED	TXD	RXD	SD	V_{CC1}	GND	--	--

REPLACING TFDU4202

When TFDU4202 is to be replaced by one of the above-mentioned types and a shutdown line is not available, the SD pin of the replacement part is to be connected to ground.

The voltage supply for the IRED driver of TFDU4202, V_{CCP}, is to be connected to pin 1, V_{CC2} of the replacement. If a current reducing resistor R2 is used, this has to be connected from the supply voltage to pin 1. The value will not be changed when the same intensity/range is to be considered.

When TFDU4300 is used the $V_{I/O}$ - reference V_{log} is directly to be connected to V_{CC1} (short between pin 6 and pin 7). See the comparison of the application circuits on page 2. In table 3 the optional external components are listed.

REPLACING TFDU4203

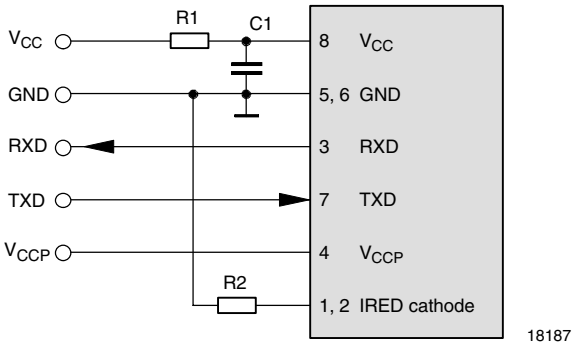
When TFDU4203 is to be replaced by one of the above mentioned types the option to use the split power feature connecting the IRED driver directly to the unregulated power supply and supply only V_{CC1} from the regulated supply should be considered. When that is not intended, both supply lines will be connected to the single supply voltage. If a current reducing resistor R2 was used, this has to be connected from the single supply voltage to pin 1. The value will not be changed when the same intensity/range is to be considered.

When TFDU4300 is used the $V_{I/O}$ - reference V_{log} is directly to be connected to V_{CC1} (short between pin 6 and pin 7). See the comparison of the application circuits on page 2. In table 3 the optional external components are listed.

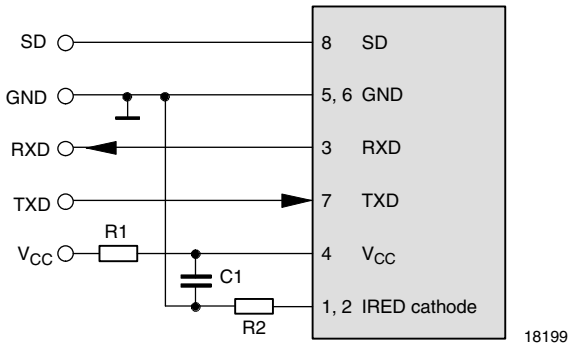
ECHO-ON/ECHO-OFF

As shown in table 1, the TFDU4202 and TFDU4203 are echo-off. The recommended replacement, TFDU4300, is also Echo-off. Should a transceiver with echo-on be used as a replacement, please carefully follow the software recommendations in that transceiver's data sheet.

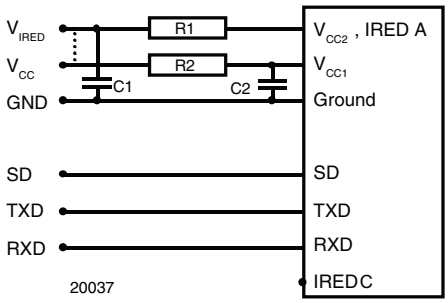
APPLICATION CIRCUITS



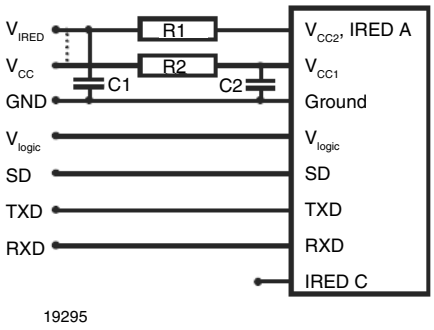
TFDU4202



TFDU4203



TFDU4101, TFBS4650



TFDU4300

TABLE 3 - OPTIONAL EXTERNAL COMPONENTS

	R1	R2	C1	C2
TFDU4202	5 Ω to 47 Ω	≥ 0 Ω (1)	4.7 µF	--
TFDU4203	≤ 5 Ω	≥ 0 Ω (1)	4.7 µF	--
TFDU4300	≥ 0 Ω (1)	10 Ω	4.7 µF	220 nF
TFDU4101	≥ 0 Ω (1)	10 Ω	4.7 µF	220 nF
TFBS4650	≥ 0 Ω (1)	≤ 47 Ω	100 nF	100 nF
TFBS4711	≥ 0 Ω (1)	≤ 47 Ω	100 nF	100 nF

Note

(1) For reducing current consumption