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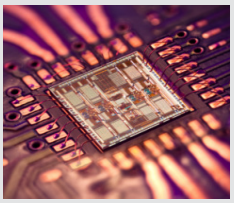
Product Brief

AFSI-SD4B4L

DC Bias Controller for Quad EML



Key Features

- Four independent current sources for DFB bias.

  0 to 150 mA variable with DAC control (10 bits).

  0 to 70 mA constant with DAC control (3 bits).
- Four independent voltage sources for EAM (0 to –3V/–4V) with DAC control (10 bits).
- Four independent channels for EAM photo-monitor current (5 to 40 mA, 10-bit ADC).
- Four independent channels of MPD bias (0 to –2.5V/–3V, 7-bit DAC) and input monitoring (50 uA to 4 mA, 10-bit ADC).
- Four independent channels of RSSI input monitoring (0.01 to 4 mA, 10-bit ADC).
- Independent channels of general-purpose DACs.
- Four positive (0 to 3V/4V, 6-bit DAC; 0 to 5 mA).
- Four negative (0 to –3V/–4V, 6-bit DAC; 0 to 5mA).
- Laser junction voltage monitoring (Vf, 0.01–2V).
- Temperature monitoring (–10 to 110˚C, 10-bit ADC).
- Vcc33 monitoring (3.3V ± 5%, 10-bit ADC).
- Vcc25 monitoring (2.5V ± 5%, 10-bit ADC).
- Vcc18 monitoring (1.8V ± 5%, 10-bit ADC).
- VEE monitoring (–3.3V/–4.5V, ± 5% range, 10-bit ADC).
- Chip hardware reset.
- Global BIAS disable control functions to disable all channels of DFB bias outputs.
- Global RX_LOS output generated from RSSI inputs, with programmable LOS level.
- Supports I2C interface.
- 4 mm x 4 mm BGA 49 Ball. 500-um pitch.
- –40˚C to 110˚C junction operating temperature.

Overview

The AFSI-SD4B4L IC provides DC control for optical transceivers based on a quad Electro-Absorption Modulator (EAM). Four current bias outputs and four negative voltage bias outputs are generated for both the DFB laser and the EAM. Receiver photocurrent, generated by each EAM, can be monitored, and the IC also interfaces with the ROSA to monitor the input optical signal (RSSI) and manage the LOS output signal. There are four EML Monitor Photodiode current monitors, four positive and four negative general-purpose DACs.

A sensor block is provided to monitor the IC temperature and the voltage supplies.

Applications

- CFP4 LR4
- CWDM QSFP28
- DWDM QSFP28
- 200-Gb/s PAM-4 QSFP28
- 400G-PSM4 (4 x 100 Gb/s) – 400G-LR4 (1 x 400 Gb/s)

Ordering Information

Product Code	Description
AFSI-SD4B4L	DC bias controller for quad EML, in BGA package

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For more product information: broadcom.com

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