FAIRCHILD
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FSA880 / FSA881 – USB Port 2:1 Switch with Accessory and Charger Detection

Features

Switch Type	2:1 USB
Switch Mechanism	Automatic switching with Available Interrupt
Accessory Detection	USB Data Cable Chargers (CDP, DCP, Travel Adapter, Car Kit-CEA-936-A) Factory-Mode Cables
USB	FS and HS 2.0 Compliant
USB Charging	Battery Charging 1.1 Compliant Charger Detect, DCD, OVT (28 V)
UART	RxD and TxD
VBAT	3.0 to 4.4 V
Programmability	I²C
ESD	15kV IEC 61000-4-2 Air Gap
Operating Temperature	-40°C to 85°C
Package	16-Lead UMLP 1.8x2.6x0.55 mm, 0.4 mm Pitch
JIG Option	FSA880 – Active LOW FSA881 – Active HIGH
Ordering Information	FSA880UMX FSA881UMX

Description

The FSA88x is a high-performance switch featuring automatic switching and accessory detection for a USB port. The FSA88x allows sharing of a common USB port to pass USB data, as well as factory programmability. In addition, the FSA88x integrates accessory detection of devices such as USB chargers and factory data cables. The FSA88x can be programmed for manual switching or automatic switching of data paths. VBUS_IN has 28 V over-voltage tolerance.

The difference between the FSA880 and the FSA881 is that FSA880 JIG output is an open-drain, active-LOW output, while FSA881 JIG is an active-HIGH, CMOS output.

Applications

- Cellular Phones, Smart Phones
- MP3 and PMP

Related Resources

- *For samples and questions, please contact: Analog.Switch@fairchildsemi.com.*
- FSA880 / FSA881 Demonstration Board

Typical Application
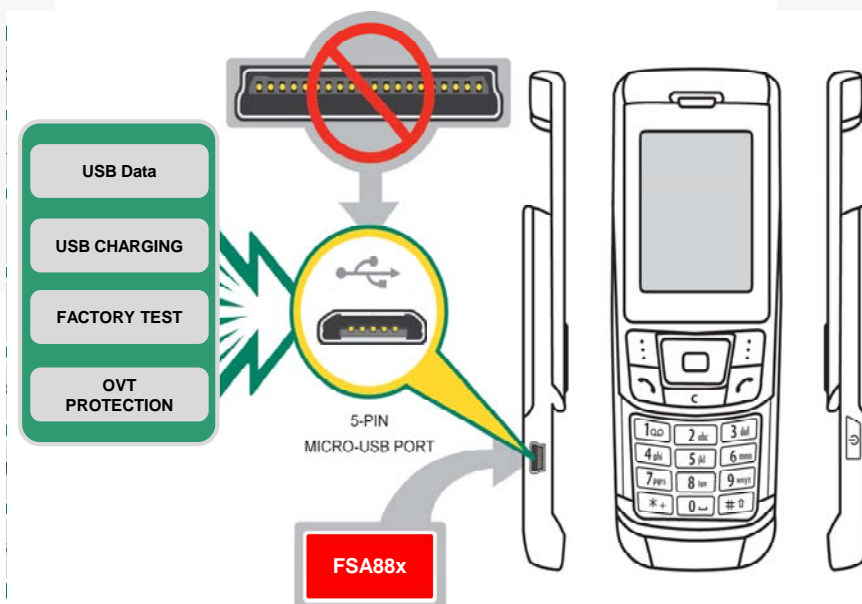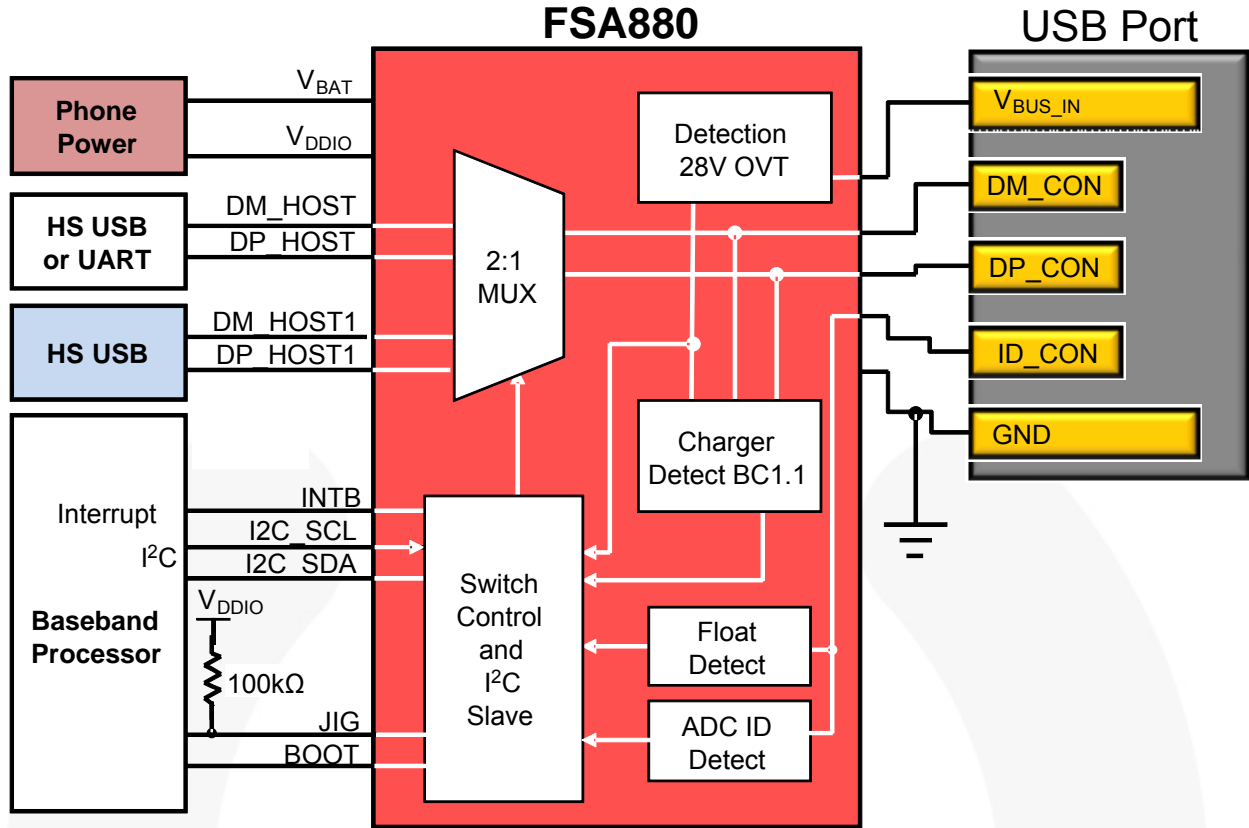

Figure 1.   Mobile Phone Example

Block Diagram

FSA880

USB Port

Detection 28V OVT

2:1 MUX

Charger Detect BC1.1

Switch Control and I²C Slave

Float Detect

ADC ID Detect

Phone Power — V_{BAT}, V_{DDIO}

HS USB or UART — DM_HOST, DP_HOST

HS USB — DM_HOST1, DP_HOST1

Baseband Processor — Interrupt (INTB), I²C (I2C_SCL, I2C_SDA), V_{DDIO}, 100kΩ, JIG, BOOT

V_{BUS_IN}

DM_CON

DP_CON

ID_CON

GND

Figure 2. Block Diagram

Pin Configuration

ID_CON DP_CON DM_CON V_{BUS_IN}

| 16 | 15 | 14 | 13 |

DM_HOST 1

DP_HOST 2

DM_HOST1 3

DP_HOST1 4

12 GND

11 I2C_SDA

10 I2C_SCL

9 INTB

| 5 | 6 | 7 | 8 |

V_{BAT} BOOT JIG V_{DDIO}
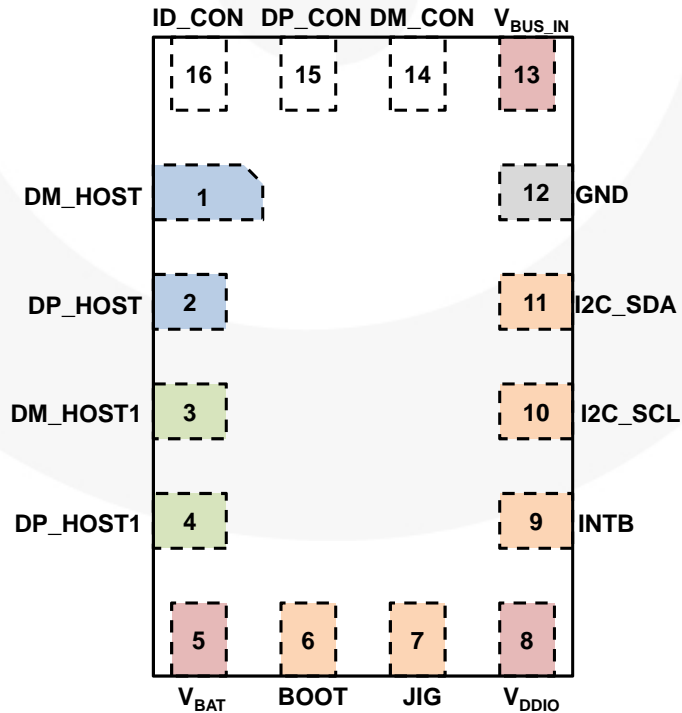
Figure 3. Pin Assignment (Through View)

Physical Dimensions

0.10 C 1.80 A B
2X

PIN#1 IDENT

2.60

0.10 C
2X

TOP VIEW

0.10 C 0.55 MAX. 0.152
0.08 C
0.05
0.00 SEATING PLANE C

SIDE VIEW

0.45
0.35
5

9 0.40

PIN#1 IDENT

1

16 13
0.25
0.15
0.55
0.45
0.10 C A B
0.05 C

BOTTOM VIEW

2.10 0.563 (15X)
0.663

1

0.40 2.90

0.225 (16X)

RECOMMENDED LAND PATTERN

TERMINAL SHAPE VARIANTS

0.40
0.60
0.15
0.25 0.10
0.10
PIN 1

15X 0.15
0.25 0.30
0.50 15X
NON-PIN 1

Supplier 1

0.15
0.25 0.30
0.50
PIN 1

15X 0.15
0.25 0.30
0.50 15X
NON-PIN 1

Supplier 2

LEAD SHAPE AT PACKAGE EDGE
R0.20
PACKAGE EDGE

LEAD OPTION 1
SCALE : 2X

LEAD OPTION 2
SCALE : 2X

NOTES:
A. PACKAGE DOES NOT FULLY CONFORM TO JEDEC STANDARD.
B. DIMENSIONS ARE IN MILLIMETERS.
C. DIMENSIONS AND TOLERANCES PER ASME Y14.5M, 1994.
D. LAND PATTERN RECOMMENDATION IS BASED ON FSC DESIGN ONLY.
E. DRAWING FILENAME: MKT-UMLP16Arev4.
F. TERMINAL SHAPE MAY VARY ACCORDING TO PACKAGE SUPPLIER, SEE TERMINAL SHAPE VARIANTS.

Figure 23.   16-Lead Ultrathin Molded Leadless Package (UMLP), 1.8 mm x 2.6 mm x 0.55 mm, 0.4 mm Pitch

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Part Number	Operating Temperature Range	Top Mark	Package
FSA880UMX	-40 to +85°C	KU	16-Lead, Ultrathin Molded Leadless Package (UMLP), 1.8 mm x 2.6 mm x 0.55 mm, 0.4 mm Pitch
FSA881UMX	-40 to +85°C	KX	16-Lead, Ultrathin Molded Leadless Package (UMLP), 1.8 mm x 2.6 mm x 0.55 mm, 0.4 mm Pitch

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