



## Industry's First N- and P-Channel Power MOSFETs With On-Resistance Ratings Down to 1.2 V in Industry's Smallest Chipscale Package; First P-Channel Device in This Package Size

Vishay Intertechnology, Inc. (NYSE: VSH) announces the 8 V n-channel Si8802DB and p-channel Si8805EDB TrenchFET® power MOSFETs in the MICRO FOOT® package. The new devices represent the industry's first p-channel power MOSFET in the industry's smallest 0.8 mm by 0.8 mm chipscale package, in addition to the first n- and p-channel devices to offer on-resistance ratings down to 1.2 V in this package size.

### Product Benefits:

- Compact MICRO FOOT package with 0.8 mm by 0.8 mm outline and ultra-thin 0.357 mm profile
  - Occupies up to 36 % less board space than next smallest devices
  - Enables smaller, slimmer mobile end products
- Low on-resistance
  - Minimizes voltage drops across the load switch to prevent unwanted under-voltage lockout
- On-resistance ratings down to 1.5 V and 1.2 V
  - Ideal for low-voltage power rails common in handheld devices
  - P-channel load switching eliminates extra resistor and voltage source
  - Prolongs battery life between charges in n-channel load switching
- P-channel Si8805EDB offers ESD protection of 1,500 V
- Halogen free in accordance with the IEC 61249-2-21 definition
- Compliant to RoHS Directive 2002/95/EC



### Market Applications:

- Load switching in handheld devices including smart phones, tablets, portable media players, and mobile computing devices



## The Key Specifications:

Part #	Si8805EDB	Si8802DB
<b>Polarity</b>	P-channel	N-channel
<b>Typical area (mm<sup>2</sup>)</b>	0.64	0.64
<b>Max. area (mm<sup>2</sup>)</b>	0.7056	0.7056
<b>Typical height (mm)</b>	0.357	0.357
<b>Max. height (mm)</b>	0.4	0.4
<b>V<sub>DS</sub> (V)</b>	-8	8
<b>V<sub>GS</sub> (V)</b>	5	5
<b>R<sub>DS(ON)</sub> @ 4.5 V (mΩ)</b>	68	54
<b>R<sub>DS(ON)</sub> @ 2.5 V (mΩ)</b>	88	60
<b>R<sub>DS(ON)</sub> @ 1.8 V (mΩ)</b>	-	68
<b>R<sub>DS(ON)</sub> @ 1.5 V (mΩ)</b>	155	86
<b>R<sub>DS(ON)</sub> @ 1.2 V (mΩ)</b>	290	135
<b>ESD?</b>	Y	N

## The Perspective:

Saving valuable space where it's extremely constrained in handheld devices, the 8 V n-channel Si8802DB and p-channel Si8805EDB TrenchFET power MOSFETs are offered in the 0.8 mm by 0.8 mm MICRO FOOT package with an ultra-low 0.357 mm profile. The n-channel Si8802DB offers on-resistance of 54 mΩ at 4.5 V, 60 mΩ at 2.5 V, 68 mΩ at 1.8 V, 86 mΩ at 1.5 V, and 135 mΩ at 1.2 V. While the device's package outline is 36 % smaller than the next smallest device, its on-resistance values at 1.8 V and 1.5 V are 5.5 % and 7.5 % lower, respectively. The p-channel Si8805EDB features on-resistance of 68 mΩ at 4.5 V, 88 mΩ at 2.5 V, 155 mΩ at 1.5 V, and 290 mΩ at 1.2 V. While occupying 29 % less board space than the next smallest p-channel device, its on-resistance values at 4.5 V and 2.5 V are still 17 % and 8 % lower, respectively.

The lower on-resistance of the Si8802DB and Si8805EDB minimize voltage drops across the load switch to prevent unwanted under-voltage lockout. The devices' low on-resistance at 1.5 V and guaranteed on-resistance limits at 1.2 V simplify designs by allowing the MOSFETs to work with the low-voltage power rails common in handheld devices, eliminating an extra resistor and voltage source for p-channel load switching, and providing longer battery operation between charges in n-channel load switching.

## Useful Links

MICRO FOOT Product Sheet [http://www.vishay.com/docs/49745/vmn\\_pt01.pdf](http://www.vishay.com/docs/49745/vmn_pt01.pdf)  
MICRO FOOT Web Selector <http://www.vishay.com/mosfets/micro-foot-package/>

1.2 V rated Product Sheet <http://www.vishay.com/docs/49723/pt0103.pdf>  
1.2 V rated Web Selector <http://www.vishay.com/mosfets/12-rated-on-res/>

Featured MOSFET Families  
<http://www.vishay.com/landingpage/tradeshows/powermanagement/2011/mosfets.html>

MOSFET Gateway <http://www.vishay.com/mosfets/>



# New Product Info



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**Product Group:** Vishay Siliconix, MOSFETs

To access the product datasheets on the Vishay Web site, go to

<http://www.vishay.com/doc?67999> (Si8802DB)

<http://www.vishay.com/doc?67935> (Si8805EDB)