



# Ultrasound scanner



Healthcare



Expertise Applied | Answers Delivered

*Users must independently evaluate the suitability of and test each product selected for their own specific applications. It is the User's sole responsibility to determine fitness for a particular system or use based on their own performance criteria, conditions, specific application, compatibility with other components, and environmental conditions. Users must independently provide appropriate design and operating safeguards to minimize any risks associated with their applications and products. Littelfuse products are not designed for, and may not be used in, all applications.*

*Read complete Disclaimer Notice at: [www.littelfuse.com/disclaimer-electronics](http://www.littelfuse.com/disclaimer-electronics).*

# Littelfuse solutions for portable ultrasound scanners

## Battery management unit

- PPTC
- Diode array



## User interface

- Diode array



## HV pulse generator

- MOSFET
- Fast recovery diode



## Wired interface

- PPTC
- Diode array



## Wireless interface

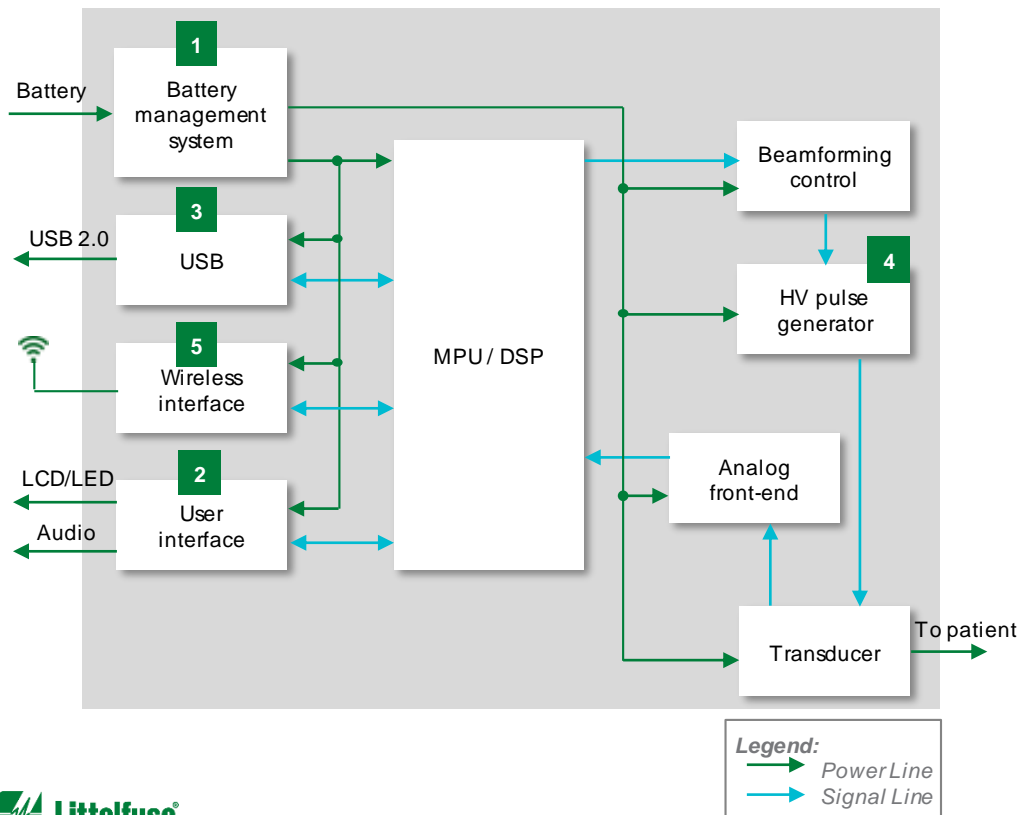
- Polymer ESD suppressor





Click on the product series in the table below for more info

# Portable ultrasound scanner block diagram



	Technology	Series
1	PPTC	<a href="#">nanoSMD</a> , <a href="#">femtoSMD</a>
	Diode array	<a href="#">SP11xx</a> , <a href="#">SP1250</a>
2	Diode array	<a href="#">SP1103</a>
3	PPTC	<a href="#">LoRho</a>
	Diode array	<a href="#">SP3019</a> , <a href="#">SP3400</a> , <a href="#">SP1250</a>
4	MOSFET	<a href="#">HiPerFETs</a>
	Fast recovery diode	<a href="#">HIPERDYN</a>
5	Polymer ESD suppressor	<a href="#">PGB10603</a> , <a href="#">PGB10402</a>

### Acronyms:

MOV: metal oxide varistor

TVS: transient voltage suppressor

ESD: electrostatic discharge



Click on the product series in the table below for more info

# Benefits of Littelfuse products in ultrasound scanners

	Technology	Function in application	Product series	Benefits	Features
1	PPTC	Protection against short circuit and overload current conditions	<a href="#">nanoSMD</a> , <a href="#">femtoSMD</a>	Offers fast response to over current events; suitable for compact portable devices	Ultra-low internal resistance; higher current holding in smallest SMD package
	Diode array	Surge and ESD protection	<a href="#">SP11xx</a> , <a href="#">SP1250</a>	Ensure safety of equipment from repetitive ESD strikes without performance degradation	Low leakage current of 100 nA; small form factor; multiple voltages available
2	Diode array	Protects touchscreen ICs from user-induced ESD events	<a href="#">SP1103</a>	Helps comply with IEC standards (61000-4-2: ±15 kV contact, ±30 kV air; 61000-4-4: 40 A (5/50 nS); enables a compact design; retains high signal integrity	Low dynamic resistance; five-channel protection in a small 0402 footprint; maintains high signal integrity
3	PPTC	Protect 5 VDC power supply from overcurrent & overtemperature	<a href="#">LoRho</a>	Offers fast response to over current events; suitable for compact portable devices	Ultra-low internal resistance; higher current holding in smallest SMD package
	Diode array	Protection of data lines against ESD	<a href="#">SP3019</a> , <a href="#">SP3400</a> , <a href="#">SP1250</a>	Clamp transient to a safe level preventing catastrophic failure; compact design	Low capacitance 0.3 pF & leakage current (0.01 µA); small form factor µDFN
4	MOSFET	Used as a switch to generate high-frequency pulse by varying the external gate resistance	<a href="#">HiPerFETs</a>	Small package allows space saving and ease of mounting; high power density	Up to 1200 V with fast intrinsic diodes; low $R_{ds(on)}$ per silicon area; high-speed switching; excellent thermal performance
	Fast recovery diodes	Rectification of high-frequency pulse	<a href="#">HIPERDYN</a>	Av avalanche voltage rated for reliable operation; soft reverse recovery for low EMI/RFI; low power dissipation	VRRM from 300, 600, and 1200 V; $I_{FAV}$ range: 6 A to 55 A; very low capacitance <15 pf
5	Polymer ESD suppressor	Protects the Wi-Fi chipset from user-induced ESD events	<a href="#">PGB10603</a> , <a href="#">PGB10402</a>	Enables compact design and low clearance between antenna and casing; retains RF signal integrity; improves system reliability	Ultra-low capacitance; compact form factor; low leakage current; fast response time



---

Featured product

# HiPerFETs™:

## N-Channel MOSFETs with Fast Intrinsic Diodes

### Problem/Solution

The HiPerFET™ is a popular Power MOSFET for both hard switching and resonant mode applications, offering low gate charge and excellent ruggedness with a fast intrinsic diode. Available in many standard industrial packages including isolated types..

### Technical resources *(Click on below icons to learn more)*



Series Page



Datasheet

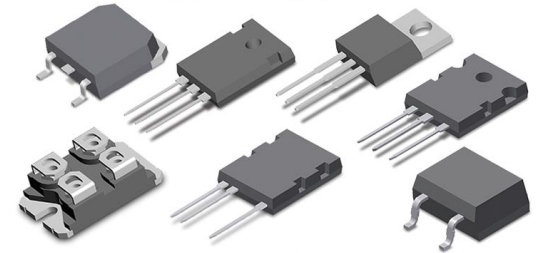


Product Catalog



### Benefits

- Higher efficiency
- High power density
- Easy to mount
- Space savings



### Features

- Low  $R_{ds(on)}$  per silicon area
- Excellent  $dV/dt$  performance
- High Speed Switching
- Fast intrinsic Rectifier

### Markets/Applications

- Switch-Mode and Resonant-Mode Power Supplies
- DC-DC Converters
- Battery Chargers
- Uninterrupted Power Supplies
- AC motor drives
- Medical
- High Speed Power Switching Applications

# Additional information can be found on [littelfuse.com](http://littelfuse.com)

Circuit Protection Selection Guide



Sensor Selection Guide



Industrial Fuses Catalog

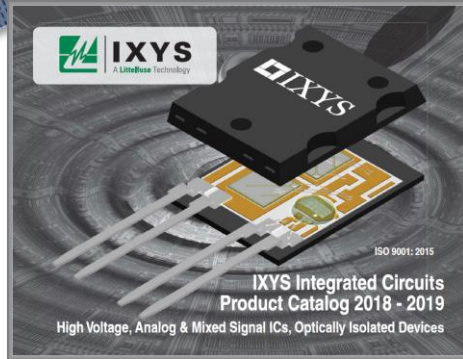


Power Semiconductor Selection Guide

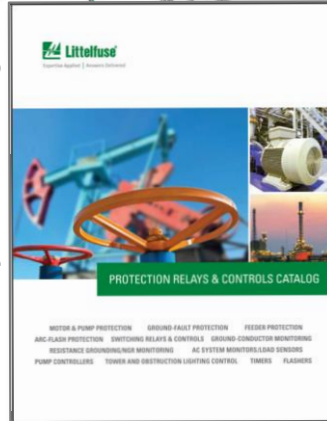


Click on images to open the catalog

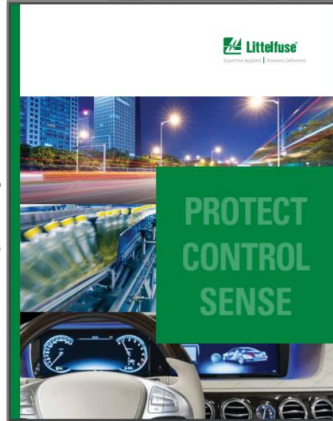
Integrated Circuits Catalog



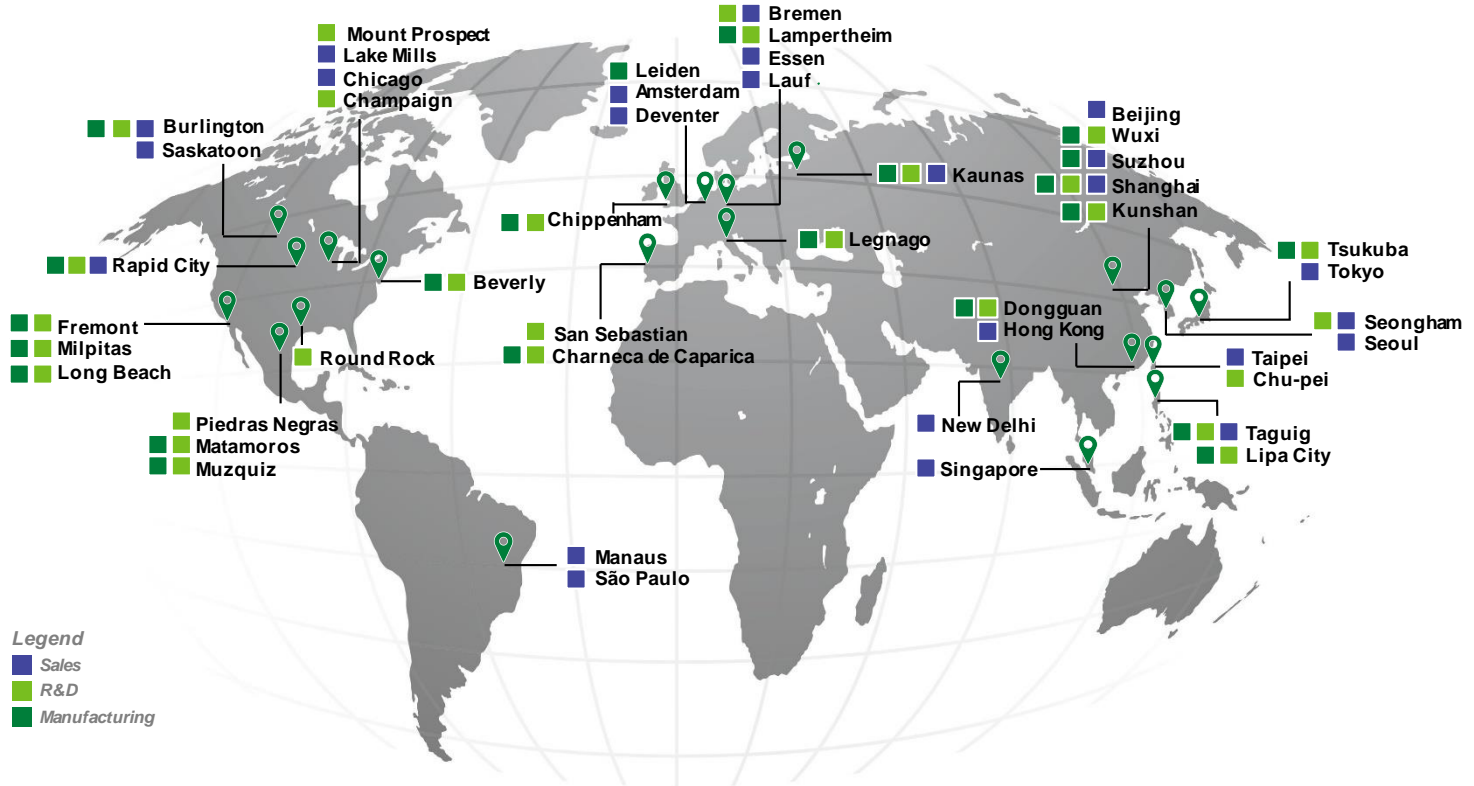
Power Relay & Control Catalog



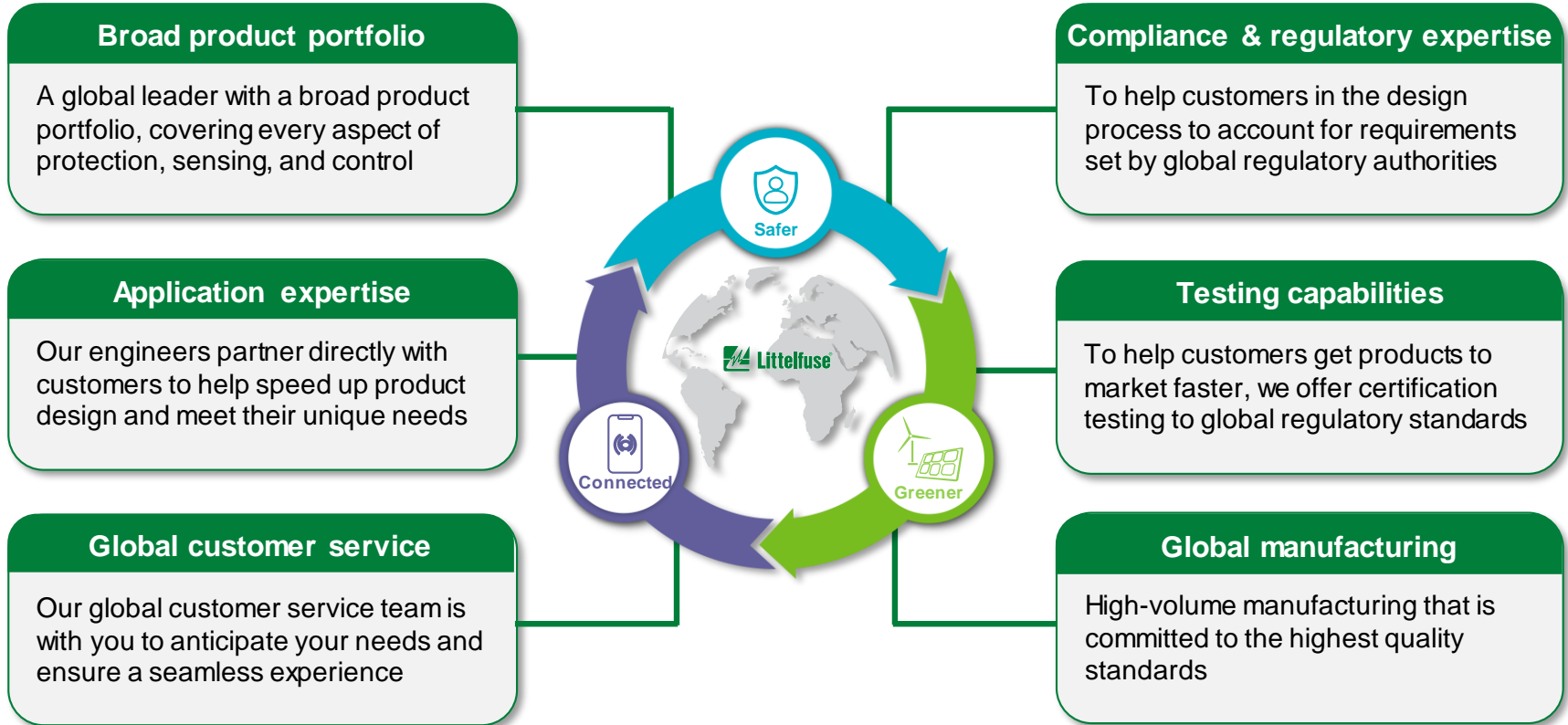
Littelfuse Capability Brochure



# Local resources supporting our global customers



# Partner for tomorrow's electronic systems





Expertise Applied | Answers Delivered



Littelfuse.com

*This document is provided by Littelfuse, Inc. ("Littelfuse") for informational and guideline purposes only. Littelfuse assumes no liability for errors or omissions in this document or for any of the information contained herein. Information is provided on an "as is" and "with all faults" basis for evaluation purposes only. Applications described are for illustrative purposes only and Littelfuse makes no representation that such applications will be suitable for the customer's specific use without further testing or modification. Littelfuse expressly disclaims all warranties, whether express, implied or statutory, including but not limited to the implied warranties of merchantability and fitness for a particular purpose, and non-infringement. It is the customer's sole responsibility to determine suitability for a particular system or use based on their own performance criteria, conditions, specific application, compatibility with other components, and environmental conditions. Customers must independently provide appropriate design and operating safeguards to minimize any risks associated with their applications and products. Read complete Disclaimer Notice at: [www.littelfuse.com/disclaimer-electronics](http://www.littelfuse.com/disclaimer-electronics).*