PRODUCT BRIEF

Small signal MOSFETs

In battery management systems and battery packs

Small signal MOSFETs are the perfect choice for battery management systems (BMS) and battery packs, owing to their exceptional characteristics such as low on-resistance, rapid switching speed, and minimal gate-to-source capacitance. These attributes render them ideal for high-current battery packs that necessitate efficient balancing circuitry, ensuring optimal performance. Moreover, small signal MOSFETs play a crucial role in expediting the balancing process in scenarios where the current supplied by the balancing IC falls short.

In BMS applications, small signal MOSFETs are widely used in protection circuitry and charge/discharge circuitry. Infineon offers a wide range of small signal MOSFETs engineered to offer high efficiency and reliability. Available in a variety of packages and voltage ratings, these MOSFETs cater to a wide spectrum of application requirements, enhancing overall flexibility and compatibility.

Small signal MOSFETs can be used in various BMS applications, including:
- Electric vehicles (LEVs, BEVs, PHEVs, …)
- Portable electronics
- Medical devices
- Power tools
- Renewable energy systems
- Robotics, drones

The low on-resistance, swift switching time, and minimal gate charge make Small signal MOSFETs an exemplary choice for integrating into battery-powered systems, elevating their performance and longevity.

For a comprehensive insight into Infineon's small signal portfolio, we invite you to explore our official website at Infineon.

Here, you will gain access to detailed product information, datasheets, and an array of technical resources, empowering you to make an informed selection tailored to your specific application needs.

Key features

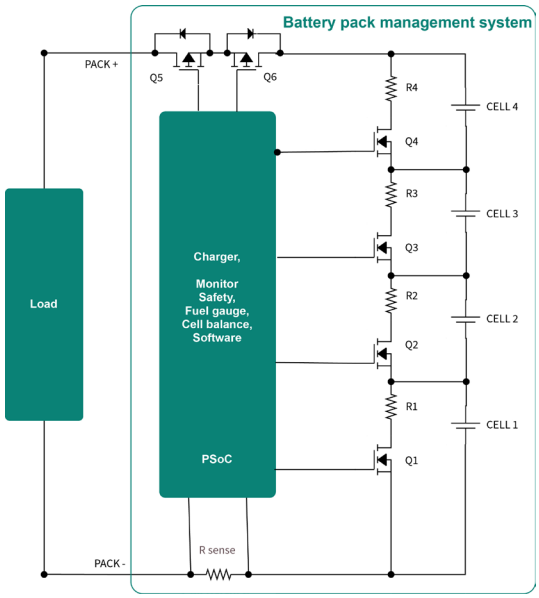
- Low on-resistance for high efficiency and reduced power losses
- Fast switching speed to reduce switching losses
- Low gate-to-source capacitance for low energy switching and improved efficiency
- High reliability for reduced thermal stress and longer lifespan
- Cost-effectiveness for overall system cost reduction

Benefits

- Increased battery life and safety
- Reduced risk of battery damage and failure
- Improved performance and efficiency of battery-powered devices
- Easy integration into existing battery-powered devices



Block diagram/schematics



Product portfolio

	Part number	Package	Voltage [V]	$R_{DS(on)}$ max, [mΩ]	OPN
N-channel	BSS806NE	SOT-23	20 V w/ESD	82m Ω @1.8 V	BSS806NEH6327XTSA1
	IRLML6244	SOT-23	20 V	27m Ω @2.5 V	IRLML6244TRPBF
	BSL806N	TSOP-6	20 V, dual	82m Ω @1.8 V	BSL806NH6327XTSA1
	IRLML0030	SOT-23	30 V	40m Ω @4.5 V	BSS308PEH6327XTSA1
P-channel	IRLML9301TRPBF	SOT-23	-30 V	103m Ω @4.5 V	IRLML9301TRPBF
	BSS308PE	SOT-23	-30 V w/ESD	130m Ω @4.5 V	BSS308PEH6327XTSA1
	ISP650P06NM	SOT-223	-60 V	65m Ω @10 V	ISP650P06NMXTSA1

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