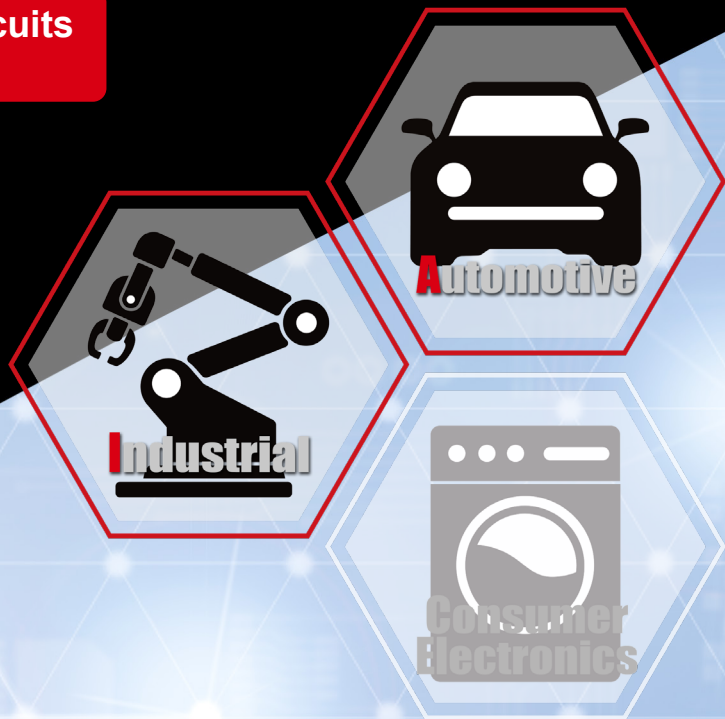


Simplifies and miniaturizes high-power power supply circuits (PFC, LLC) in automotive and industrial equipment

Compact Molded Modules with Built-in SiC MOSFETs (HSDIP20)

BSTxxx1P4K01 (750V)

BSTxxx2P4K01 (1,200V)



The BSTxxx1P4K01 (750V) and BSTxxx2P4K01 (1,200V) are molded-type modules that incorporate four and six SiC MOSFETs, respectively. All essential circuits required for power conversion in high-power applications are integrated into a compact module package, contributing to end-product miniaturization.

Features

- **Lineup ideal for configuring high-power power supply circuit topologies such as PFC and LLC circuits**

Featuring four or six 750V/1,200V SiC MOSFETs, these modules enable the development of simple, compact power supply circuits. A wide lineup in ON resistances ranging from 13mΩ to 62mΩ allows for flexible selection tailored to specific application requirements.

- **Adopting high thermal conductivity insulating materials ensures superior heat dissipation, facilitating insulation design**

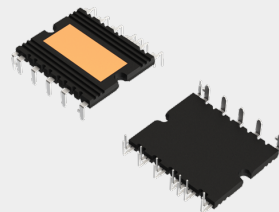
Superior heat dissipation performance vs high thermal conductivity discrete products effectively suppresses heat generation within the package.

- **Delivers higher output compared to power modules of similar size**

The combination of a high thermal conductivity package and low ON-resistance SiC MOSFETs results in 1.5x the current density compared to competitor DIP modules.



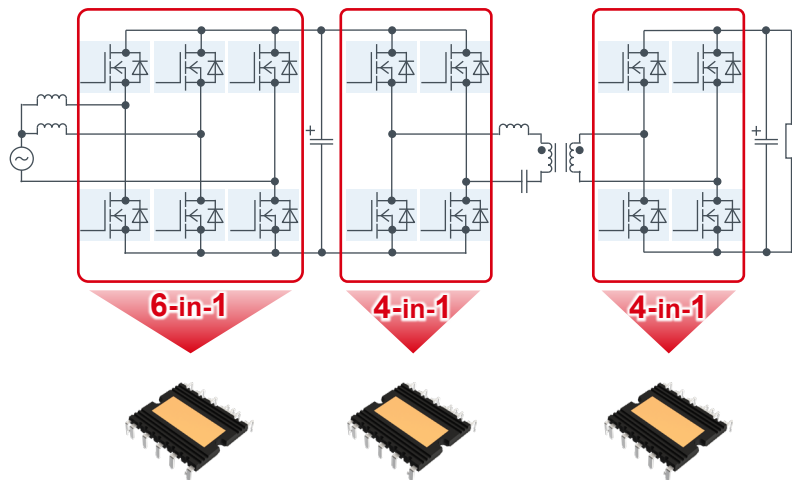
EcoSiC™ is a trademark or registered trademark of ROHM Co., Ltd.



HSDIP20
38.0×31.3×Max3.5mm

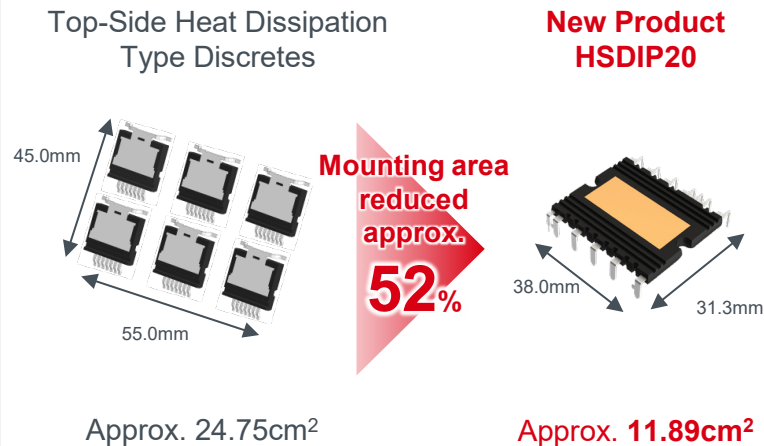
Ideal for Configuring High-Power Power Supply Circuit Topologies such as PFCs and LLCs

HSDIP20 Application Example (Two-Phase Full-Bridge PFC + LLC Converter)



Streamline PFC and LLC circuits with a comprehensive lineup of 6-in-1 and 4-in-1 modules

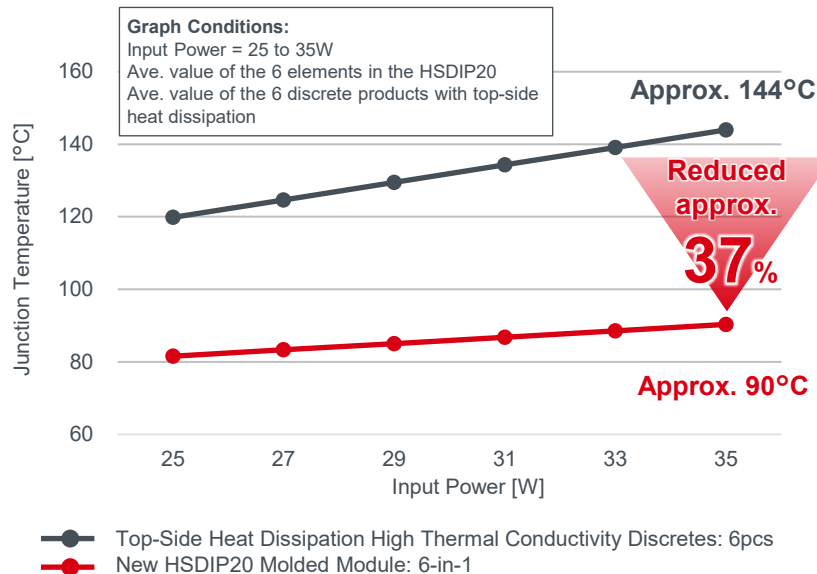
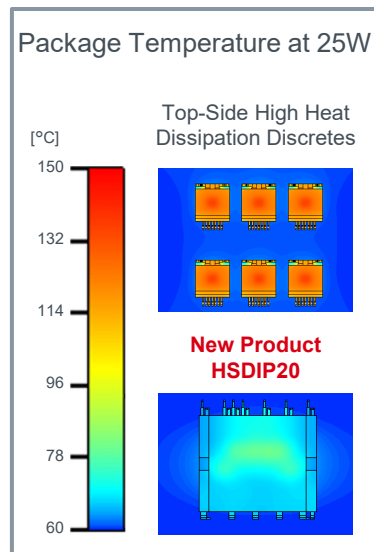
Mounting Area Comparison in a PFC Circuit



Facilitates the development of simple, compact power supply circuits

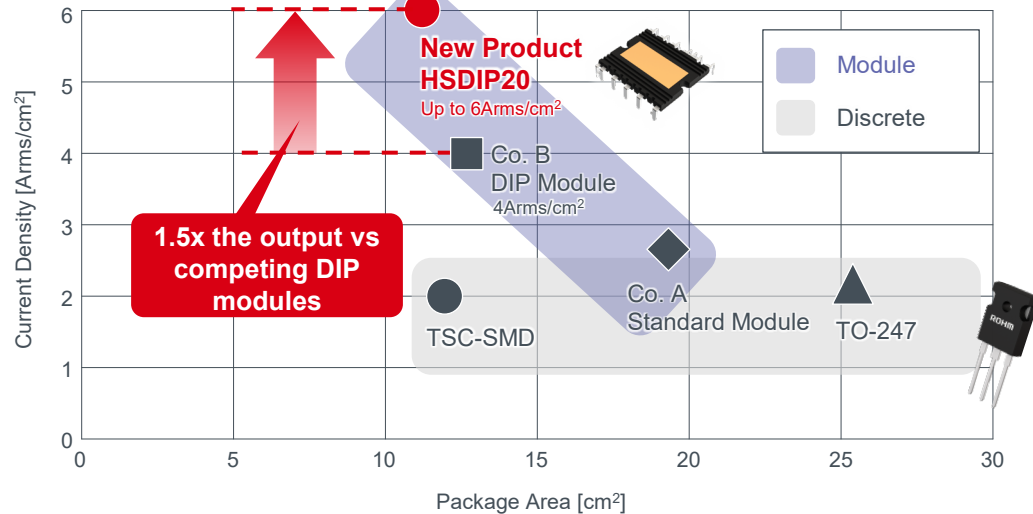
Utilizing High Thermal Conductivity Insulating Materials Provides Excellent Heat Dissipation that Facilitates Insulation Design

Comparison of Thermal Dissipation Performance vs Discrete Package



**Superior thermal dissipation performance
effectively suppresses heat generation within the package.**

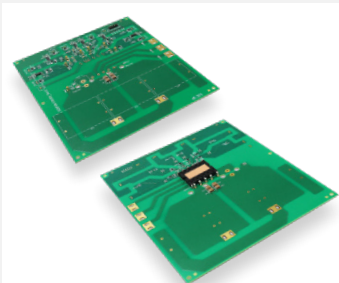
Comparison of Current Density vs Competitor Modules



Comparison with 1,200V/36mΩ or equivalent full-bridge 4-in-1 topology modules

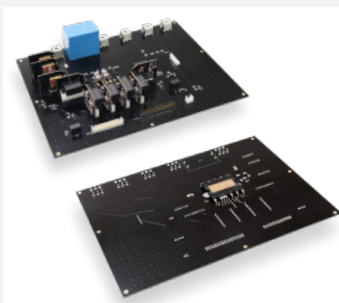
**Combining a high thermal conductivity package
with low ON-resistance SiC MOSFETs
achieves 1.5x the current density compared to competitor DIP modules**

Evaluation kit for double pulse testing



Features	<ul style="list-style-type: none">• Specifically designed for double testing of HSDIP20 power modules• Features ROHM's gate driver IC with active Miller clamp function• Includes a layout pattern for the current-sensing shunt circuit
Specifications	Vdc = 400V to 800V Vcc7: 5V (gate driver supply voltage) Vcc1-6: 18V/0V (isolated supply voltage)

Evaluation kit for 3-phase full bridge



Features	<ul style="list-style-type: none">• The 6-in-1 module enables 5kVA@50kHz operation with just a compact heat sink• Modular design simplifies verification of circuit constants• Built-in sensing functionality enables quick setup of motor drive systems
Specifications	Vdc = 400V Fc (Max) = 80kHz Output Power = 5kVA

Two ready-to-use evaluation kits available

For details, please contact a sales representative

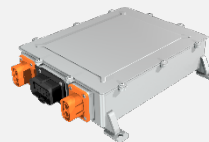
Automotive Systems

- Onboard chargers
- EV/PHEV DC-DC converters
- Electric compressors (e-Comp), etc.

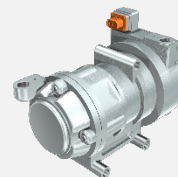
Industrial Equipment

- EV charging stations
- PV inverters, energy storage systems (ESS)
- Server supplies, motor drive, servos, and more

Onboard Chargers



Electric Compressors



EV Charging Stations



Suitable for a wide range of applications-including automotive

HSDIP20 Molded Module Package Lineup

Part No.	Topology	Circuit Diagram	Absolute Maximum Ratings (Tj= 25°C)			Automotive-Grade AQG-324	Module Package [mm]
			V _{DSS} [V]	R _{DS(on)} [mΩ]	I _D *1 [A]		
New BST91B1P4K01	4-in-1		750	13	90	YES	 HSDIP20 38.0×31.3×3.5
New BST47B1P4K01				26	47	YES	
New BST31B1P4K01				45	31	YES	
New BST70B2P4K01			1,200	18	70	YES	
New BST38B2P4K01				36	38	YES	
New BST25B2P4K01				62	25	YES	
New BST91T1P4K01	6-in-1		750	13	90	YES	
New BST47T1P4K01				26	47	YES	
New BST31T1P4K01				45	31	YES	
New BST70T2P4K01			1,200	18	70	YES	
New BST38T2P4K01				36	38	YES	
New BST25T2P4K01				62	25	YES	
New BST70M2P4K01*2				18 and 36	70 for 18mΩ*3 38 for 36mΩ*4	YES	

* 1 Tc=25°C V_{GS}=18V *2 Comprised of chips with different ON-resistance values *3 For terminals Q1 and Q4 *4 For terminals Q2, Q3, Q5, and Q6

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