Featured Products

Electronics for the Future

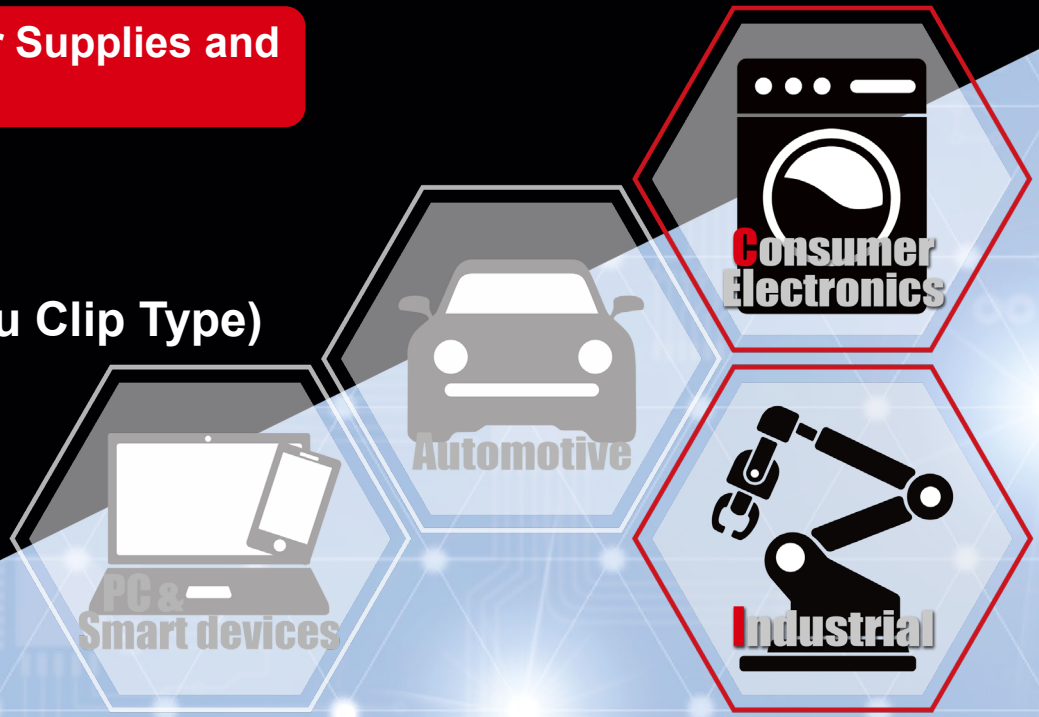
ROHM SEMICONDUCTOR

Ideal for Base Station/Server Power Supplies and Industrial/Consumer Motor Drive

Low ON-Resistance Nch Power MOSFETs (Cu Clip Type)

RS6xxxx / RH6xxxx series

(40V/60V/80V/100V/150V Breakdown Large Current series)



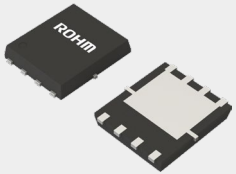
Low ON-Resistance Nch Power MOSFETs: RS6xxxx/RH6xxxx series

The RS6xxxx/RH6xxxx series are compact low-loss Nch MOSFETs featuring a Cu clip structure that contributes to high-efficiency operation, making them ideal for drive applications that operate on 24V/36V/48V power supplies.

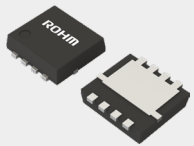
Features

- **Utilizes a Cu clip package**
  Enables high current handling capability with reduced package resistance
- **Simultaneous low ON-resistance and gate charge capacitance (trade-off relationship) minimize energy loss**
  Adopting the latest element processes along with a Cu clip achieves class-leading low ON-resistance
  Optimized element gate structure simultaneously reduces gate charge capacitance
- **Offered in the compact 3333 and 5060 package sizes**
  13-model lineup in 40V/60V/80V/100V/150V breakdown voltages (24V/36V/48V input with spikes and noise margins considered)

*ROHM April 2023 study



HSOP8
5.0×6.0×1.0mm

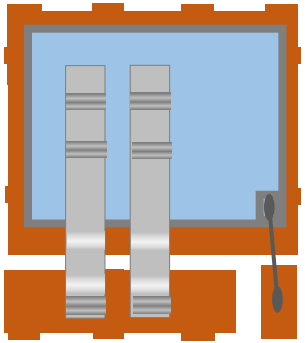


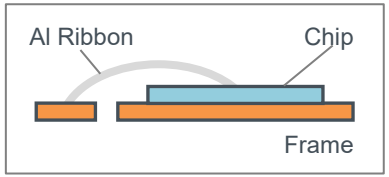
HSMT8
3.3×3.3×0.8mm

Cu Clip Structure Increases Current Capacity While Reducing Package Resistance (RS6xxxx/RH6xxxx series)

Conventional Product (Al Ribbon)

Al Ribbon Bonding

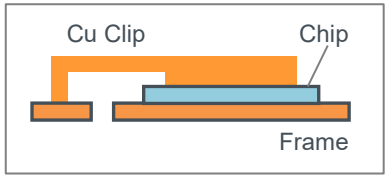




Current Capacity : 80A
Wire Resistance : 0.6mΩ
Sheet Resistance : Tens of mΩ

New Product (Cu Clip)

Cu Clip Bonding

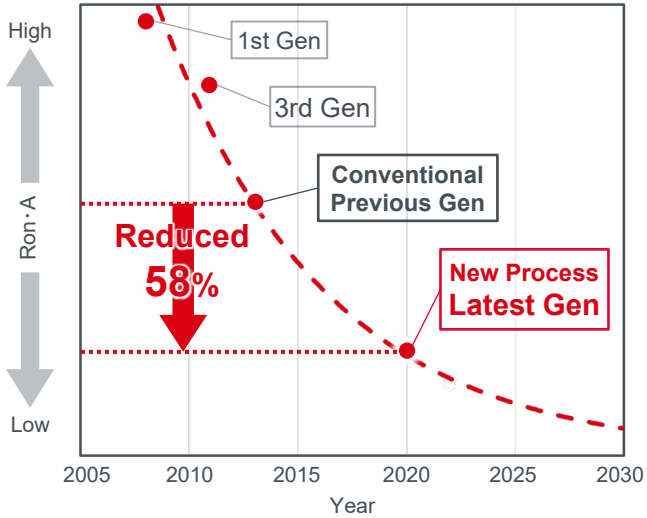


Current Capacity : 120A
Clip Resistance : 0.3mΩ
Sheet Resistance : 0mΩ

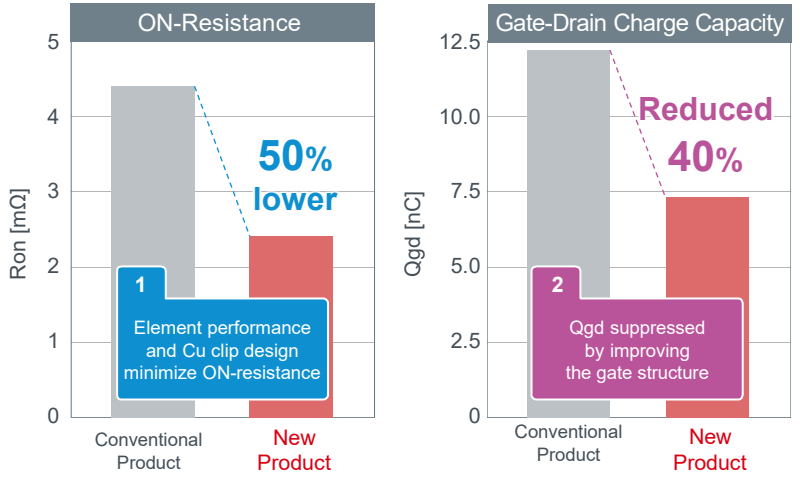
Adopting a Cu clip structure improves specifications for current capacity and package resistance

Simultaneously Achieves Low ON-Resistance and Gate Charge Capacitance (RS6xxxx/RH6xxxx series)

Adopts New Element Processes



ON-Resistance and Gate Charge Capacitance



*Comparing V＝60V HSOP8 package products

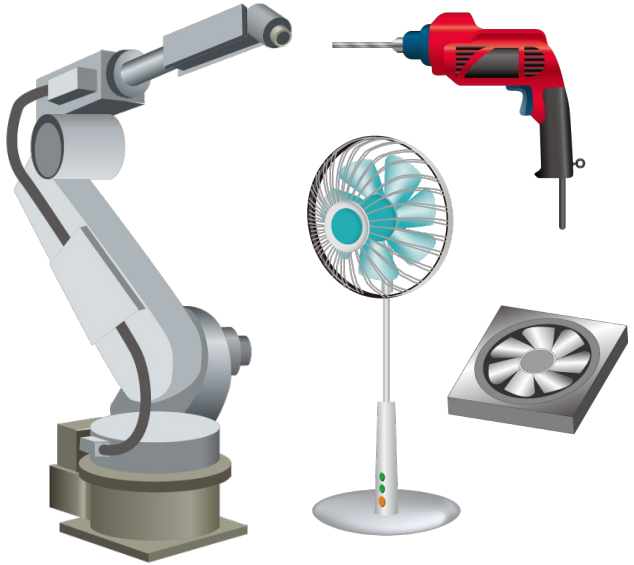
Element Ron•A → Reduced up to 58%

Simultaneously improves gate charge capacitance, which has a trade-off relationship with ON-resistance

Application Examples (RS6xxxx/RH6xxxx series)

- Power supplies for servers and base stations

- Various motor driven equipment (industrial/consumer)



Ideal for drive applications that operate on 24V/36V/48V power supplies

Low ON-Resistance Nch Power MOSFET Lineup (RS6xxxx/RH6xxxx series)

Part No.	Polarity (ch)	V_{DSS} (V)	I_D (A) T_C=25°C	$R_{DS(ON)}$ (mΩ)				Q_g (nC)		Q_{gd} (nC)	Package
				V_{GS}=10V		V_{GS}=6V	V_{GS}= 4.5V	V_{GS} = 6V	V_{GS} = 4.5V		
				Typ	Max	Max	Max	Typ	Typ	Typ	
New RS6G120BG	N	40	120	1.03	1.34	-	2.43	-	34.0	12.0	HSOP8 5.0×6.0×1.0mm
New RS6G100BG			100	2.6	3.4	-	6.5	-	11.8	4.3	
New RS6L120BG		60	120	2.1	2.7	-	4.2	-	25.0	7.3	
New RS6L090BG			90	3.6	4.7	-	7.4	-	14.0	4.1	
New RS6N120BH		80	120	2.8	3.3	4.9	-	33.0	-	10.1	
New RS6P100BH		100	100	4.5	5.9	8.7	-	29.0	-	11.7	
New RS6P060BH			60	8.2	10.6	16.0	-	16.2	-	6.3	
New RS6R060BH		150	60	16.7	21.8	26.8	-	30.0	-	12.0	
New RS6R035BH			35	32.0	41.0	50.0	-	16.2	-	6.4	
New RH6G040BG	N	40	40	2.8	3.6	-	6.5	-	11.8	4.5	HSMT8 3.3×3.3×0.8mm
New RH6L040BG		60		5.5	7.1	-	11.2	-	9.2	2.7	
New RH6P040BH		100		12.0	15.6	23.3	-	10.9	-	4.4	
New RH6R025BH		150	25	46.0	59.0	73.0	-	11.0	-	4.4	

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Click on the icon to access the product datasheet on ROHM's website.

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ROHM SEMICONDUCTOR

ROHM Co.,Ltd.

21 Saiin Mizosaki-cho, Ukyo-ku,
Kyoto 615-8585 Japan

www.rohm.com

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