

TECHSEM's Overseas Representative

As the exclusive overseas marketing partner of TECHSEM, R&D Electronics International Co., Limited takes over all the marketing and sales activities for the world market.



For more information please visit R&D webshop:

[WWW.RD-eBUSINESS.COM](http://WWW.RD-eBUSINESS.COM)

湖北台基半导体股份有限公司  
TECH SEMICONDUCTORS CO., LTD.  
No. 162 Shengli Street, Xiangyang city,  
Hubei Province, China 441021  
Tel: +86 710 3506209  
Email: [trade@tech-sem.com](mailto:trade@tech-sem.com)  
[www.tech-sem.com](http://www.tech-sem.com)



All rights reserved  
TECHSEM is not liable for the content and all information is subject to change without notice.



*Power the Future*

China-based Supplier for the Whole Product Series

**TECH SEMICONDUCTORS CO.,LTD.**

## Profile

1966, founded factory, produced diode & transistor.  
 1974, successfully produced the first thyristor in China.  
 1980, established new plant for special IC and high power transistors.  
 1988, research and develop power semiconductor modules.  
 2003, complete the privatization reform.  
 2008, founded a joint-venture company.  
 2010, IPO at Shenzhen Stock Exchange , stock code: 3000

Tech Semiconductors Co., Ltd. (TECHSEM), is a specialized manufacturer in developing, producing and selling power semiconductor devices. It is unique enterprise listed on stock exchange for power semiconductor in China.

With more than 40 years experience of semiconductor devices manufacturing, TECHSEM has two clean buildings of over 8000M<sup>2</sup>, in which 1000 M<sup>2</sup> of 100 class clean room. Over 620 staffs work in the company, of which 136 are specialized engineers (6 engineering masters, 32 senior engineers,). TECHSEM offers great advantages in technology and production capability.

TECHSEM has a perfect and effective market net covering throughout China with nearly 200 distributors and 60 sole agents. The production capacity for power semiconductor device up to two million pieces per year.

TECHSEM is pushing on the target of to be the leading competitive supplier for power semiconductors, sincerely hopes to establish trustful and honest business relationship with friends to get mutually benefit and reach a bright future.



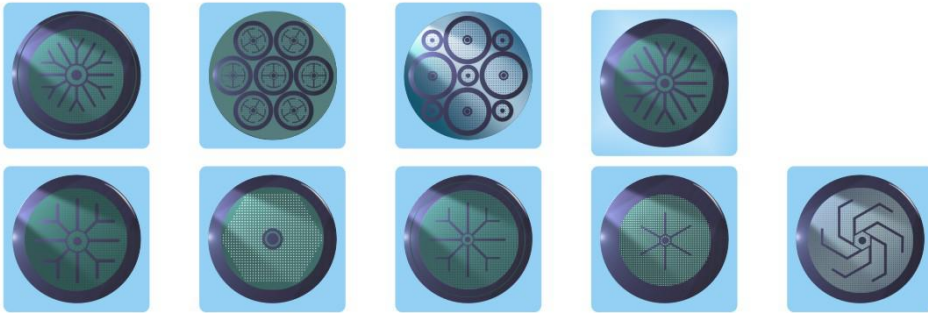
## China-based Supplier for the Whole Product Series



## Wafers

Size: 1.5 – 6 inches  
Voltage: 400 – 7200V

Wafers: phase control thyristor, fast turn-off thyristor, rectifier diode, fast recovery diode



## Chips

Size: 1.5 – 5 inches  
Current: 25 – 8000A  
Voltage: 400 – 7200V

Chips: phase control thyristor, fast turn-off thyristor, rectifier diode, fast recovery diode




## Capsule Device (Thyristors / Diodes)


Phase Control Thyristors				Code Designation
Key Parameters	Range	Features	Typical Applications	
Current	320–6400A	1. Amplifying gates 2. International standard cases 3. Hermetic metal cases with ceramic insulators 4. Capsule packages for double sided cooling	1. High power industrial and power transmission 2. DC and AC motor control 3. Controlled rectifiers 4. Soft starters for induction motors 5. AC controllers	Y 50 KK E ↳ Voltage rating code ↳ Chip type ↳ Chip diameter (mm) ↳ code for capsule devices KP: Phase Control Thyristors KK: Fast Turn-Off Thyristors KA: High Frequency Thyristors KS: BI-directional Control Thyristors ZP: Rectifier Diodes ZK: Fast Recovery Diodes DS: Reversely Switching Dynistors KM: Pulse Power Thyristors
Voltage	200–7200V			
Surge current	8–72KA			
Fast Turn-Off Thyristors				
Key Parameters	Range	Features	Typical Applications	
Current	490–4890A	1. Interdigitated amplifying gates 2. Fast turn-on and high di/dt 3. Low switching losses 4. Short turn-off time 5. Hermetic metal cases with ceramic insulators	1. Inductive heating 2. Electronic welders 3. Self-commutated inverters 4. AC motor speed control 5. General power switching applications	
Voltage	800–5000V			
Turn-off time	18–150 μS			


High Frequency Thyristors				Outline
Key Parameters	Range	Features	Typical Applications	
Current	480–1730A	1. Interdigitated amplifying gates 2. Fast turn-on and high di/dt 3. Low switching losses 4. Short turn-off time 5. Hermetic metal cases with ceramic insulators	1. Inductive heating 2. Electronic welders 3. Self-commutated inverters 4. AC motor speed control 5. General power switching applications	
Voltage	600–1600V			
Turn-off time	5–36 μS			

BI-directional Control Thyristors				Outline
Key Parameters	Range	Features	Typical Applications	
Current	520–930A	1. International standard cases 2. Hermetic metal cases with ceramic insulators 3. Capsule packages for double sided cooling	1. High power industrial and power transmission 2. DC and AC motor control 3. AC controllers 4. Soft starters for induction motors	
Voltage	500–1800V			
Surge current	5–8.8KA			

## Pulse Power Device

Non Symmetric Fast Turn-Off Thyristors				Outline
Key Parameters	Range	Features	Typical Applications	
blocking voltage	1800–2500V	1.Fast turn-on and high di/dt 2.Low switching losses	Applicable to series resonant inverter power supply	
backward voltage	200–1000V			
Surge current	30KA			

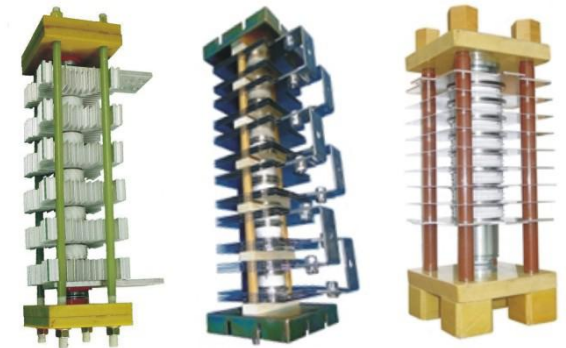
Rectifier Diodes				Outline
Key Parameters	Range	Features	Typical Applications	
Current	500–8000A	1.Low forward voltage drop 2.Reverse voltage up to 6500 v 3.Capsule type metal-ceramic packages for double sided cooling	1.All purpose high power rectifier diodes 2.High power resistance welding equipment 3.Non-controllable and half-controllable rectifiers 4.Snubber diodes	
Voltage	200–6500V			
Surge current	5–80KA			

Fast Recovery Diodes				Outline
Key Parameters	Range	Features	Typical Applications	
Current	430–4580V	1.Small recovered charge 2.Soft recovery 3.Up to 5000 v reverse voltage 4.Capsule type metal-ceramic packages for double sided cooling	1.Inverse diodes for power transistors,GTO thyristors 2.AC motor control 3.Snubber diodes and free-wheeling diodes 4.UPS	
Voltage	200–5000V			
Surge current	5–22KA			





Features		Typical Applications							Outline
1.Interdigitated amplifying gates 2.Fast turn-on and high di/dt 3.Low switching losses		Pulse power assembly							
Type	IPK tp0.3~2ms kA	VDRM kV	VRRM kV	di/dt di/dt A/μs	ability IPK kA	dv/dt V/μs	Tjm °C	Mounting Force kN	
Voltage to 4500V									
T100KPJ	140	4000	4000	1500	140	1000	90	90~113	
H100KMM	150	4200	4200	2000	150	1000	100	90~113	
H125KMM	200	4500	4500	2000	200	1000	100	90~120	
Voltage to 5200V									
H125KMN	150	5000	5000	1500	150	1000	100	90~120	
Pulse Power Assembly									
Outline									





### Features

Pulse power semiconductor devices and assembly, 10-300KA, 10-40KV, have advantages with large surge current, fast turn-on, high di/dt, etc. As per different application at customers, special pulse thyristor, super fast semiconductor devices can be designed in assembly structures which could provide whole electrical functions including trigger, protection etc. Special pulse assembly solution can be provided according to customers application conditions and requirements. Application: environment protection facility, laser facility, electromagnetic drive, etc.



## Power Modules

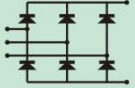
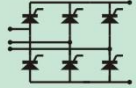
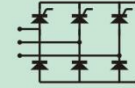
Thyristor Modules				Outline
Key Parameters	Range	Features	Typical Applications	
Current	26–1200A	1. Isolated mounting base, 2500V–3600V 2. International standard package 3. Pressure contact technology with increased power cycling capability 4. Air-cooling or water-cooling 5. Simple mounting and easy maintenance 6. Space and weight saving	1. AC/DC Motor drives 2. Various rectifiers 3. Contactless switches 4. Soft start AC motor control 5. Welding power supply 6. DC supply for PWM inverter 7. Battery DC chargers or discharge	
Voltage	600–3600V			
Surge current	0.65–34KA			
Diode Modules				
Key Parameters	Range	Features	Typical Applications	
Current	26–1200A	1. Isolated mounting base, 2500V–3600V 2. International standard package 3. Pressure contact technology with increased power cycling capability 4. Air-cooling or water-cooling 5. Simple mounting and easy maintenance 6. Space and weight saving	1. AC/DC Motor drives 2. Various rectifiers 3. Soft start AC motor control 4. (TSC)/SVC 5. Welding power supply 6. DC supply for PWM inverter	
Voltage	600–3600V			
Surge current	0.65–34KA			
Fast Turn-off Thyristor/Fast Recovery Diode Modules				
Key Parameters	Range	Features	Typical Applications	
Current	75–400A	1. Isolated mounting base, 2500V–3600V 2. International standard package 3. Pressure contact technology with increased power cycling capability 4. Simple mounting and easy maintenance 5. Space and weight saving	1. Inverter 2. Inductive heating 3. Chopper	
Voltage	600–1600V			
Turn-off time	15–35 μs			
Fast Recovery Diode Modules				
Key Parameters	Range	Features	Typical Applications	
Current	75–400A	1. Isolated mounting base, 2500V–3600V 2. International standard package 3. Pressure contact technology with increased power cycling capability 4. Simple mounting and easy maintenance 5. Space and weight saving	1. Inverter 2. Inductive heating 3. Chopper	
Voltage	600–1600V			
Recovery time	1.5–4 μs			

Single/Three phases rectification bridge modules				Outline
Key Parameters	Range	Features	Typical Applications	
Current	50–200A	1. Isolated mounting base, 2500V–3600V 2. International standard package 3. Solder joint technology with increased power cycling capability 4. Space and weight saving 5. Max junction temperature up to 150° C 6. Low forward voltage drop	1. Supplies for DC power equipment 2. DC supply for PWM inverter 3. Battery DC power supplies 4. Field supply for DC motors 5. Soft start Capacitor Charging 6. Electric drives and auxiliaries 7. Inverter welder	
Voltage	600–1800V			
Surge current	5.8–7.8KA			
Diode Modules(Non-isolated type)				
Key Parameters	Range	Features	Typical Applications	
Current	50–300A	1. Non-isolated. Mounting base as common anode or cathode terminal 2. International standard package 3. Pressure contact technology with increased power cycling capability 4. High surge current 5. Low forward voltage drop	1. Welding Power Supply 2. Various DC power supplies 3. DC supply for PWM inverter	
Voltage	800–1800V			
Surge current	1.4–10KA			
Three phases rectification bridge+ Thyristor modules				
Key Parameters	Range	Features	Typical Applications	
Current	50–200A	1. Isolated mounting base, 2500V–3600V 2. International standard package 3. Solder joint technology with increased power cycling capability 4. Simplicity of design, module and SCR rectifier bridge, small volume, light weigh	1. Supplies for DC power equipment 2. Field supply for DC motors 3. Inverter welder	
Voltage	600–1800V			
Surge current	0.73–1.85KA			
Thyristor/(Diode ) Modules(Non-isolated type)				
Key Parameters	Range	Features	Typical Applications	
Current	50–300A	1. Non-isolated. Mounting base as common anode or cathode terminal 2. International standard package 3. Pressure contact technology with increased power cycling capability 4. High surge current 5. Low forward voltage drop	1. Welding Power Supply 2. Various DC power supplies 3. DC supply for PWM inverter 4. Field supply for DC motors	
Voltage	800–1800V			
Surge current	1.2–8.3KA			

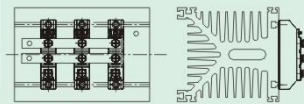
# Heatsink / Assembly

Three-phase Full-bridge Assemblies of B6 Series

Code for circuit connection


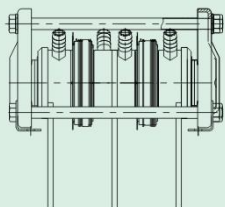
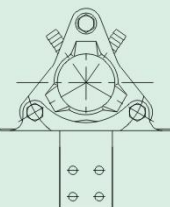




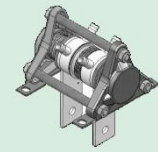
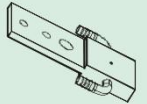
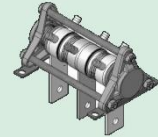

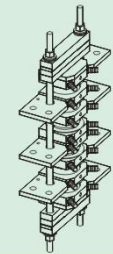
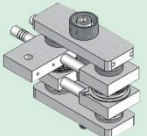


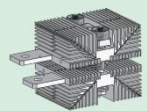
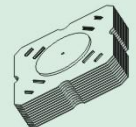
Outline



Three-phase rectifying bridge B6U series, three-phase full-control bridge B6C, three-phase half-control bridge B6HK series

Cooling method	Device type	Type -lo-VVN	Rated output current I(O/A)	Cooling condition	Device voltage
Air Cooling	Modules	B6x-xxx-xxxFA	80-200	Wind speed $\geq 6m/s$ Ambient temperature $\leq 40^{\circ}C$	100-2000
		B6x-xxx-xxxFB	200-300		
		B6x-xxx-xxxFC	300-500		
	Capsule types devices	B6x-xxx-xxxFD	400-1600		
		B6x-xxx-xxxFE	1000-2000		
Water Cooling	Capsule types devices	B6x-xxx-xxx SA(B/C/D/E)	300-4000	Flow $\geq 4L/Min$ Inlet Water temperature $\leq 40^{\circ}C$	
		B6x-xxx-xxx RSSxx	600-3500		

Cooling method	Type	Shape	Type	Shape
Water Cooling	SS11		RSS51	
	SS12			
	SS13			
	SS14			
	SS15			
	SS16			
	SS17			
	SS11BL		RSS61	
	SS12BL			
	SS13BL			
	SS14BL			
	SS15BL			
	SS16BL			
	SS17BL			
	RSS11		DSS3	
	RSS21		DSS5	
	RSS41		DSS8	
RSS31		HSS3		
Forced air cooling	SF12		Wxx	
	SF13			
	SF14			
	SF15			
	SF16			
	SF17			

Application

Quality Control & Certificate



Our commitments:

- Providing suitable products, maintaining the effective improvements;
- Reducing pollution emissions, creating a green environment;
- Ensuring safe production and the health of all employees.

Product Line Overview



Enterprise Culture