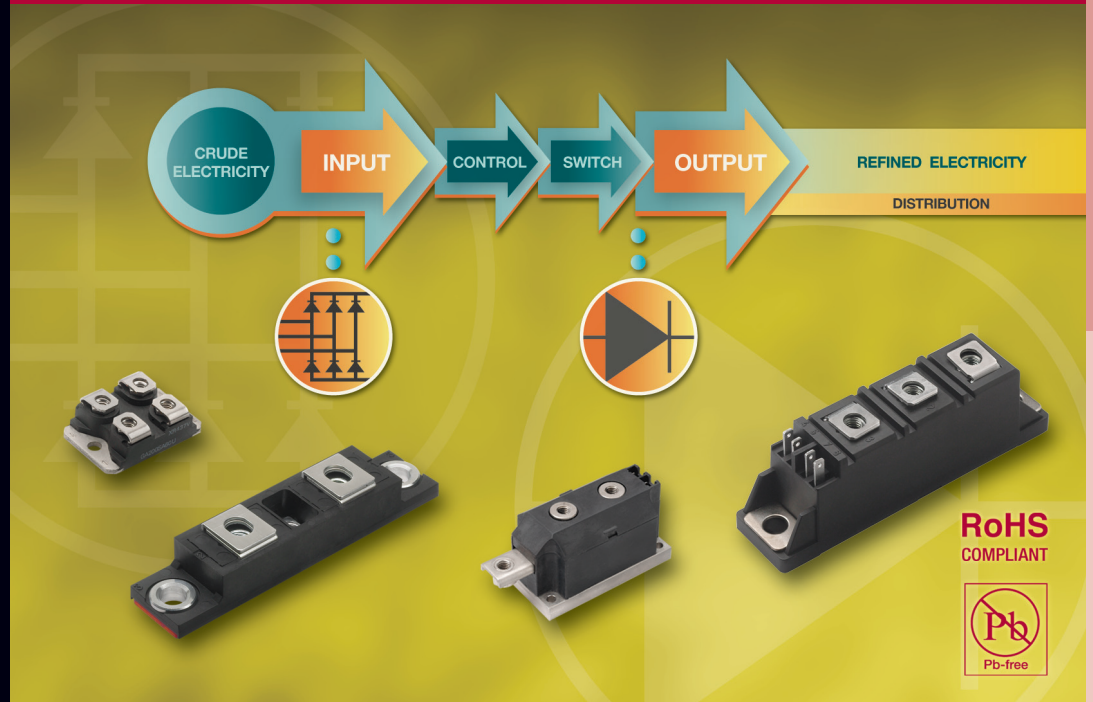




POWER DIODE AND SILICON-CONTROLLED RECTIFIER (SCR) MODULES



- SOT-227
- TO-244
- Half-Pak
- T-Module
- Add-A-Pak
- Int-A-Pak
- Magn-A-Pak
- Super Magn-A-Pak
- Map Block



POWER DIODE AND SCR MODULES

Versatile and high-efficiency power diode and SCR modules from Vishay Intertechnology feature industry-standard outlines with a choice of diode and thyristor rectifiers. Offering single-rectifying/switch component, half-bridge, and center-tapped configurations, these modules are the ideal choice for input rectification applications at either low or high voltages.

Vishay modules fulfill a single or composite function within a single package that offers a thermally conductive, but electrically isolated, path to the outside circuit. This electrical isolation between the baseplate and the active semiconductors provides a key advantage over discrete components. The modules are RoHS-compliant and meet industry standards for safety, including UL approval.

State-of-the-art compression bonding (for current ratings higher than 250 A) and ultrasonic aluminum wire bonding technologies allow the modules to achieve outstanding performance. Vishay's high-power modules are recognized throughout the world for their ruggedness, high reliability, and consistency of mechanical specifications and electrical characteristics.

Features

- Wide range of industry-standard package styles
- Direct mounting on heatsink
- Choice of rectifier and thyristor technologies
- Optimized high-voltage diode and SCR
- Fast-recovery diode modules available
- High isolation voltage (2500 V)
- RoHS-compliant
- Low thermal resistance
- Low-/high-temperature performance (-40 °C to +150 °C)
- UL approved

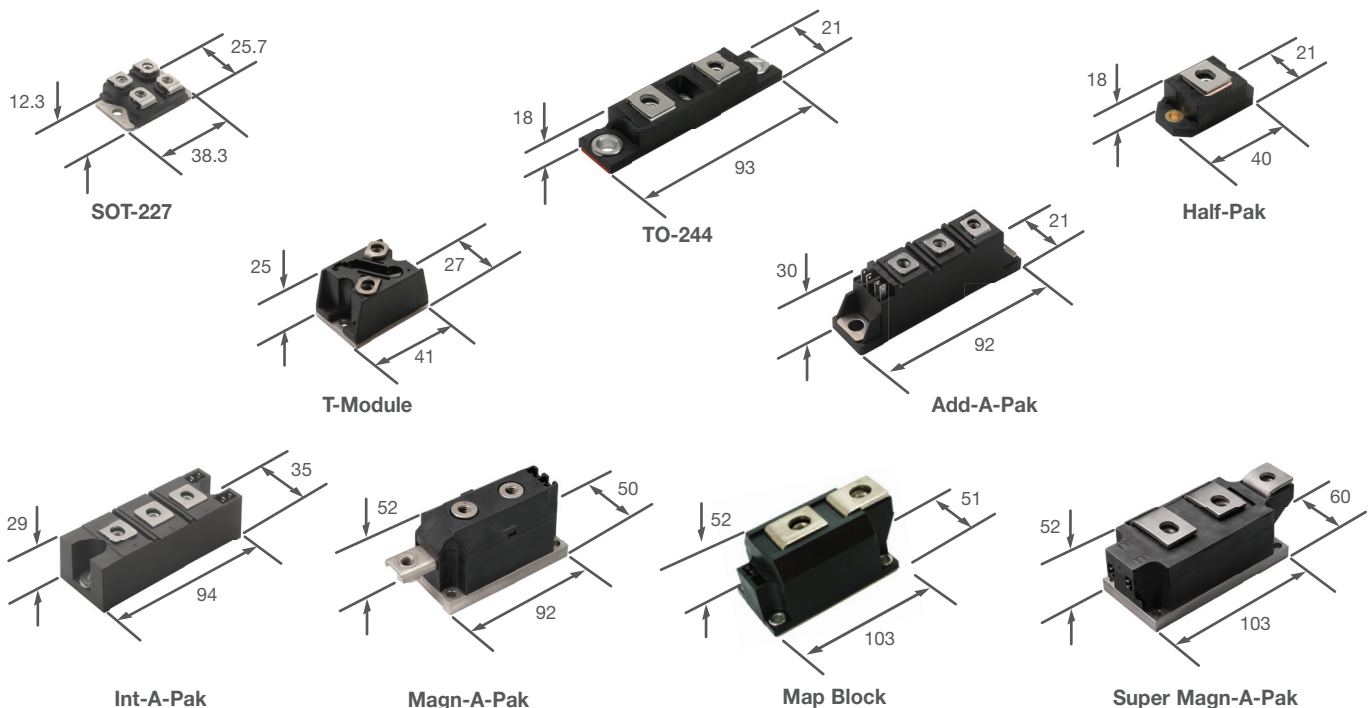
Options

- Customizable for specific application needs
- Gate and auxiliary cathode accessories available upon request

Applications

- Single- and three-phase input rectification
- Industrial welding
- Switch-mode power supplies
- Motor drives
- UPS
- Anti-parallel thyristor (AC switch)

Dimensions in Millimeters



POWER DIODE AND SCR MODULES



Modules										
Package Model	Max . Dim. LWH (mm)	Pin-out	Number of Connectors	Available Circuit Configurations	Voltage Range (V)	Current Ratings (A)	Part Number Series	Silicon Technology		
SOT-227	38.3 x 25.7 x 12.3	Screwable	4	2 Separate diodes	400-1200	80-210	UFB-UFL	Ultrafast Diode		
				Customized configuration			HFA			
				2 Separate diodes	1000	60	SA60FA100P	Fast diode		
				Tandem	600	60	UFH60GA60P	Ultrafast		
TO-244	93 x 21 x 18	Screwable	2 + Baseplate	Common cathode— not isolated	45-150	200-400	2..CNQ..-3..CNQ..-4..CNQ..	Schottky Diode		
					30	200-400	220CNQ..-440CNQ..	Schottky Diode		
					400-600	167-320	HFA..NJ..PBF	Ultrafast Diode		
					400-600	360-400	VSUD..CW..	Ultrafast Diode		
					200	400	VSUD400CW20PBF	Ultrafast Diode		
Half-Pak	40 x 21 x 18	Screwable	1 + Baseplate	Single diode cathode on base	45-150	120-240	12..NQ..-18..NQ..-24..NQ..	Schottky Diode		
					30	120-240	122NQ..-182NQ..-242NQ..	Schottky Diode		
					400	180-275	HFA..NH40PBF	Ultrafast Diode		
					200	240	VSUD200CH20PBF	Ultrafast Diode		
					600	200	VSUD200CH60PBF	Ultrafast Diode		
					400	150	VSSD150CH40PBF	Standard Diode		
T-Module	41 x 27 x 25	Screwable	Up to 3	Single SCR	400-2200	20-110	T..RIA	SCR		
				Single diode	400-1600	40-110	T..HF	Diode		
					600-1200	40-85	T..HFL	Fast Diode		
Add-A-Pak AAP	92 x 21 x 30	Screwable	Up to 7	Half bridge	400-1600	25-105	VSKT	SCR		
							VSKD	Diode		
							VSKH-VSKL	SCR-Diode		
				Common cathode	400-1600	25-105	VSKU	SCR		
							VSKC	Diode		
				Common anode	400-1600	25-105	VSKV	SCR		
							VSKJ	Diode		
				Single diode	400-1600	25-105	VSKE	Diode		
				Half bridge	30-150	100-440	VSKDS	Schottky Diode		
				Common cathode	30-150	100-440	VSKCS	Schottky Diode		
Common anode	30-150	100-440	VSKJS	Schottky Diode						
Half bridge	400-600	360-400	VSKDU	Ultrafast Diode						
Int-A-Pak IAP	94 x 35 x 29	Screwable	Up to 7	Half bridge	400-1600	130-230	VSKT	SCR		
							VSKD	Diode		
							VSKH-VSKL	SCR-Diode		
				Common cathode	400-1600	130-230	VSKU	SCR		
							VSKC	Diode		
				Common anode	400-1600	130-230	VSKV	SCR		
							VSKJ	Diode		
				Single diode	400-1600	130-230	VSKE	Diode		
				Half bridge	600	300	VSKDU300..	Ultrafast Diode		
				Common cathode	600	300-330	VSKCU300..	Ultrafast Diode		
Half bridge	1200	160	VSKDU162	Ultrafast Diode						
Magn-A-Pak MAP	92 x 50 x 52	Screwable	Up to 7	Half bridge	400-2000	170-320	VSKT	SCR		
							800-1200	180-200	VSKTF	SCR fast
							400-2000	170-320	VSKD	Diode
							400-2500	240	VSKDL	Diode Fast
							400-2000	170-320	VSKH-VSKL-VSKL	SCR-Diode
							800-1200	180-200	VSKHF..-VSKLF..	SCR fast-Diode Fast
				Common cathode	400-2000	170-320	VSKU	SCR		
							VSKC	Diode		
							800-1200	180-200	VSKUF	SCR fast
				Common anode	400-2500	240	VSKCL	Diode Fast		
							400-2000	170-320	VSKV	SCR
							VSKJ	Diode		
							800-1200	180-200	VSKVF	SCR fast
							400-2500	240	VSKJL	Diode Fast
							400-2000	170-320	VSKE	Diode
Single diode	400-2500	240	VSKEL	Diode Fast						
			VSKT	SCR						
			VSKD	Diode						
Super Magn-A-Pak SMAP	149 x 60 x 52	Screwable	Up to 7	Half bridge	400-2000	430-600	VSKDL	Fast Diode		
							1600-2500	450	VSKDL	Fast Diode
							400-2000	430-600	VSKH-VSKL	SCR-Diode
MAP Block	103 x 51 x 52	Screwable	Up to 4	Single SCR switch	400-800	500	VSKS500-..PBF	SCR		



POWER DIODE AND SCR MODULES

Configuration	Voltage (V)	Current Rating (A)	Recovery	Package										
				SOT-227	TO-244	Half-Pak	T-Module	Add-A-Pak	Int-A-Pak	Magn-A-Pak	Super Magn-A-Pak	Map Block		
Single Diode	30	120	Schottky			122NQ-030PBF		AAP GEN VII						
		180		182NQ-030PBF										
		240		242NQ-030PBF										
	45	120	Schottky			120NQ-045PBF								
				180	121NQ-045PBF									
				240	180NQ-045PBF									
		100	180	Schottky			240NQ-045PBF							
	240				241NQ-045PBF									
	240				123NQ-100PBF									
	150	240	Ultrafast			183NQ-100PBF								
				240	243NQ-100PBF									
				240	125NQ-150PBF									
	200-1600	200	Standard			245NQ-150PBF								
						249NQ-150PBF								
						VSUD200-CH20PBF								
						VSUD200-CH60PBF								
							T40HF...							
								VSKE56/..						
								T70HF...	VSKE71/..					
								T85HF...	VSKE91/..					
							T110HF...							
							VSSD150-CH40PBF							
									VSKE166/..					
									PBF					
									VSKE196/..					
						PBF								
						VSKE236/..								
						PBF								
							VSKE250-..							
							VSKE270-..							
							VSKE320-..							
	2200	20	Standard											
	600-2500	240	Standard				T20HF220							
	800-2000	600	Standard											
Single Thyristor	400-1200	50	Standard				T50RIA...							
		70		T70RIA...										
		90		T90RIA...										
	400-800	500	Standard									VSKS500-..		

Key: Released In Development

POWER DIODE AND SCR MODULES



Configuration	Voltage (V)	Current Rating (A)	Recovery	Package									
				SOT-227	TO-244	Half-Pak	T-Module	Add-A-Pak	Int-A-Pak	Magn-A-Pak	Super Magn-A-Pak	Map Block	
Half-Bridge Diodes	30	110	Schottky					VSKDS-220/030					
		220						VSKDS-440/030					
	45	100	Schottky					VSKDS-201/045					
		150						VSKDS-301/045					
		200						VSKDS-401/045					
	60	100	Schottky					VSKDS-208/060					
		150						VSKDS-308/060					
		200						VSKDS-408/060					
	100	100	Schottky					VSKDS-203/100					
		150						VSKDS-303/100					
		200						VSKDS-403/100					
	150	100	Schottky					VSKDS-209/150					
		150						VSKDS-309/150					
		200						VSKDS-409/150					
	400–1600	56	Standard					VSKD56/..					
		70						VSKD71/..					
		90						VSKD91/..					
		160							VSKD166/- ..PBF				
190								VSKD196/- ..PBF					
230								VSKD236/- ..PBF					
250									VSKD250-..				
270							VSKD270-..						
320							VSKD320-..						
600–2500	240	Fast						VSKDL240-..					
800–2000	600	Standard								VSKD600-..			
1600–2500	460	Fast								VSKDL450-..			
Up to 1200	100	Ultrafast						VSKDU162/- 12PBF					
Up to 600	300	Ultrafast						VSKDU300/- 06PBF					
Half Bridge, Fully Controlled	400–1600	25	Standard					VSKT26/..					
		40						VSKT41/..					
		56							VSKT56/..				
		70							VSKT71/..				
		90							VSKT91/..				
		105							VSKT105/..				
	130							VSKT136/- ..PBF					

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POWER DIODE AND SCR MODULES

Configuration	Voltage (V)	Current Rating (A)	Recovery	Package									
				SOT-227	TO-244	Half-Pak	T-Module	Add-A-Pak	Int-A-Pak	Magn-A-Pak	Super Magn-A-Pak	Map Block	
Half Bridge, Fully Controlled	400–1600	140	Standard						VSKT142/..PBF				
		160							VSKT162/..PBF				
		170								VSKT170-..			
		230								VSKT230-..			
		250								VSKT250-..			
	800–1200	180	Fast							VSKTF180-..			
		200								VSKTF200-..			
	800–2000	500	Standard									VSKT500-..	
		570										VSKT550-..	
												VSKT570-18	
Half Bridge, Positive-Controlled	400–1600	25	Standard					VSKH26/..					
		40						VSKH41/..					
		56						VSKH56/..					
		70						VSKH71/..					
		90						VSKH91/..					
		105						VSKH105/..					
		130							VSKH136/..PBF				
		140							VSKH142/..PBF				
		160							VSKH162/..PBF				
		170								VSKH170-..			
	230							VSKH230-..					
	250							VSKH250-..					
	800–2000	500									VSKH500-..		
Half Bridge, Negative Controlled	400–1600	25	Standard					VSKL26/..					
		40						VSKL41/..					
		56						VSKL56/..					
		70						VSKL71/..					
		90						VSKL91/..					
		105						VSKL105/..					
		130							VSKL136/..PBF				
		140							VSKL142/..PBF				
		160							VSKL162/..PBF				
		170								VSKL170-..			
	230							VSKL230-..					
	250							VSKL250-..					
	800–1200	180	Fast							VSKTL180-..			
200									VSKTL200-..				
800–2000	500	Standard									VSKL500-..		

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POWER DIODE AND SCR MODULES



Configuration	Voltage (V)	Current Rating (A)	Recovery	Package								
				SOT-227	TO-244	Half-Pak	T-Module	Add-A-Pak	Int-A-Pak	Magn-A-Pak	Super Magn-A-Pak	Map Block
Common Cathode Diodes	30	220	Schottky		220CNQ-030PBF			VSKCS-220/030				
		440			440CNQ-030PBF			VSKCS-440/030				
	45	200	Schottky		200CNQ-045PBF							
					201CNQ-045PBF			VSKCS-201/045				
		300			300CNQ-045PBF							
					301CNQ-045PBF			VSKCS-301/045				
	60	400	Schottky		400CNQ0-45PBF							
		200					VSKCS-401/045					
		300					VSKCS-208/060					
	100	200	Schottky					VSKCS-308/060				
							VSKCS-408/060					
				400		203CNQ-100PBF			VSKCS-203/100			
	150	300	Schottky		303CNQ-100PBF			VSKCS-303/100				
					403CNQ-100PBF			VSKCS-403/100				
				400		209CNQ-150PBF			VSKCS-209/150			
	400-600	200	Schottky					VSKCS-309/150				
					409CNQ-150PBF			VSKCS-409/150				
		300	Ultrafast		VSUD400-CW20							
					HFA140NJ-60CPBF							
					HFA210NJ-60CPBF							
					HFA240NJ-40CPBF							
					HFA280NJ-60CPBF							
									VSKDU300/04PBF			
									VSKDU300/06PBF			
				HFA320NJ-40CPBF								
320												
330						VSKCU330/06PBF						
360												
400												

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POWER DIODE AND SCR MODULES

Configuration	Voltage (V)	Current Rating (A)	Recovery	Package								
				SOT-227	TO-244	Half-Pak	T-Module	Add-A-Pak	Int-A-Pak	Magn-A-Pak	Super Magn-A-Pak	Map Block
Common Cathode Diodes	400–1600	56	Standard					VSKC56/..				
		70					VSKC71/..					
		90					VSKC91/..					
		130						VSKC166/.. PBF				
		140						VSKC196/.. PBF				
		160						VSKC196/.. PBF				
		250							VSKC250-..			
		270							VSKC270-..			
		320								VSKC320-..		
Thyristor Common Cathode	400–1600	25	Standard					VSKC320-..				
		40					VSKC320-..					
		56					VSKU56/..					
		70					VSKU71/..					
		90					VSKU91/..					
		105					VSKU105/..					
		130						VSKU136/.. PBF				
		140						VSKU142/.. PBF				
	160					VSKU162/.. PBF						
	800–1200	180	Fast							VSKU170-..		
		200							VSKU230-..			
										VSKU250-..		
										VSKUF180-..		
									VSKUF200-..			
Common Anode Diodes	30	440	Schottky					VSKJS440- /030				
		100					VSKJS403- /100					
		150					VSKJS209- /150					
	400–1600	56	Standard					VSKJ56/..				
		70					VSKJ71/..					
		90					VSKJ91/..					
		130						VSKJ166/.. PBF				
		140						VSKJ196/.. PBF				
		160						VSKJ236/.. PBF				
		250							VSKJ250-..			
	270						VSKJ270-..					
	320							VSKJ320-..				
	600–2500	240	Fast							VSKJL240-..		

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POWER DIODE AND SCR MODULES












Configuration	Voltage (V)	Current Rating (A)	Recovery	Package								
				SOT-227	TO-244	Half-Pak	T-Module	Add-A-Pak	Int-A-Pak	Magn-A-Pak	Super Magn-A-Pak	Map Block
Thyristor Common Anode	400-1600	25	Standard					VSKV26/..				
		40					VSKV41/..					
		56					VSKV56/..					
		70					VSKV71/..					
		90					VSKV91/..					
		105					VSKV105/..					
		130							VSKV136/.. PBF			
		140							VSKV142/.. PBF			
		160							VSKV162/.. PBF			
		170								VSKV170-..		
230							VSKV230-..					
250							VSKV250-..					
800-1200	200	Fast						VSKVF200-..				
2 Separate Diodes, Parallel Pin-out	400-1200	60	Ultrafast	UFB60-FA..P								
				HFA60-FA120P								
				UFL60-FA..P								
		75		HFA120-FA60P								
				HFA120-FA120P								
		80		HFA80-FA120P								
		120		UFB120-FA..P								
2 Separate Diodes - Parallel Pin-out	200	60	Ultrafast	UFB60-FA20P								
		120		UFB120-FA20P								
		200		UFB200-FA20P								
	400	60	Ultrafast	UFB60-FA40P								
		120		UFB120-FA40P								
		200		UFB200-FA40P								
		210		UFB21-0FA40P								
	200	UFX200-FA40P										
	600	60	Ultrafast	UFL60-FA60P								
				UFB60-FA60P								

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POWER DIODE AND SCR MODULES

Configuration	Voltage (V)	Current Rating (A)	Recovery	Package									
				SOT-227	TO-244	Half-Pak	T-Module	Add-A-Pak	Int-A-Pak	Magn-A-Pak	Super Magn-A-Pak	Map Block	
2 Separate Diodes Parallel Pin-out	600	120	Ultrafast										
				UFL120-FA60P									
		200		UFB120-FA60P									
		200		UFL200-FA60P									
		60		UFB200-FA60P									
				UFH60F A60P									
2 Separate Diodes, Parallel Pin-out, Tandem Configuration	600	60	Ultrafast	UFH60 GA60P									
2 Separate Diodes, Parallel Pin-out - Not Isolated	600	200	Ultrafast	UFL200-CB60P									
	400	200	Ultrafast	UFB200-CB40P									
2 Separate Diodes - Parallel Pin-out	600	120	Ultrafast	HFA120-FA60P									
		60	Ultrafast	HFA60-FA120P									
	280	HFA80-FA120P											
	1200	120		HFA120-FA120P									
	200	HFA200-FA120P											
2 Separate Diodes, Antiparallel Pin-out	1200	60	Ultrafast	HFA60-EA120P									

Key: Released In Development



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