



New Product Announcement

DSCxxA065

DSCxx120

First 650V and 1200V SiC Schottky Barrier Diodes Improve Efficiency in High-Power Systems

Our wide-bandgap Silicon Carbide (SiC) Schottky Barrier Diodes (SBD) consist of two families:

- DIODES™ DSCxxA065 series, rated 650V 4A to 10A
- DIODES™ DSCxx120 series, rated 1200V 2A to 10A

Both are suitable for use in high-efficiency AC-DC, DC-DC, and DC-AC conversion applications including photovoltaic inverters, uninterruptible power supplies, industrial motor drives, and offline applications requiring power factor correction (PFC).

Unlike silicon-based fast-recovery rectifiers, these SiC devices have negligible switching losses due to their low capacitive charge (Q_C). This makes them suitable for high-speed switching applications, benefitting circuit designs with increased power density and reduced overall solution size.

Their low forward voltage (V_F) minimizes conduction losses and further increases overall power efficiency.

The device's lower heat dissipation reduces cooling component budgets and improves reliability.

The DSCxxA065 and DSCxx120 series include three package options: surface mount TO252-2, through-hole TO220AC, and ITO220AC.

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The DIODES™ Advantage

SiC SBDs minimize losses to raise system power efficiency and reduce costs.

- **Wide Bandgap, Low Loss**
Improves efficiency in high-power applications
- **High-Switching Speeds**
Increases power density and reduces system size
- **High Temperature (175°C) Operation**
Improves reliability in harsh environments
- **Soft-Switching Behavior Reduces EMI**
Reduces passive component count
- **Forward Voltage Positive Temperature Coefficient**
Simplifies operational stability, allows paralleling
- **High Surge Current Capability**
Increases robustness and reliability

Applications

- AC-DC PSUs
- DC-DC inverters
- Solar inverters
- PCs and server PSUs
- Data centers
- Telecom devices
- UPS systems
- Motor drives

Circuit Functions

- PFC boost diodes
- Reverse-polarity protection
- Free-wheeling diodes
- Full wave bridges
- Vienna bridgeless circuits

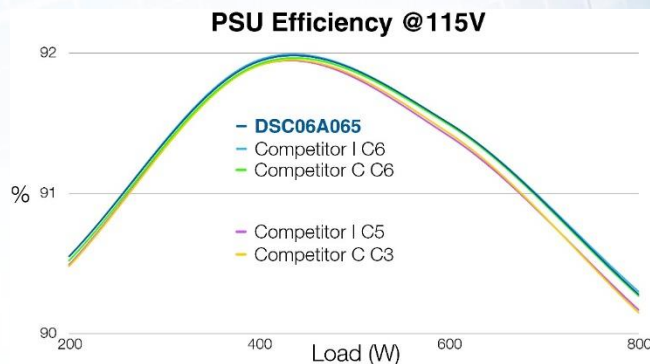
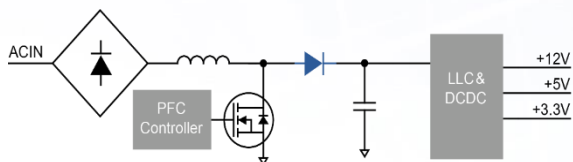


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Typical Application



PFC Boost Converter Diode in SMPSU

Product Portfolio

Part Number	V _{RRM}	I _o	V _F @ T _A = 25°C		I _R @ T _A = 25°C	I _R @ T _A = 175°C	I _{FSM}	Q _C Typ	Package
	V	A	Typ	Max	Typ	Typ	A	nC	
			V	V	µA	µA			
DSC04A065D1	650	4	1.32	1.5	1.6	124	29	12	TO252-2 (Type WX)
DSC04A065			1.32	1.5	1.1	109	29	12	TO220AC (Type WX)
DSC04A065FP			1.32	1.5	1.4	117	29	12	ITO220AC (Type WX-NC)
DSC06A065D1		6	1.32	1.5	0.5	107	38	16	TO252-2 (Type WX)
DSC06A065			1.32	1.5	0.4	102	38	16	TO220AC (Type WX)
DSC06A065FP			1.32	1.5	0.7	132	38	16	ITO220AC (Type WX-NC)
DSC08A065D1		8	1.36	1.5	1.5	158	47	19	TO252-2 (Type WX)
DSC08A065			1.36	1.5	1.52	160	47	19	TO220AC (Type WX)
DSC08A065FP			1.36	1.5	1.5	160	47	19	ITO220AC (Type WX-NC)
DSC10A065D1		10	1.35	1.5	2.3	193	55	23	TO252-2 (Type WX)
DSC10A065			1.35	1.5	1.6	175	55	23	TO220AC (Type WX)
DSC02120D1		1,200	2	1.41	1.7	10.7	156	24	15
DSC02120	1.39			1.7	11.7	157	24	10	TO220AC (Type WX)
DSC02120FP	1.39			1.7	11.4	153	24	10	ITO220AC (Type WX-NC)
DSC05120D1	5		1.43	1.7	42.7	416	60	20	TO252-2 (Type WX)
DSC05120			1.38	1.7	39.5	387	60	18	TO220AC (Type WX)
DSC05120FP			1.42	1.7	41.5	400	60	18	ITO220AC (Type WX-NC)
DSC10120D1	10		1.43	1.7	6.6	162	120	32	TO252-2 (Type WX)
DSC10120			1.41	1.7	6.9	140	120	39	TO220AC (Type WX)



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Ordering Information

Orderable Part Number	Package	Packing	
		Quantity	Carrier
DSC04A065D1-13	TO252-2 (Type WX)	2,500 Pieces	Tape & Reel
DSC04A065	TO220AC (Type WX)	50 Pieces	Tube
DSC04A065FP	ITO220AC (Type WX-NC)	50 Pieces	Tube
DSC06A065D1-13	TO252-2 (Type WX)	2,500 Pieces	Tape & Reel
DSC06A065	TO220AC (Type WX)	50 Pieces	Tube
DSC06A065FP	ITO220AC (Type WX-NC)	50 Pieces	Tube
DSC08A065D1-13	TO252-2 (Type WX)	2,500 Pieces	Tape & Reel
DSC08A065	TO220AC (Type WX)	50 Pieces	Tube
DSC08A065FP	ITO220AC (Type WX-NC)	50 Pieces	Tube
DSC10A065D1-13	TO252-2 (Type WX)	2,500 Pieces	Tape & Reel
DSC10A065	TO220AC (Type WX)	50 Pieces	Tube
DSC02120D1	TO252-2 (Type WX)	2,500 Pieces	Tape & Reel
DSC02120	TO220AC (Type WX)	50 Pieces	Tube
DSC02120FP	ITO220AC (Type WX-NC)	50 Pieces	Tube
DSC05120D1	TO252-2 (Type WX)	2,500 Pieces	Tape & Reel
DSC05120	TO220AC (Type WX)	50 Pieces	Tube
DSC05120FP	ITO220AC (Type WX-NC)	50 Pieces	Tube
DSC10120D1	TO252-2 (Type WX)	2,500 Pieces	Tape & Reel
DSC10120	TO220AC (Type WX)	50 Pieces	Tube