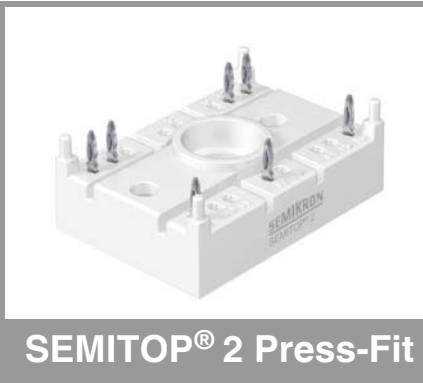


SK20KDD12SCp



SiC Bridge Rectifier

SK20KDD12SCp

Features*

- 1200V SiC Schottky diodes
- High frequency rectifier
- Smart pinout to ease parallel or series modules connection
- Compact design
- One screw mounting module
- Fully compatible with other SEMISTOP® Press-Fit types
- Improved thermal performance by aluminum oxide substrate
- Ultra Low inductance design
- UL recognized, file no. E63532

Typical Applications

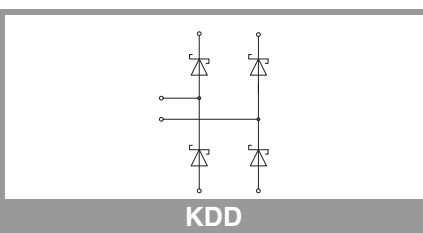
- Solar inverter
- UPS
- Power Supply

Absolute Maximum Ratings				
Symbol	Conditions		Values	Unit
Diode 1				
V _{RRM}	T _j = 25 °C		1200	V
I _F	P12	T _s = 25 °C	19	A
	T _j = 175 °C	T _s = 70 °C	16	A
I _F	HPTP / HP-PCM	T _s = 25 °C	22	A
	T _j = 175 °C	T _s = 70 °C	18	A
I _{FSM}	8.3 ms, sin 180°,		33	A
i ² t	8.3 ms, sin 180°, T _j = 150 °C		4	A ² s
T _j			-40 ... 175	°C

Absolute Maximum Ratings			
Symbol	Conditions	Values	Unit
Module			
I _{t(RMS)}	ΔT _{terminal} at PCB joint = 30 K, per pin	35	A
T _{stg}	module without TIM	-40 ... 125	°C
V _{isol}	AC, sinusoidal, t = 1 min	2500	V

Characteristics						
Symbol	Conditions		min.	typ.	max.	Unit
Diode 1						
V _F	I _F = 10 A	T _j = 25 °C		1.40	1.60	V
	chiplevel	T _j = 150 °C		1.80	2.10	V
V _{F0}	chiplevel	T _j = 25 °C		0.95	1.05	V
		T _j = 150 °C		0.80	0.90	V
r _F	chiplevel	T _j = 25 °C		45	55	mΩ
		T _j = 150 °C		100	120	mΩ
C _j	V _R = 800 V, f = 1 MHz, T _j = 25 °C			0.042		nF
Q _c	V _R = 800 V, di/dt _{off} = 500 A/μs, T _j = 25 °C			0.034		μC
R _{th(j-s)}	per Diode, P12 (Reference)			2.25		K/W
R _{th(i-s)}	per Diode, HPTP			1.8		K/W

Characteristics					
Symbol	Conditions	min.	typ.	max.	Unit
Module					
M _s	to heatsink	1.8		2	Nm
w	weight		19		g



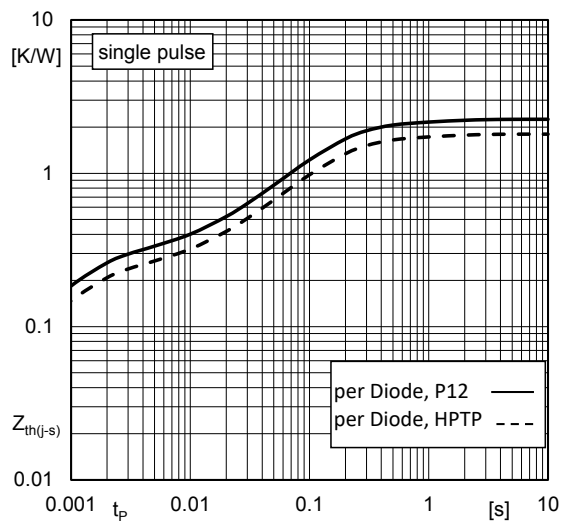


Fig. 1: Transient thermal impedance vs. time

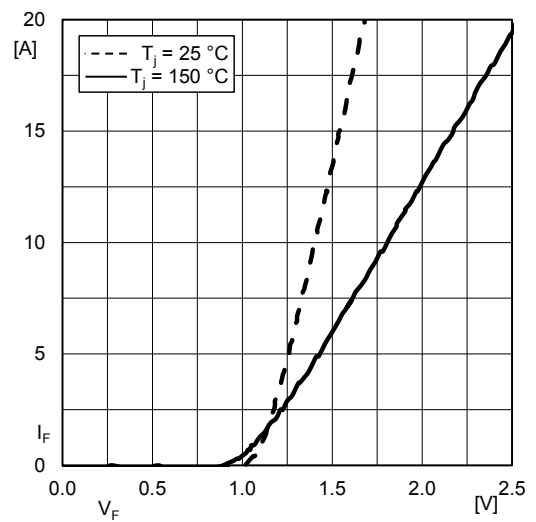


Fig. 2: Typ. Diode1 forward characteristic, incl. $R_{CC'+EE'}$

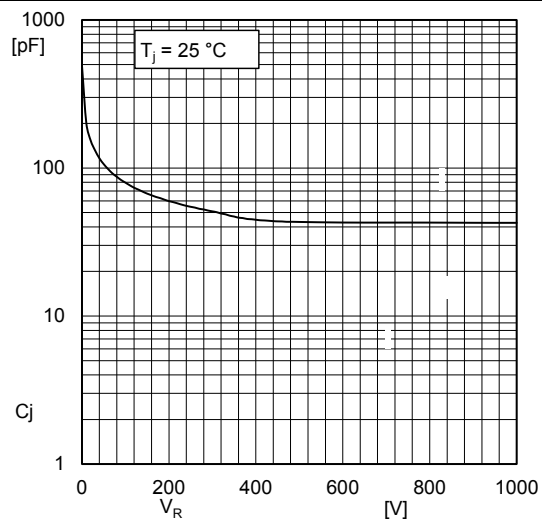
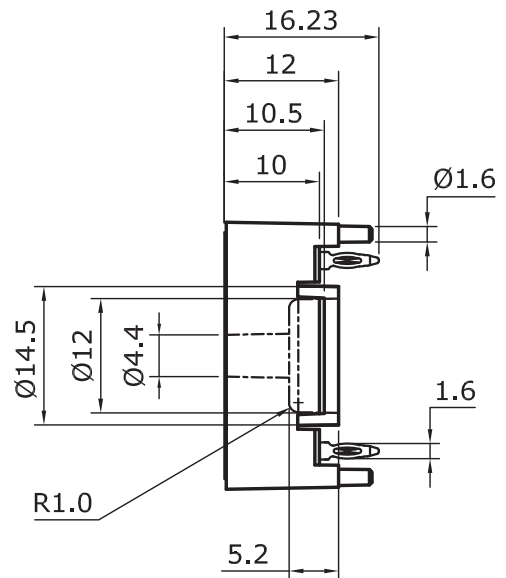
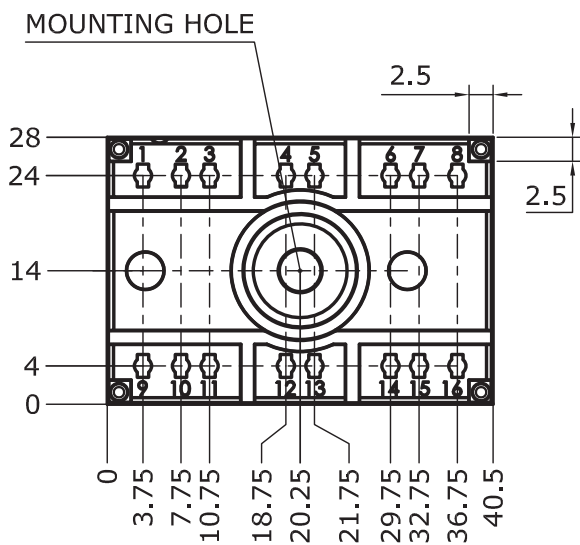
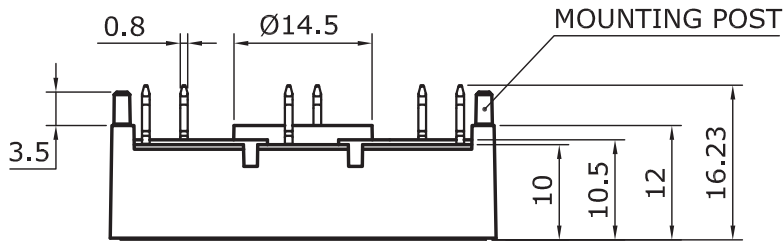


Fig. 3: Typ. capacitance-voltage charact. (1 MHz)

Dimensions: mm

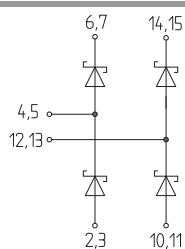
Tolerance system: ISO 2768-m



Suggested drilled hole diameter for terminal pins in the circuit board:
- refer Mounting Instruction SEMITOP® Classic

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SEMITOP 2 Press-Fit



KDD

IMPORTANT INFORMATION AND WARNINGS

This is an electrostatic discharge sensitive device (ESDS) according to international standard IEC 61340.

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