

SK20KDD12SCp



SEMITOP® 2 Press-Fit

SiC Bridge Rectifier

Engineering Sample

SK20KDD12SCp

Target Data

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 SEMITOP® Press-Fit types
- Improved thermal performance by aluminum oxide substrate
- Ultra Low inductance design
- UL recognized, file no. E63532

Typical Applications*

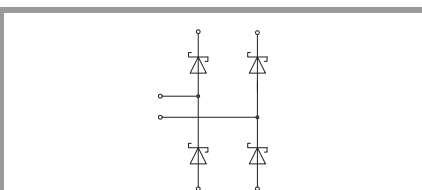
- Solar inverter
- UPS
- Power Supply

Absolute Maximum Ratings				
Symbol	Conditions	Values	Unit	
Diode 1				
V_{RRM}	$T_j = 25\text{ °C}$	1200	V	
I_F	$T_j = 175\text{ °C}$	$T_s = 25\text{ °C}$	18	A
		$T_s = 70\text{ °C}$	14	A
I_{Fnom}		10	A	
I_{FSM}	8.3 ms, sin 180°,	33	A	
i^2t	8.3 ms, sin 180°, $T_j = 150\text{ °C}$	5	A ² s	
T_j		-40 ... 175	°C	

Absolute Maximum Ratings			
Symbol	Conditions	Values	Unit
Module			
$I_{t(RMS)}$	$T_{terminal} = 100\text{ °C}$, $T_s = 60\text{ °C}$, per pin	40	A
T_{stg}		-40 ... 125	°C
V_{isol}	AC, sinusoidal, t = 1 min	2500	V

Characteristics					
Symbol	Conditions	min.	typ.	max.	Unit
Diode 1					
V_F	$I_F = 10\text{ A}$	$T_j = 25\text{ °C}$	1.40	1.60	V
		chipelevel	$T_j = 150\text{ °C}$	1.80	2.10
V_{F0}	chipelevel	$T_j = 25\text{ °C}$	0.95	1.05	V
		$T_j = 150\text{ °C}$	0.80	0.90	V
r_F	chipelevel	$T_j = 25\text{ °C}$	45	55	mΩ
		$T_j = 150\text{ °C}$	100	120	mΩ
C_j	$V_R = 800\text{ V}$, f = 1 MHz, $T_j = 25\text{ °C}$		0.042		nF
Q_c	$V_R = 800\text{ V}$, di/dt _{off} = 500 A/μs, $T_j = 25\text{ °C}$		0.034		μC
$R_{th(j-s)}$	per Diode		2.65		K/W

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

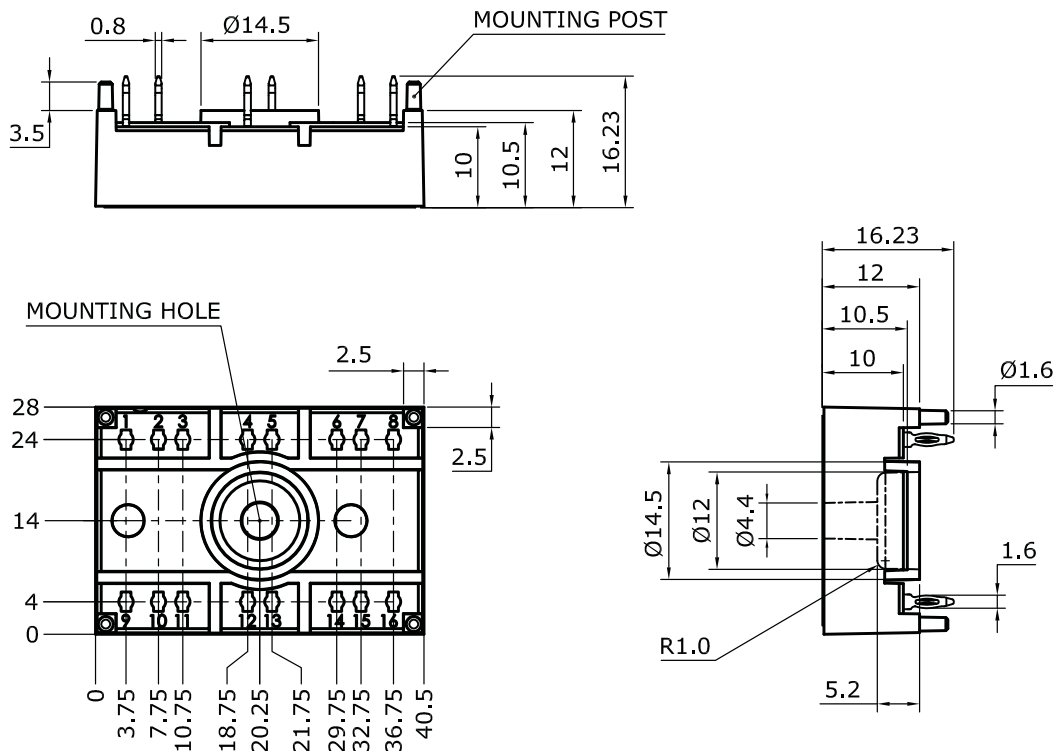


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Dimensions: mm

Tolerance system: ISO 2768-m



Suggested drilled hole diameter for terminal pins in the circuit board:

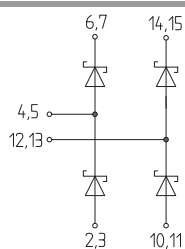
- minimum: 1.575 mm
- typical: 1.6 mm
- maximum: 1.625 mm

Suggested hole diameter for the mounting post in the circuit board:

- 2 mm

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SEMITOP 2 Press-Fit



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This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, chapter IX.

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