



SEMISTOP® 2 Press-Fit

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

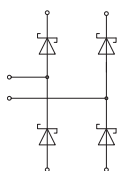
- Solar inverter
- UPS
- Power Supply

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



KDD

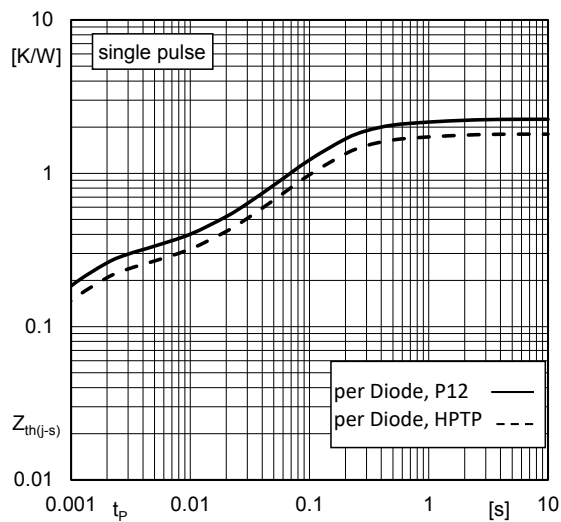


Fig. 1: Transient thermal impedance vs. time

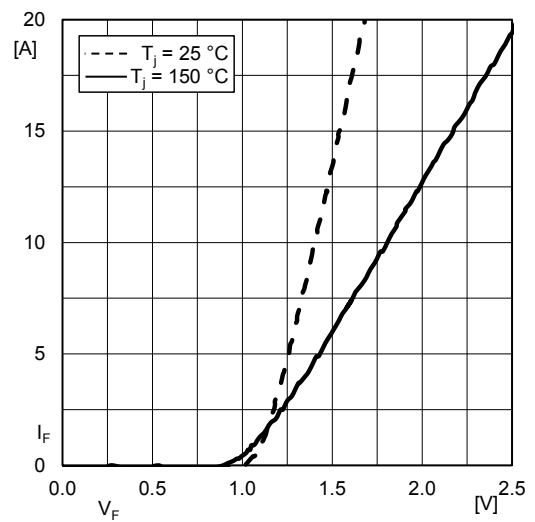


Fig. 2: Typ. Diode1 forward characteristic, incl. $R_{CC'+EE'}$

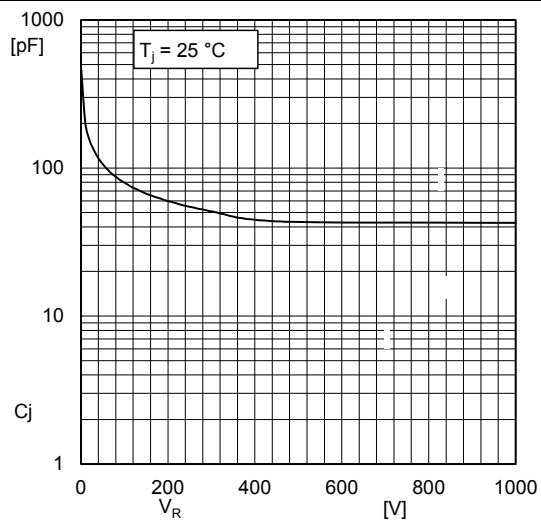
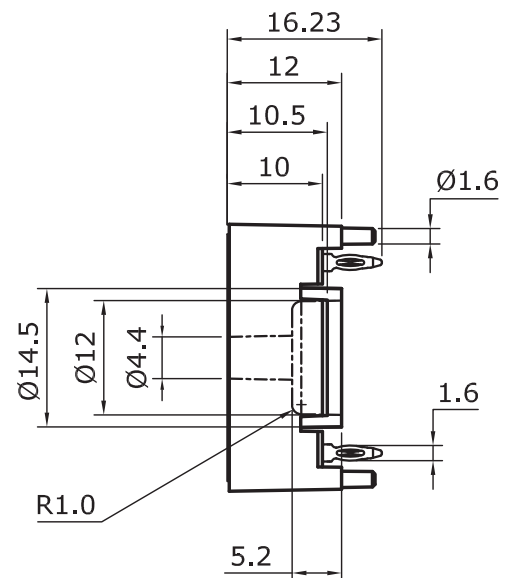
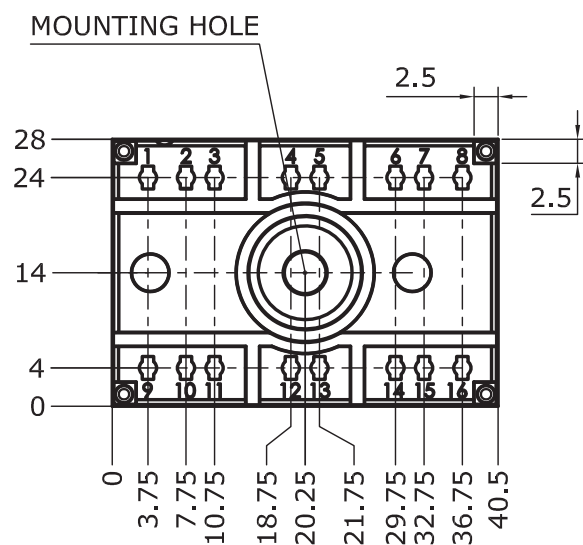
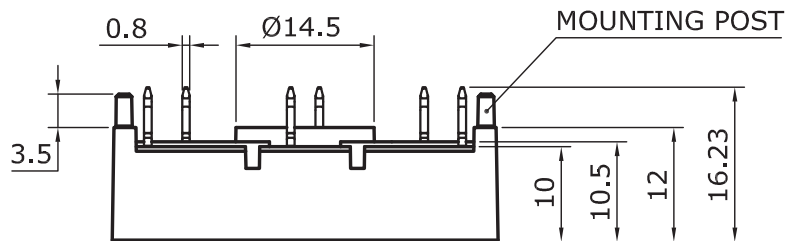


Fig. 3: Typ. capacitance-voltage charact. (1 MHz)

Dimensions: mm

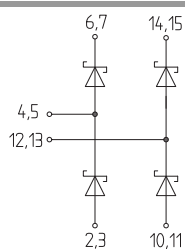
Tolerance system: ISO 2768-m



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

These documents are SEMIKRON properties. SEMIKRON reserves all copyrights.
All copying and transmitting of this information requires written permission.
For the case of industrial property rights, SEMIKRON reserves all rights.

SEMITOP 2 Press-Fit



KDD

IMPORTANT INFORMATION AND WARNINGS

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

*The specifications of Semikron Danfoss products may not be considered as any guarantee or assurance of product characteristics ("Beschaffenheitsgarantie"). The specifications of Semikron Danfoss products describe only the usual characteristics of Semikron Danfoss products to be expected in typical applications, which may still vary depending on the specific application. Therefore, products must be tested for the respective application in advance. Resulting from this, application adjustments of any kind may be necessary. Any user of Semikron Danfoss products is responsible for the safety of their applications embedding Semikron Danfoss products and must take adequate safety measures to prevent the applications from causing any physical injury, fire or other problem, also if any Semikron Danfoss product becomes faulty. Any user is responsible for making sure that the application design and realization are compliant with all laws, regulations, norms and standards applicable to the scope of application. Unless otherwise explicitly approved by Semikron Danfoss in a written document signed by authorized representatives of Semikron Danfoss, Semikron Danfoss products may not be used in any applications where a failure of the product or any consequences of the use thereof can reasonably be expected to result in personal injury. No representation or warranty is given and no liability is assumed with respect to the accuracy, completeness and/or use of any information herein, including without limitation, warranties of non-infringement of intellectual property rights of any third party. Semikron Danfoss does not convey any license under its or a third party's patent rights, copyrights, trade secrets or other intellectual property rights, neither does it make any representation or warranty of non-infringement of intellectual property rights of any third party which may arise from a user's applications.