

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

Typical Applications

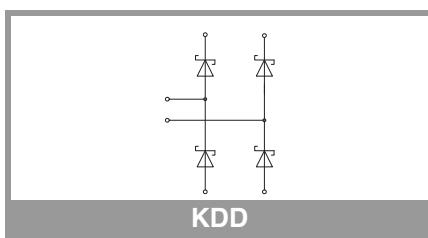
- Solar inverter
- UPS
- Power Supply

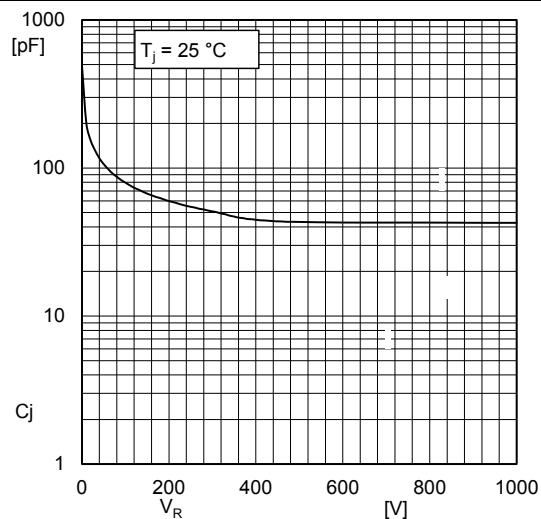
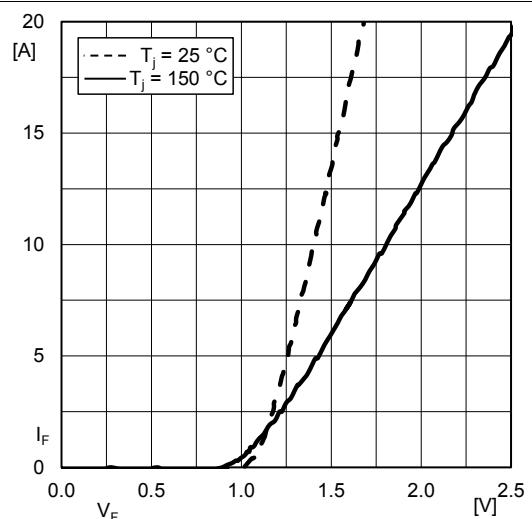
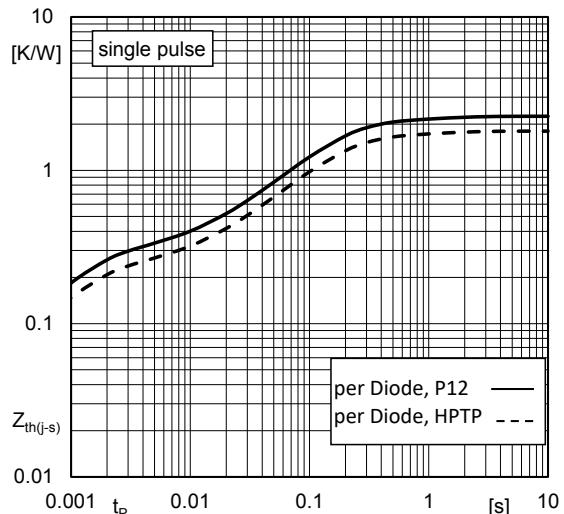
Absolute Maximum Ratings		Values	Unit
Symbol	Conditions		
Diode 1			
V_{RRM}	$T_j = 25^\circ\text{C}$	1200	V
I_F	$P12$	19	A
	$T_j = 175^\circ\text{C}$	16	A
I_F	$HPTP / HP-PCM$	22	A
	$T_j = 175^\circ\text{C}$	18	A
I_{FSM}	8.3 ms, sin 180°,	33	A
i^2t	8.3 ms, sin 180°, $T_j = 150^\circ\text{C}$	4	A ² s
T_j		-40 ... 175	°C

Absolute Maximum Ratings		Values	Unit
Symbol	Conditions		
Module			
$I_{t(RMS)}$	$\Delta T_{\text{terminal}}$ 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		min.	typ.	max.	Unit
Symbol	Conditions				
Diode 1					
V_F	$I_F = 10$ A	$T_j = 25^\circ\text{C}$	1.40	1.60	V
	chiplevel	$T_j = 150^\circ\text{C}$	1.80	2.10	V
V_{F0}	chiplevel	$T_j = 25^\circ\text{C}$	0.95	1.05	V
		$T_j = 150^\circ\text{C}$	0.80	0.90	V
r_F	chiplevel	$T_j = 25^\circ\text{C}$	45	55	mΩ
		$T_j = 150^\circ\text{C}$	100	120	mΩ
C_j	$V_R = 800$ V, $f = 1$ MHz, $T_j = 25^\circ\text{C}$		0.042		nF
Q_c	$V_R = 800$ V, $di/dt_{\text{off}} = 500$ A/μs, $T_j = 25^\circ\text{C}$		0.034		μC
$R_{\text{th}(j-s)}$	per Diode, P12 (Reference)		2.25		K/W
$R_{\text{th}(j-s)}$	per Diode, HPTP		1.8		K/W

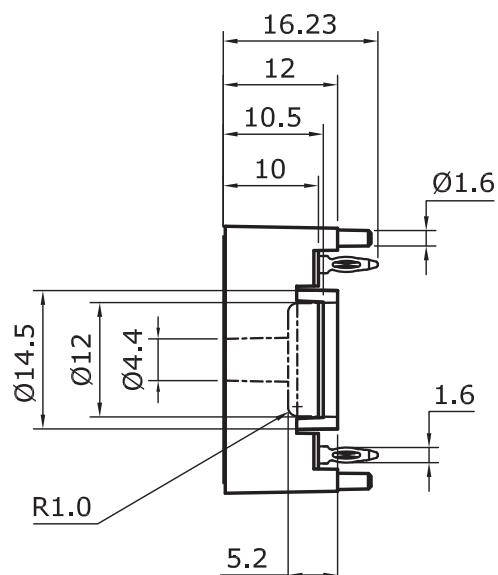
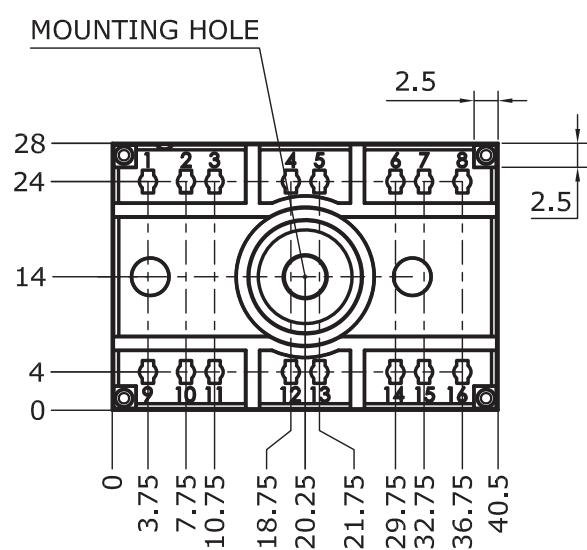
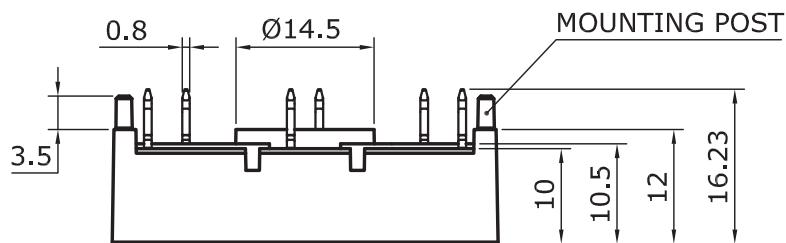
Characteristics		min.	typ.	max.	Unit
Symbol	Conditions				
Module					
M_s	to heatsink	1.8		2	Nm
w	weight		19		g





Dimensions: mm

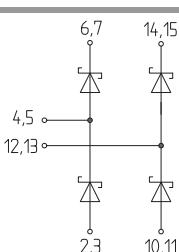
Tolerance system: ISO 2768-m



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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