SK30KDD12SCp

SEMITOP® 2 Press-Fit

Bridge Rectifier (SiC)

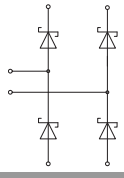
SK30KDD12SCp

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



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Absolute Maximum Ratings				
Symbol	**Conditions**		**Values**	**Unit**
Diode 1				
V_{RRM}	T_j = 25 °C		1200	V
I_F	P12 T_j = 175 °C	T_s = 25 °C	30	A
		T_s = 70 °C	25	A
I_F	HPTP / HP-PCM T_j = 175 °C	T_s = 25 °C	35	A
		T_s = 70 °C	28	A
I_{FSM}	8.3 ms, sin 180°, T_j = 150 °C		62	A
i^2t	8.3 ms, sin 180°, T_j = 150 °C		15	A^2s
T_j			-40 ... 175	°C

Absolute Maximum Ratings			
Symbol	**Conditions**	**Values**	**Unit**
Module			
$I_{t(RMS)}$	$\Delta T_{terminal}$ 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 = 20 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		0.83	0.90	V
r_F	chiplevel	T_j = 25 °C		23	28	mΩ
		T_j = 150 °C		49	60	mΩ
C_j	V_R = 800 V, f = 1 MHz, T_j = 25 °C			0.085		nF
Q_c	V_R = 800 V, di/dt_{off} = 500 A/µs, T_j = 25 °C			0.066		µC
$R_{th(j-s)}$	per Diode, P12 (Reference)			1.7		K/W
$R_{th(j-s)}$	per Diode, HPTP			1.36		K/W

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

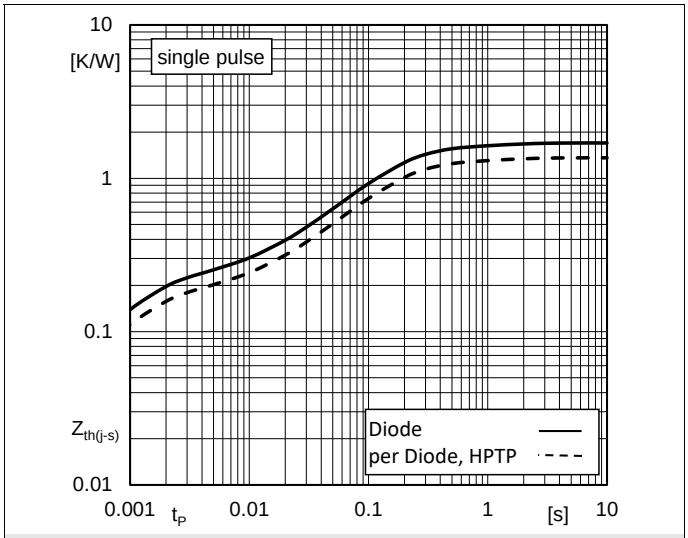

Fig. 1: Transient thermal impedance vs. time

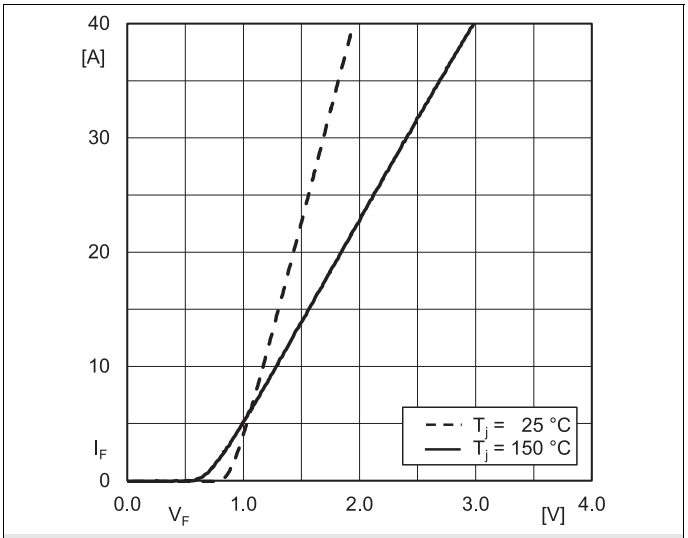

Fig. 2: Typ. Diode1 forward characteristic, incl. $R_{CC'+EE'}$

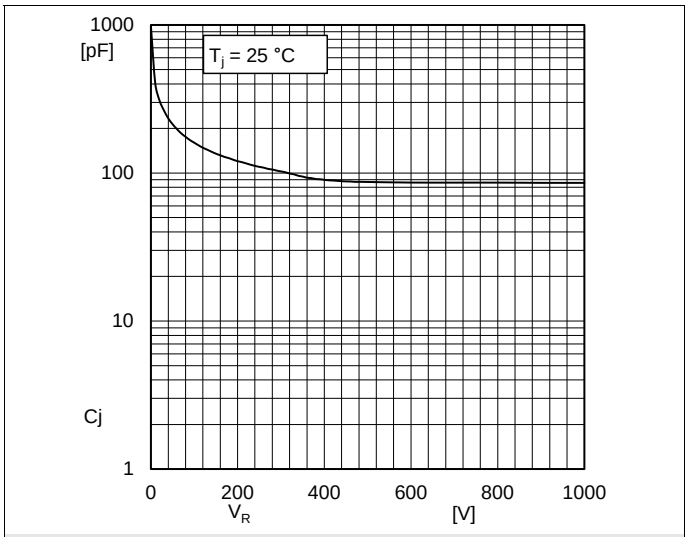

Fig. 3: Typ. capacitance-voltage charact. (1 MHz)

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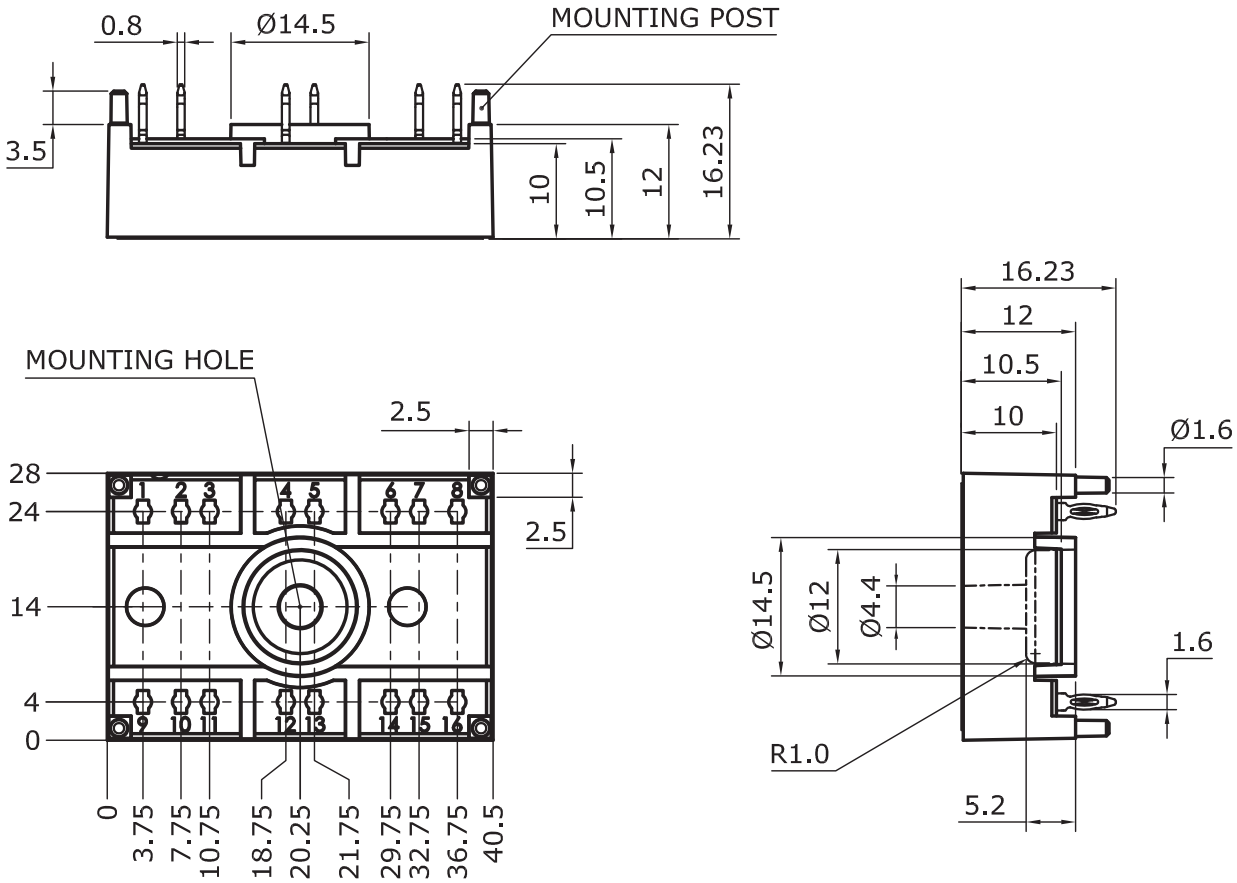
Dimensions: mm
Tolerance system: ISO 2768-m



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

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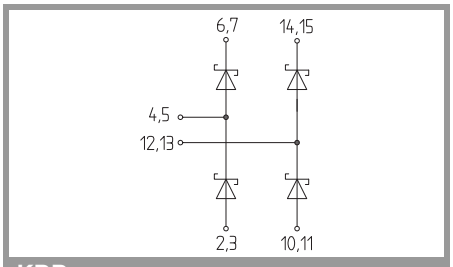

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IMPORTANT INFORMATION AND WARNINGS

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

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