SEMiX603KD16p

SEMiX® 3p

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Features

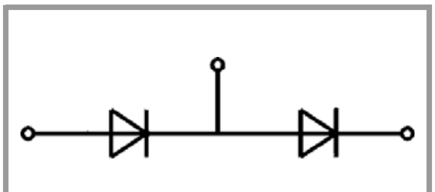
- Rectifier PEP technology for enhanced power and environmental robustness
- T_{jmax} = 175°C
- NTC temperature sensor
- Press-fit pins as auxiliary contacts
- Terminal height 17 mm
- UL recognised file no. E63532

Typical Applications*

- Input Bridge Rectifier for AC/DC motor control
- Power supply

Remarks

- Product reliability results are valid for T_j=150°C
- V_{isol} between temperature sensor and power section is only 2500V
- For storage and case temperature with TIM see document "TP(*) SEMiX 3p"



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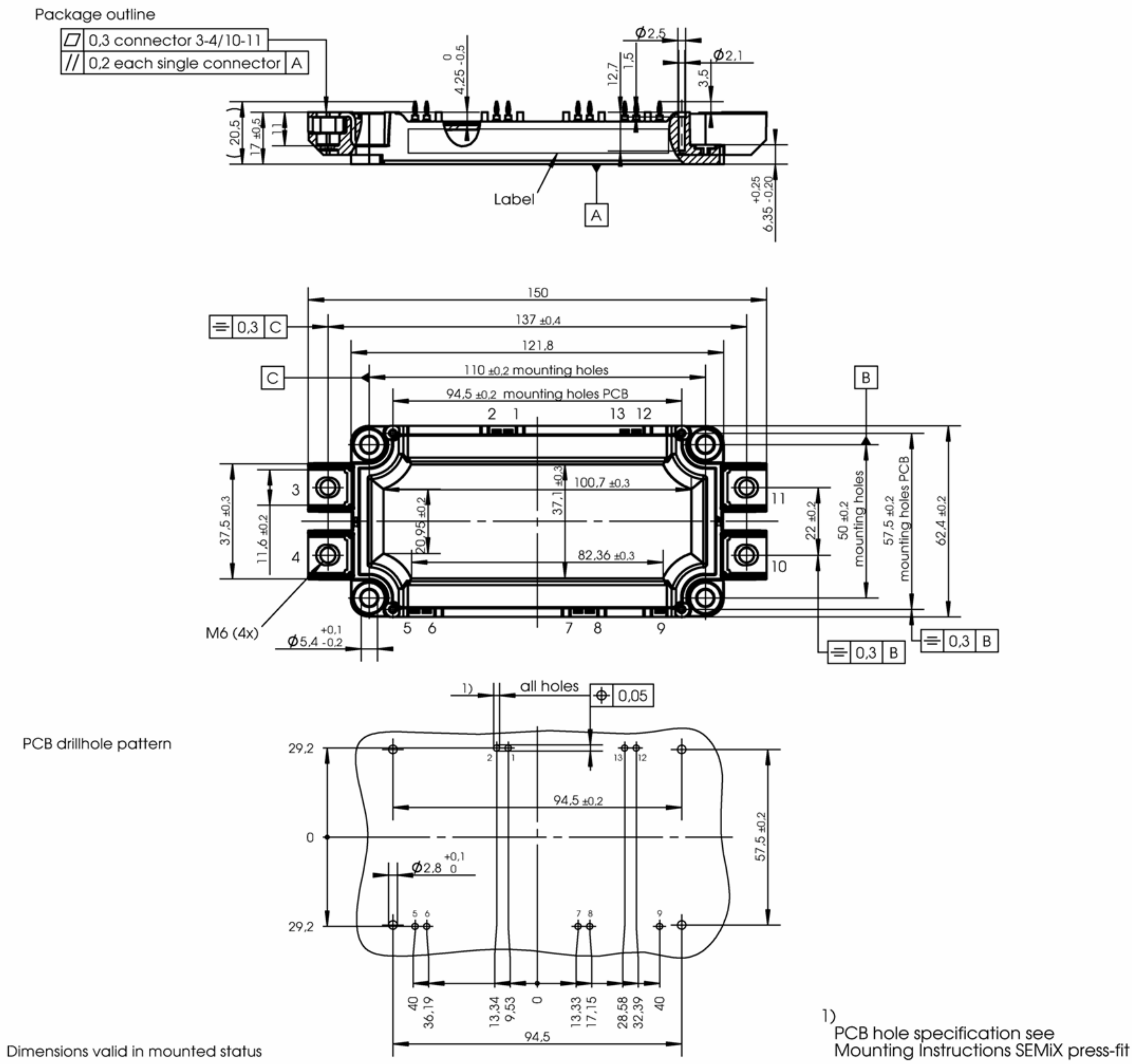
Absolute Maximum Ratings

Symbol	Conditions		Values	Unit
Recitifier Diode				
I_{FAV}	T_j = 175 °C sin. 180	T_c = 85 °C	732	A
		T_c = 100 °C	639	A
I_{FSM}	10 ms	T_j = 25 °C	10000	A
		T_j = 150 °C	9000	A
i^2t	10 ms	T_j = 25 °C	500000	A^2s
		T_j = 150 °C	405000	A^2s
V_{RSM}			1700	V
V_{RRM}			1600	V
T_j			-40 ... 175	°C
Module				
T_{stg}			-40 ... 125	°C
V_{isol}	AC sinus 50Hz	1 min	4000	V
		1 s	4800	V

Characteristics

Symbol	Conditions		min.	typ.	max.	Unit
Diode						
V_F	I_F = 1860 A chiplevel	T_j = 25 °C		1.13	1.42	V
		T_j = 150 °C		1.07	1.38	V
$V_{(TO)}$		T_j = 25 °C		0.89	1.09	V
		T_j = 150 °C		0.73	0.92	V
r_T	chiplevel	T_j = 25 °C		0.13	0.18	mΩ
		T_j = 150 °C		0.18	0.25	mΩ
I_{RD}	T_j = 125 °C, V_{RD} = V_{RRM}				3.6	mA
$R_{th(j-c)}$	sin. 180	per diode			0.09	K/W
						K/W
$R_{th(c-s)}$	per Diode (λ_{grease}=0.81 W/(m*K))			0.033		K/W
$R_{th(c-s)}$	per Diode, pre-applied phase change material			0.017		K/W
Module						
$R_{CC'+EE'}$	measured per switch	T_C = 25 °C		0.4		mΩ
		T_C = 125 °C		0.5		mΩ
$Rth_{(c-s)1}$	calculated without thermal coupling			0.017		K/W
$Rth_{(c-s)2}$	including thermal coupling, Ts underneath module (λ_{grease}=0.81 W/(m*K))			0.024		K/W
$Rth_{(c-s)2}$	including thermal coupling, Ts underneath module, pre-applied phase change material			0.013		K/W
M_s	to heat sink (M5)		3		6	Nm
M_t	to terminals (M6)		3		6	Nm
a					5 * 9.81	m/s^2
w					360	g
Temperature Sensor						
R_{100}	T_c=100°C (R_{25}=5 kΩ)			493 ± 5%		Ω
$B_{100/125}$	$R_{(T)}=R_{100}exp[B_{100/125}(1/T-1/T_{100})]$; T[K];			3550 ±2%		K



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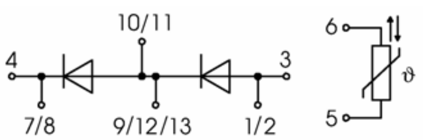

pinout

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

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