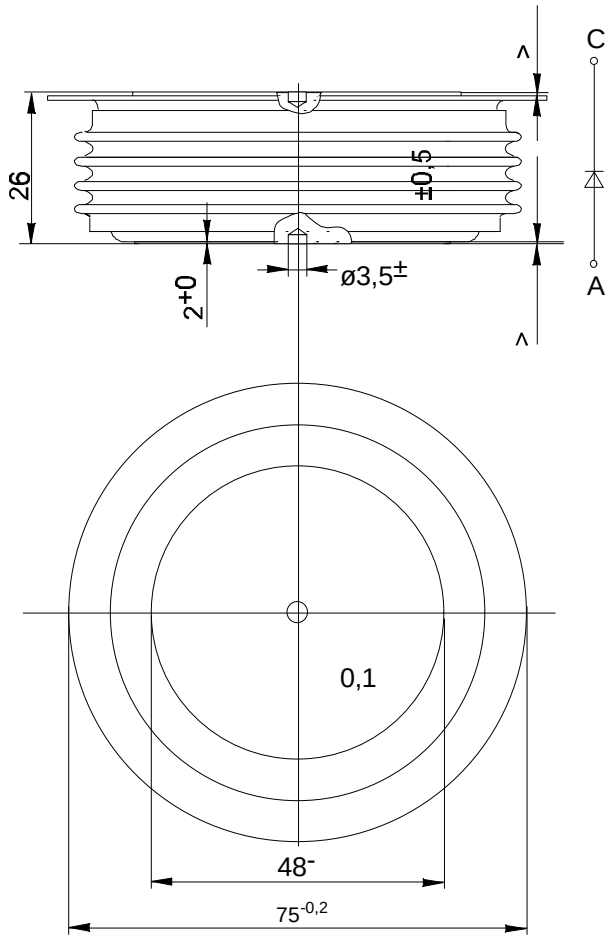
SSI R62F 250

eupec



January 2003

Maximum rated values

repetitive peak reverse voltage	t_{vj} = -40°C...125°C	V_{RRM}	3500 V, 4000 V 4500 V
non-repetitive peak reverse voltage	t_{vj} = +25°C...125°C	V_{RSM}	3600 V, 4100 V 4600
RMS forward current		I_{FRMSM}	1700 A
mean forward current	t_C = 85°C t_C = 52°C	I_{FAVM}	720 A 1080 A
surge forward current [1)]	t_{vj} = 25°C t_{vj} = 125°C	I_{FSM}	16000 A 15000 A
tintegral I^2t-value	t_{vj} = 25°C t_{vj} = 125°C	I^2t	$1{,}3 \times 10^6$ A²s $1{,}13 \times 10^6$ A²s
critical repetitive rate of fall of on - state	t_{vj} = 125°C, I_{FM} = 2000 A, V_R = 3000 V C = 0,25 µF, R = 6	$(-di/dt)_{cm}$	500 A/µs

Characteristic values

cont. direct reverse voltage	t_c = -40°C ... +85°C	$V_{R(D)}$	typ. 2000 V
forward voltage	t_{vj} = 125°C i_{FM} = 2500 A	V_F	3,5 V
threshold voltage	t_{vj} = 125°C	$V_{(TO)}$	1,7 V
forward slope resistance	t_{vj} = 125°C	r_T	0,69 mΩ
reverse current	t_{vj} = 125°C, v_R = 0,67 V_{RRM} t_{vj} = 125°C, v_R = V_{RRM}	i_R	ca. 75 mA 140 mA [1)]
peak reverse recovery current	i_{FM} = 1000 A, -di_F/dt = 250 A/µs t_{vj} = 125 °C; v_R = 1000 V; C = 0,25 µF; R = 6Ω	I_{RM}	600 A
recovered charge	i_{FM} = 1000 A, -di_F/dt = 250 A/µs t_{vj} = 125 °C; v_R = 1000 V; C = 0,25 µF; R = 6Ω	Q_{rr}	1700 µAs

Thermal properties

thermal resistance, junction to case	Kühlfläche / cooling surface beidseitig / two-sided Anoden / anode Kathode / cathode	R_{thJC}	 0,018 K/W 0,033 K/W 0,04 K/W
thermal resistance, case to heatsink	Kühlfläche / cooling surface beidseitig / two-sided einseitig / single-sided	R_{thCK}	 0,005 K/W 0,01 K/W
max. junction temperat.		t_{vj}max	125 °C
operating temperature		t_c op	-40...+125 °C
storage temperature		t_{stg}	-40...+150 °C

Mechanical properties

case, see appendix			Seite / page 1
clamping force		F	15...36 kN
Gewicht / weight		G	ca. 600 g
air distance			ca. 20 mm
creepage distance			30 mm
humidity classification	DIN 40040		C
vibration resistance	f = 50 Hz		50 m/s²

This technical information specifies semiconductor devices but promises no characteristics. It is valid in combination with the belonging technical notes.

Analytical elements of transient thermal impedance Z_{thJC} for DC

	1. Z_{thJC}		2. Z_{thJC}		3. Z_{thJC}	
	r [K/W]	τ [s]	r [K/W]	τ [s]	r [K/W]	τ [s]
1	0,00637	1,80000	0,02137	8,00000	0,02837	6,80000
2	0,00904	0,14000	0,00904	0,14000	0,00904	0,14000
3	0,00267	0,01410	0,00167	0,01410	0,00167	0,01410
4	0,00080	0,00265	0,00080	0,00265	0,00080	0,00265
5	0,00012	0,00067	0,00012	0,00067	0,00012	0,00067
Σ	0,00180	-	0,03300	-	0,04000	-

Analytical function:

$$Z_{th}JC = \sum_{n=1}^{n_{max}} R_{thn} (1\text{-}EXP(-t/\tau_n))$$