High Power Sonic Fast Recovery Diode Type SA65RS1375RF

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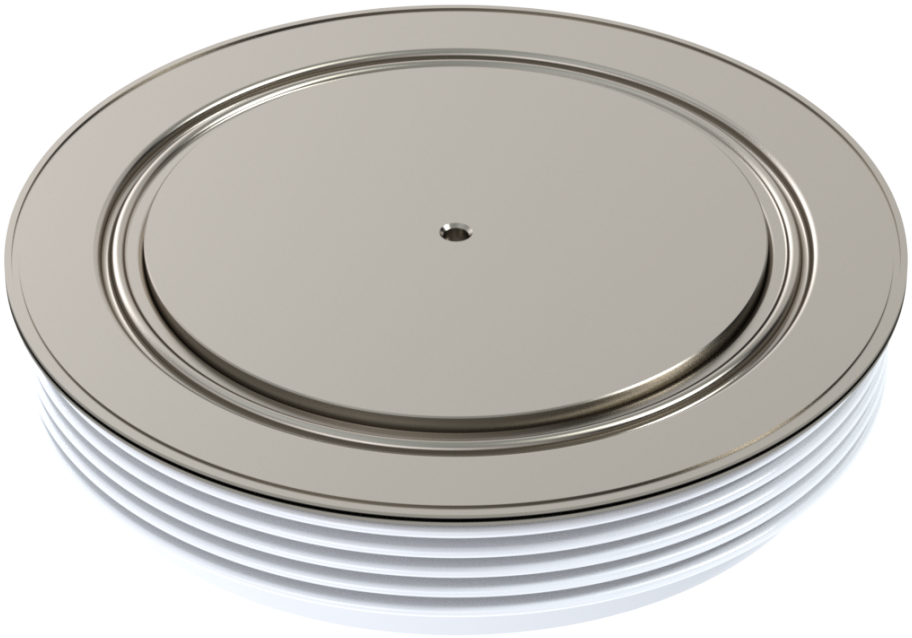

ORDERING INFORMATION						(Please quote 12 to 15 digit code as below)
SA	65	RS	1375	R	F	
-	Voltage Code	Outline Code	Current code	Type code	Special code	Optional code

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Absolute Maximum Ratings

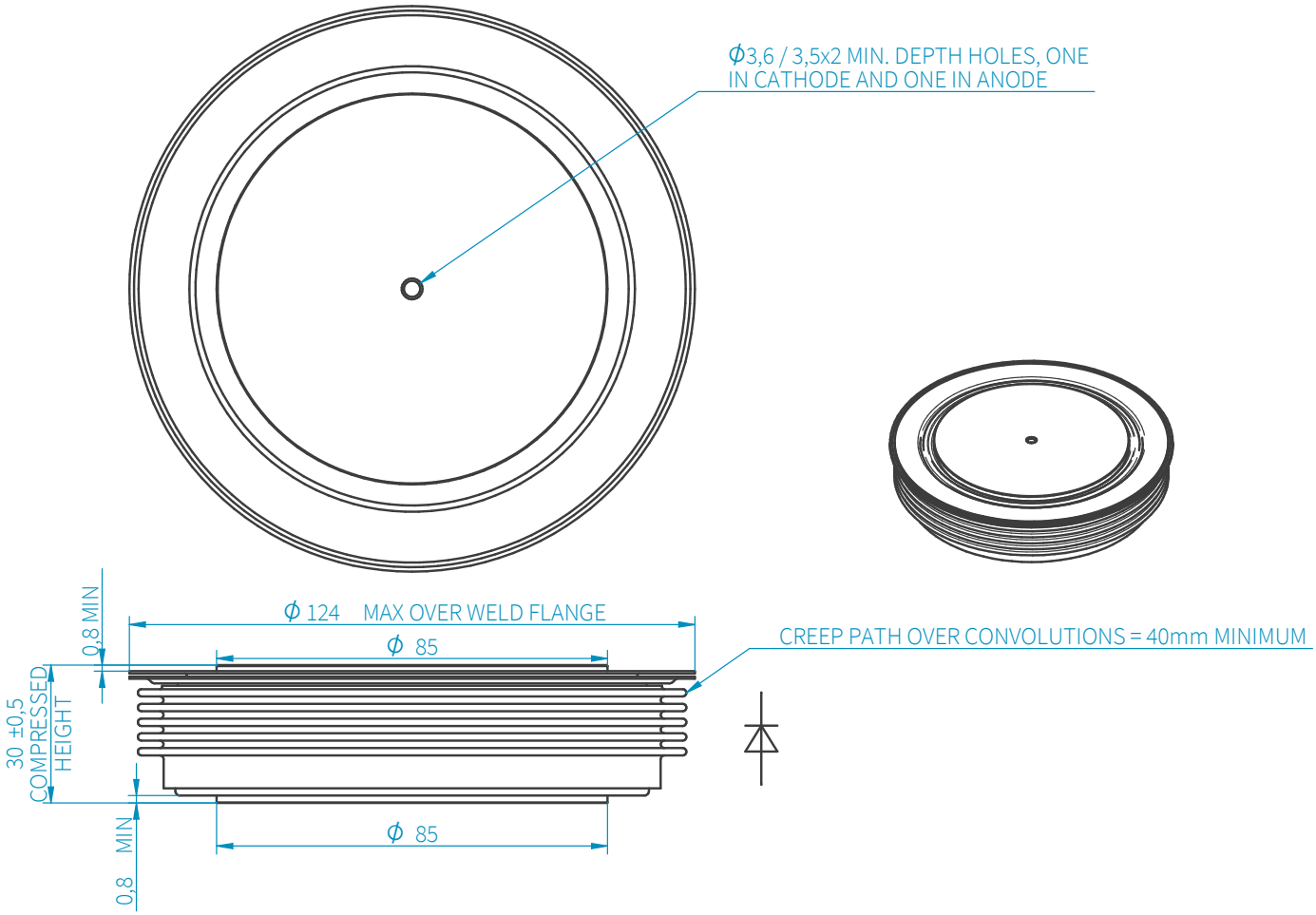
	VOLTAGE RATINGS	MAXIMUM LIMITS	UNITS
V_{RRM}	Repetitive peak reverse voltage, (note 1)	6500	V
V_{RSM}	Non-repetitive peak reverse voltage, (note 1)	6600	V
V_{RDC}	Maximum reverse D.C. Voltage, (note 1)	3600	V
note 1)	De-Rating factor of 0.13% per °C is applicable for T_j below 25°C		

	OTHER RATINGS	MAXIMUM LIMITS	UNITS
$I_{F(AV)M}$	Mean forward current, T_{sink} = 55°C, (note 1)	1125	A
$I_{F(AV)M}$	Mean average forward current, T_{sink} = 100°C, (note 1)	593	A
$I_{F(AV)M}$	Mean average forward current, T_{sink} = 100°C, (note 2)	260	A
$I_{F(AV)M}$	Mean average forward current, T_{sink} = 100°C, (note 3)	462	A
$I_{F(RMS)}$	Nominal RMS forward current, T_{sink} = 25°C (note 1)	2183	A
$I_{f(d.c.)}$	D.C. forward current, T_{sink} = 25°C (note 4)	1993	A
I_{FSM}	Peak non-repetitive surge current t_p = 10ms, V_{RM} = 60%V_{RRM}, (note 5)	12.2	kA
I_{FSM2}	Peak non-repetitive surge current t_p = 10ms, $V_{RM} \leq$ 10V, (note 5)	13.4	kA
I^2t	I^2t capacity for fusing t_p = 10ms, V_{RM} = 60%V_{RRM}, (note 5)	$742 \cdot 10^3$	A^2s
I^2t	I^2t capacity for fusing t_p = 10ms, $V_{RM} \leq$ 10V, (note 5)	$898 \cdot 10^3$	A^2s
P_{rr}	Maximum non-repetitive peak reverse recovery power, (note 7)	6.6	MW
T_{jop}	Operating temperature range	-40 to +125	°C
T_{stg}	Storage temperature range	-40 to +125	°C
note 1)	Double-side cooled, single phase, 50Hz, 180° half-sinewave.		
note 2)	Anode side cooled, single phase, 50Hz, 180° half-sinewave.		
note 3)	Cathode side cooled, single phase, 50Hz, 180° half-sinewave.		
note 4)	Double-side cooled.		
note 5)	Half-sinewave, 125°C T_j initial.		
note 6)	Current (I_F) ratings have been calculated using V_{T0} and r_T (see page 3)		
note 7)	$T_j = T_{jop}$, I_F = 1375A, di/dt = 3500A/µs, V_r = 3600V, and L_s = 200nH. Test circuit and sample waveform are shown in diagram 1. IGBT type SA65QS1375GE used as switch.		

Characteristics

	PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNITS
V_{FM}	Maximum peak forward voltage	I_{FM}=1375A	-	3.45	3.85	V
		I_{FM}=2750A	-	-	5.25	V
V_{T01}	Threshold Voltage	Current range 458A - 1375A	-	-	1.89	V
r_{T1}	Slope resistance		-	-	1.423	mΩ
V_{FRM}	Maximum forward recovery voltage	di/dt = 3000A/µs, T_j = 25°C	-	-	135	V
		di/dt = 3000A/µs	-	-	210	V
I_{RRM}	Peak reverse current	Rated V_{RRM}, T_j = 25°C	-	-	1	mA
		Rated V_{RRM}	-	-	35	mA
Q_{rr}	Recovered charge	I_{FM} = 1375A, t_p = 1ms, di/dt = 3500A/µs, V_R = 3600V, 50% Chord. IGBT type SA65QS1375GE	-	2100	2310	µC
Q_{ra}	Recovered charge, 50% Chord		-	880	-	µC
I_{rm}	Reverse recovery current		-	1600	1760	A
t_{rr}	Reverse recovery time, 50% Chord		-	1.1	-	µs
E_{rm}	Reverse recovery loss, 50% Chord		-	3.4	3.8	J
R_{thJK}	Thermal resistance, junction to heatsink	Double side cooled	-	-	10.62	K/kW
		Anode side cooled	-	-	15.38	K/kW
		Cathode side cooled	-	-	34.31	K/kW
F	Mounting force	note 3)	30	-	40	kN
W_t	Weight		-	1.0	-	Kg
note 1)	Unless otherwise indicated T_j = 125°C					
note 2)	V_{T0} and r_T were used to calculate the current ratings illustrated on page 2					
note 3)	For other clamp forces consult factory					

Outline Drawing



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