Soft Recovery Diode
Type SA45YP0659Z0

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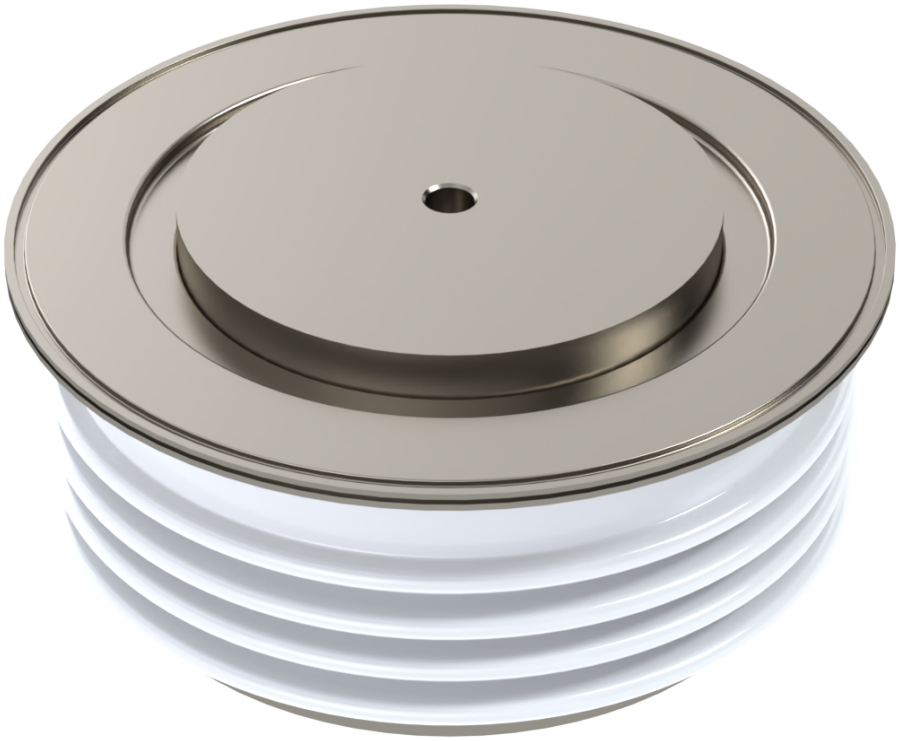
Data Sheet Issue: 1



ORDERING INFORMATION						(Please quote 12 to 15 digit code as below)
SA	45	YP	0659	Z	0	
-	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)	4500	V
V_{RSM}	Non-repetitive peak reverse voltage, (note 1)	4600	V
V_{RDC}	Maximum reverse D.C. Voltage, (note 1)	2100	V
note 1)	De-Rating factor of 0.13% per °C is applicable for T_j below 25°C		

	OTHER RATINGS	MAXIMUM LIMITS	UNITS
$I_{F(AV)M}$	Maximum average forward current, T_{sink} = 55°C, (note 1)	659	A
$I_{F(AV)M}$	Maximum average forward current, T_{sink} = 100°C, (note 1)	312	A
$I_{F(AV)M}$	Maximum average forward current, T_{sink} = 100°C, (note 2)	178	A
$I_{F(RMS)}$	Nominal RMS forward current, T_{sink} = 25°C (note 1)	1315	A
$I_{f(d.c.)}$	D.C. forward current, T_{sink} = 25°C (note 3)	1108	A
I_{FSM}	Peak non-repetitive surge current t_p = 10ms, V_{RM} = 60%V_{RRM}, (note 4)	7.62	kA
I_{FSM2}	Peak non-repetitive surge current t_p = 10ms, $V_{RM} \leq$ 10V, (note 4)	8.47	kA
I^2t	I^2t capacity for fusing t_p = 10ms, V_{RM} = 60%V_{RRM}, (note 4)	$290 \cdot 10^3$	A^2s
I^2t	I^2t capacity for fusing t_p = 10ms, $V_{RM} \leq$ 10V, (note 4)	$359 \cdot 10^3$	A^2s
T_{jop}	Operating temperature range	-40 to +125	°C
T_{stg}	Storage temperature range	-40 to +150	°C
note 1)	Double-side cooled, single phase, 50Hz, 180° half-sinewave.		
note 2)	Single-side cooled, single phase, 50Hz, 180° half-sinewave.		
note 3)	Double-side cooled.		
note 4)	Half-sinewave, 125°C T_j initial.		

Characteristics

	PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNITS
V_{FM}	Maximum peak forward voltage	I_{FM}=1400A	-	-	3.0	V
		I_{FM}=1320A	-	-	2.95	V
V_{T0}	Threshold Voltage		-	-	1.71	V
r_T	Slope resistance		-	-	0.925	mΩ
V_{FRM}	Maximum forward recovery voltage	di/dt = 1000A/µs, T_j = 25°C	-	-	110	V
		di/dt = 1000A/µs	-	-	180	V
I_{RRM}	Peak reverse current	Rated V_{RRM}, T_j = 25°C	-	-	100	mA
		Rated V_{RRM}	-	-	100	mA
Q_{rr}	Recovered charge	I_{FM} = 1000A, t_p = 1000µs, di/dt = 60A/µs, V_r = 50V, 50% Chord.	-	80	-	µC
Q_{ra}	Recovered charge, 50% Chord		-	270	350	µC
I_{rm}	Reverse recovery current		-	130	-	A
t_{rr}	Reverse recovery time, 50% Chord		-	4.2	-	µs
R_{thJK}	Thermal resistance, junction to sink	Double side cooled	-	-	0.033	K/W
		Single side cooled	-	-	0.066	K/W
F	Mounting force	(note 2)	10	-	20	kN
W_t	Weight		-	340	-	g
note 1)	Unless otherwise indicated T_j = 125°C					
note 2)	For other clamping forces, consult factory.					

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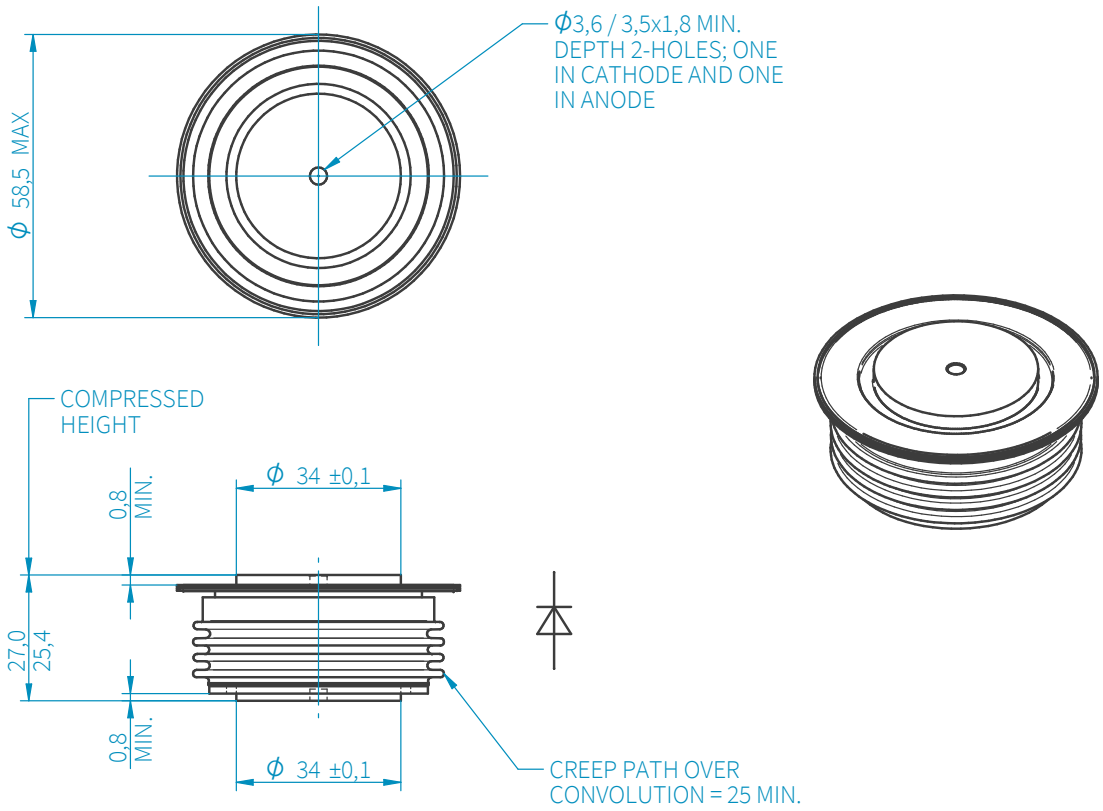
Outline Drawing



SANCONA®
technical solutions

SANCONA GmbH
An der Hebemärchte 26
D-04316 Leipzig

// +49 341 652355-0
+49 341 652355-99
info@sancona.com
www.sancona.com

// Registry Court: Leipzig HRB 32946
VAT Reg No.: DE308741810
Tax number: 232/118/085686