Fast Recovery Diode
Type SA45AU1163Z0PNN

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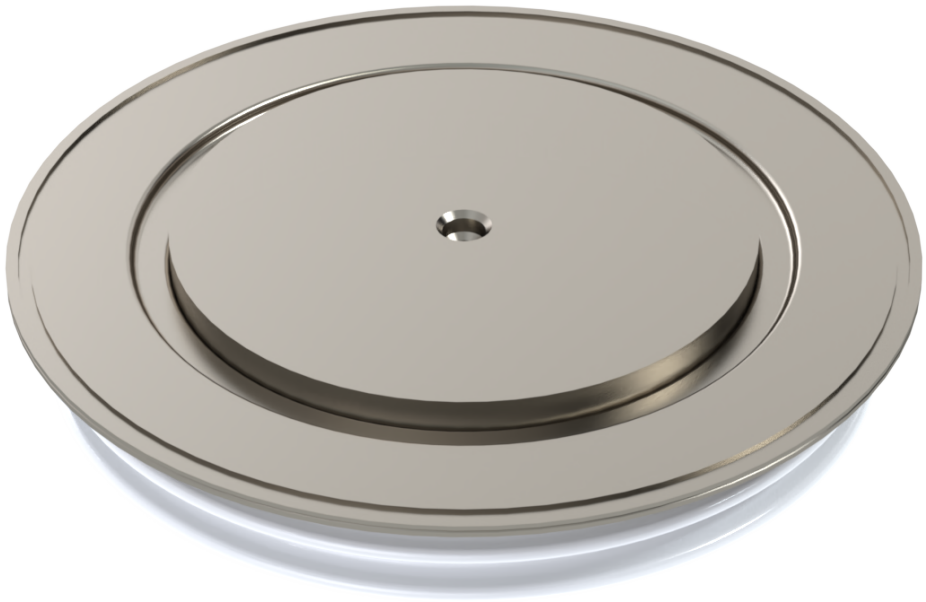

ORDERING INFORMATION				(Please quote 12 to 15 digit code as below)		
SA	45	AU	1163	Z	0	PNN
-	Voltage Code	Outline Code	Current code	Type code	Special code	Optional code

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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)	1275	A
$I_{F(AV)M}$	Maximum average forward current, T_{sink} = 100°C, (note 1)	845	A
$I_{F(AV)M}$	Maximum average forward current, T_{sink} = 100°C, (note 2)	525	A
$I_{F(RMS)}$	Nominal RMS forward current, T_{sink} = 25°C (note 1)	2365	A
$I_{f(d.c.)}$	D.C. forward current, T_{sink} = 25°C (note 3)	2105	A
I_{FSM}	Peak non-repetitive surge current t_p = 10ms, V_{RM} = 60%V_{RRM}, (note 4)	10.8	kA
I_{FSM2}	Peak non-repetitive surge current t_p = 10ms, $V_{RM} \leq$ 10V, (note 4)	11.9	kA
I^2t	I^2t capacity for fusing t_p = 10ms, V_{RM} = 60%V_{RRM}, (note 4)	$583 \cdot 10^3$	A^2s
I^2t	I^2t capacity for fusing t_p = 10ms, $V_{RM} \leq$ 10V, (note 4)	$708 \cdot 10^3$	A^2s
T_{jop}	Operating temperature range	-40 to +150	°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, 150°C T_j initial.		

Characteristics

	PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNITS
V_{FM}	Maximum peak forward voltage	I_{FM}=1500A	-	-	2.65	V
		I_{FM}=2350A	-	-	3.20	V
V_0	Threshold Voltage		-	-	1.50	V
r_s	Slope resistance		-	-	0.77	mΩ
V_{FRM}	Maximum forward recovery voltage	di/dt = 1000A/µs, 25°C	-	-	65	V
		di/dt = 1000A/µs	-	-	150	V
I_{RRM}	Peak reverse current	Rated V_{RRM}	-	-	150	mA
Q_{rr}	Recovered charge	I_{FM} = 1000A, t_p = 1000µs, di/dt = 60A/µs, V_R = 50V, 50% Chord.	-	1200	-	µC
Q_{ra}	Recovered charge, 50% Chord		-	700	800	µC
I_{rm}	Reverse recovery current		-	220	-	A
t_{rr}	Reverse recovery time, 50% Chord		-	6.4	-	µs
R_{thJK}	Thermal resistance, junction to sink	Double side cooled	-	-	0.019	K/W
		Single side cooled	-	-	0.038	K/W
F	Mounting force	(note 2)	19	-	26	kN
W_t	Weight		-	250	-	g
note 1)	Unless otherwise indicated T_j = 150°C					
note 2)	For other clamping forces, consult factory					

Device selected to criteria below

	PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNITS
V_{FM}	Maximum peak forward voltage	I_{FM} = 1500A, T_j = 125°C, t_p = 1000µs, di/dt = 100A/µs	-	-	3.5	V
I_{RRM}	Peak reverse current	Rated V_{RRM}, T_j = 125°C	-	-	140	mA
Q_{rr}	Recovered charge	I_{FM} = 1000A, t_p = 1000µs, di/dt = 250A/µs, Integration time=150µs, V_r = 100V, t_j = 125°C	-	-	1700	µC
I_{rm}	Reverse recovery current		-	-	600	A

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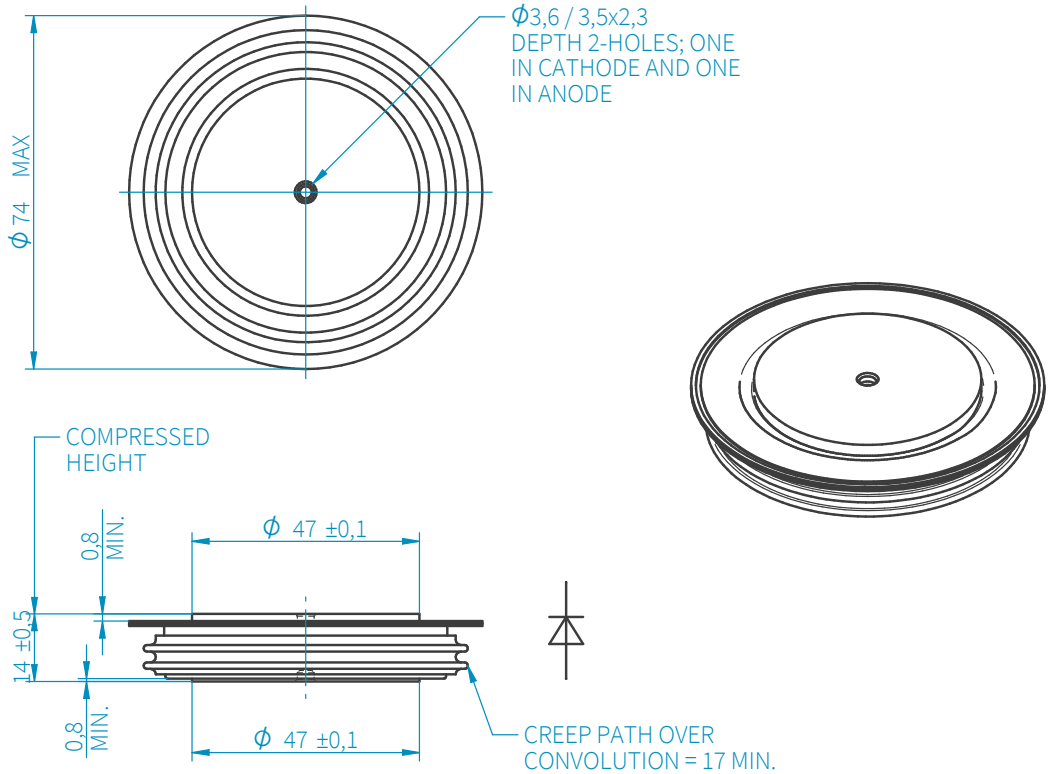
Outline Drawing



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