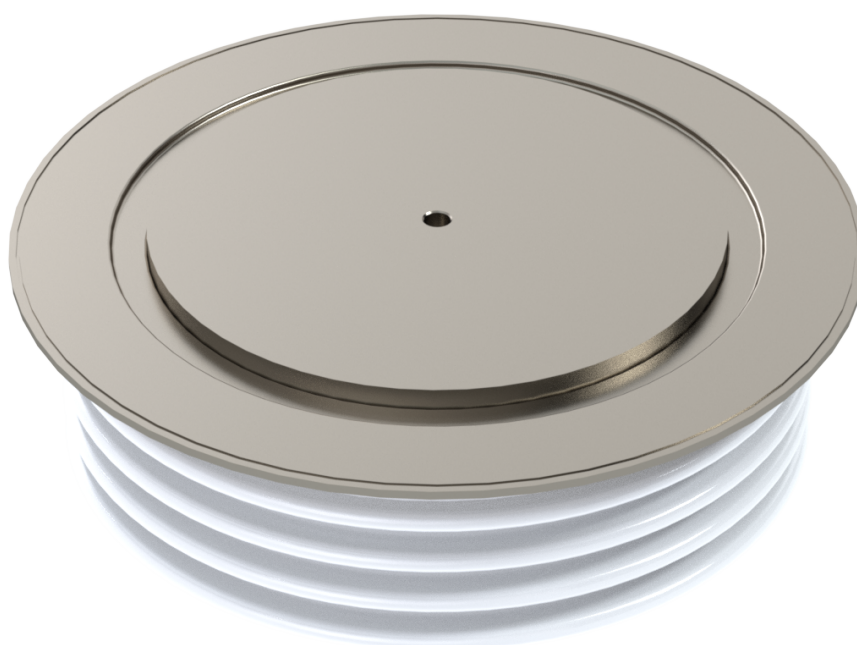


Rectifier Diode Type SA45ML3743J0

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Date: August, 2020
Data Sheet Issue: 1



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(Please quote 12 to 15 digit code as below)

SA	45	ML	3743	J	0	
-	Voltage Code	MP = standard capsule MG = rupture rated capsule ML = extended rupture rated capsule	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)	2700	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, $T_{sink} = 55^{\circ}C$, (note 1)	3750	A
$I_{F(AV)M}$	Maximum average forward current, $T_{sink} = 100^{\circ}C$, (note 1)	2625	A
$I_{F(AV)M}$	Maximum average forward current, $T_{sink} = 100^{\circ}C$, (note 2)	1640	A
$I_{F(RMS)}$	Nominal RMS forward current, $T_{sink} = 25^{\circ}C$ (note 1)	6860	A
$I_{f(d.c.)}$	D.C. forward current, $T_{sink} = 25^{\circ}C$ (note 3)	6100	A
I_{FSM}	Peak non-repetitive surge current $t_p = 10ms$, $V_{RM} = 60\%V_{RRM}$, (note 4)	35	kA
I_{FSM2}	Peak non-repetitive surge current $t_p = 10ms$, $V_{RM} \leq 10V$, (note 4)	39	kA
I^2t	I^2t capacity for fusing $t_p = 10ms$, $V_{RM} = 60\%V_{RRM}$, (note 4)	$6.13 \cdot 10^6$	A^2s
I^2t	I^2t capacity for fusing $t_p = 10ms$, $V_{RM} \leq 10V$, (note 4)	$7.61 \cdot 10^6$	A^2s
T_{jop}	Operating temperature range	-55 to +160	°C
T_{stg}	Storage temperature range	-55 to +160	°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, 160°C T_j initial.		

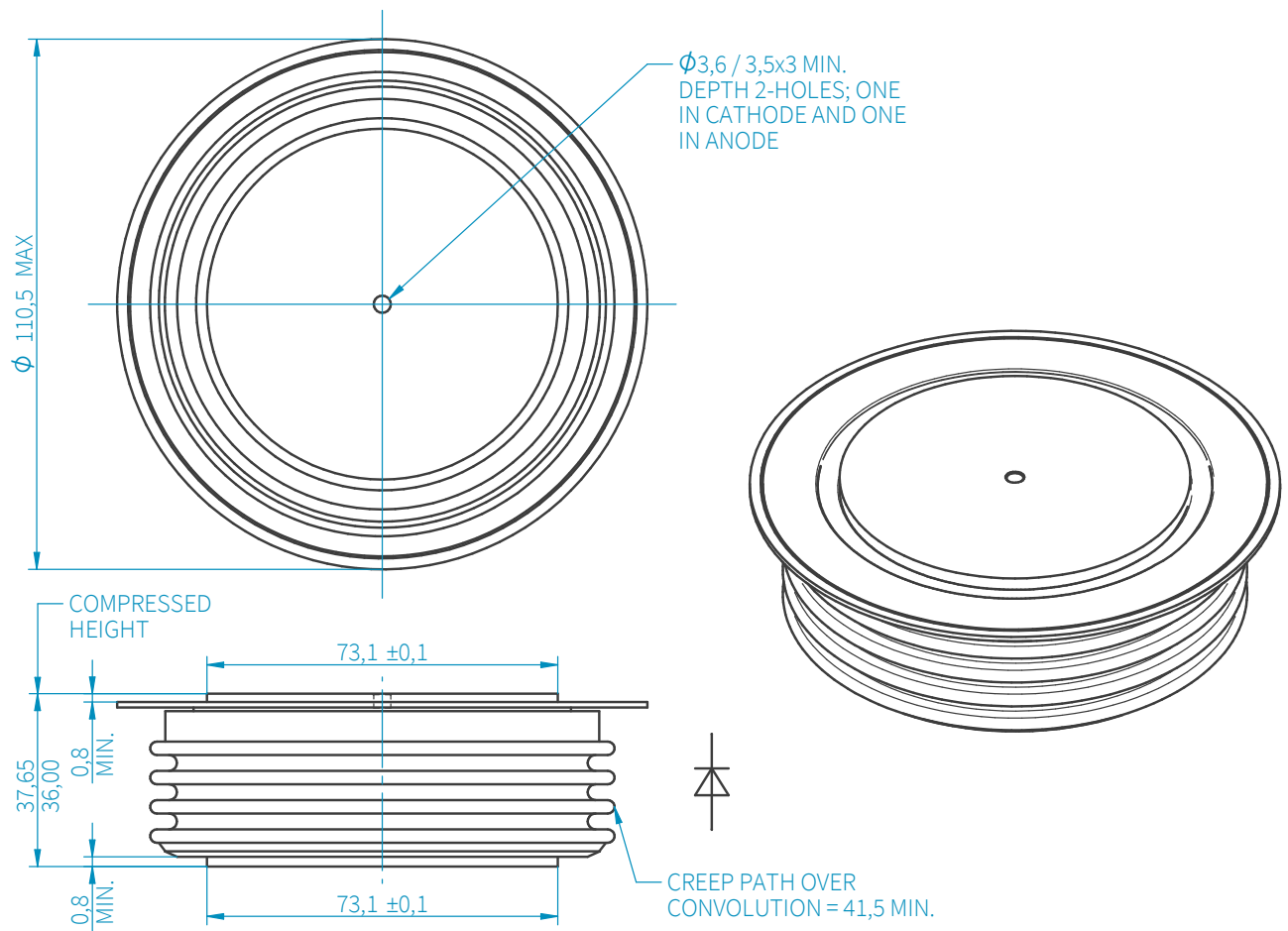
Characteristics

	PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNITS
V _{FM}	Maximum peak forward voltage	I _{FM} =6000A	-	-	2.00	V
		I _{FM} =11250A	-	-	2.90	V
V _{T0}	Threshold Voltage	Valid from 5000A to 15000A	-	-	0.976	V
r _T	Slope resistance		-	-	0.170	mΩ
I _{RRM}	Peak reverse current	Rated V _{RRM}	-	-	200	mA
Q _{rr}	Recovered charge		-	12000	13000	μC
Q _{ra}	Recovered charge, 50% Chord	I _{FM} = 2000A, t _p = 1000μs, di/dt = 10A/μs, V _R = 100V	-	7150	-	μC
I _{rm}	Reverse recovery current		-	263	-	A
t _{rr}	Reverse recovery time, 50% Chord		-	55	-	μs
R _{thJK}	Thermal resistance, junction to heatsink	Double side cooled	-	-	0.011	K/W
		Single side cooled	-	-	0.022	K/W
F	Mounting force	note 2)	27	-	47	kN
W _t	Weight		-	1700	-	g
note 1)	Unless otherwise indicated T _j = 160°C					
note 2)	For other clamp forces consult factory					

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