



5SDD 71B0400

Old part no. DS 808D-7110-04

High current diode

Properties

- High forward current capability
- Low forward and reverse recovery losses
- High operational reliability

Applications

- Welding equipment
- High current application up to 2000 Hz

Key parameters

V_{RRM}	=	400	V
I_{FAVm}	=	7 110	A
I_{FSM}	=	55 000	A
V_{TO}	=	0.740	V
r_T	=	0.026	mΩ

Types

type	V_{RRM}
5SDD 71B0400	400 V
5SDD 71B0200	200 V
Conditions: $T_j = -40 \div 170$ °C, half sine waveform, $f = 50$ Hz	

Mechanical data

F_m	Mounting force	22 ± 2 kN
m	Weight	0.14 kg
D_s	Surface creepage distance	4 mm
D_a	Air strike distance	4 mm

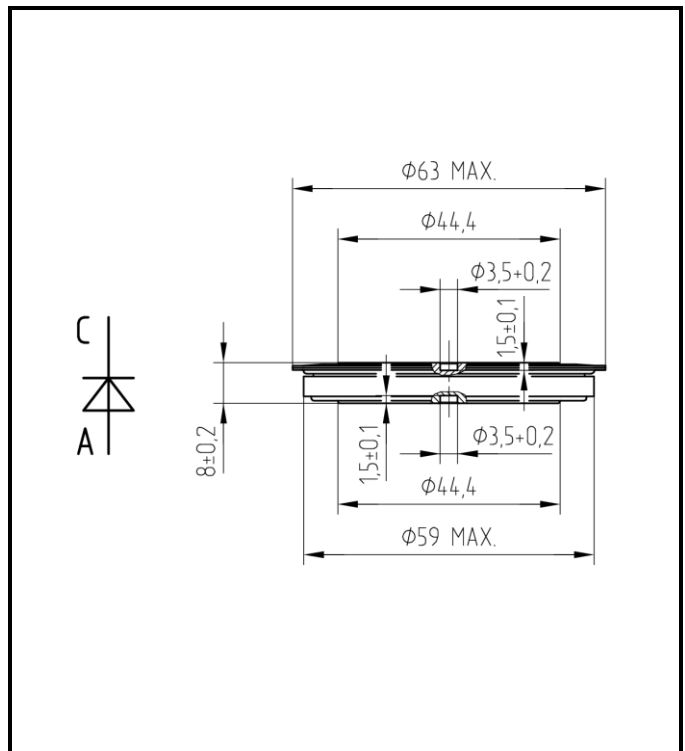


Fig. 1 Case



ABB s.r.o.

Novodvorska 1768/138a, 142 21 Praha 4, Czech Republic

tel.: +420 261 306 250, <http://www.abb.com/semiconductors>

Maximum Ratings			Maximum Limits	Unit
V_{RRM}	Repetitive peak reverse voltage $T_j = -40 \div 170 \text{ }^\circ\text{C}$	5SDD 71B0400 5SDD 71B0200	400 200	V
I_{FAVm}	Average forward current $T_c = 85^\circ\text{C}$		7 110	A
I_{FRMS}	RMS forward current $T_c = 85^\circ\text{C}$		11 200	A
I_R	Repetitive reverse current $V_R = V_{RRM}$		50	mA
I_{FSM}	Nonrepetitive peak surge current $t_p = 10 \text{ ms}, V_R = 0 \text{ V}, \text{ half sine pulse}$		55 000	A
$\int I^2 dt$	Limiting load integral $t_p = 10 \text{ ms}, V_R = 0 \text{ V}, \text{ half sine pulse}$		15 125 000	A²s
$T_{jmin} - T_{jmax}$	Operating temperature range		- 40 \div 170	$^\circ\text{C}$
$T_{stgmin} - T_{stgmax}$	Storage temperature range		- 40 \div 170	$^\circ\text{C}$

Unless otherwise specified $T_j = 170 \text{ }^\circ\text{C}$

Characteristics		Value			Unit
		min	typ	max	
V_{TO}	Threshold voltage			0.740	V
r_T	Forward slope resistance $I_{F1} = 5\,000 \text{ A}, I_{F2} = 15\,000 \text{ A}$			0.026	mΩ
V_{FM}	Maximum forward voltage	$I_{FM} = 5\,000 \text{ A}, T_j = 25 \text{ }^\circ\text{C}$		1.05	V
		$I_{FM} = 5\,000 \text{ A}$		0.87	
Q_{rr}	Recovered charge $I_{FM} = 1000 \text{ A}, di/dt = -30 \text{ A}/\mu\text{s}, V_R = 50 \text{ V}$		300		μC

Unless otherwise specified $T_j = 170 \text{ }^\circ\text{C}$

Thermal Specifications			Value	Unit
R_{thjc}	Thermal resistance junction to case	<i>double side cooling</i>	10	K/kW
		<i>single side cooling</i>	20	K/kW
R_{thch}	Thermal resistance case to heatsink	<i>double side cooling</i>	5	K/kW
		<i>single side cooling</i>	10	K/kW

ABB s.r.o., Novodvorska 1768/138a, 142 21 Praha 4, Czech Republic

Analytical function for transient thermal impedance

$$Z_{thjc} = \sum_{i=1}^4 R_i (1 - \exp(-t / \tau_i))$$

$F_m = 22 \pm 2$ kN, Double side cooled

i	1	2	3	4
R_i (K/kW)	2.33	4.80	2.00	0.87
τ_i (s)	0.29	0.14	0.027	0.0011

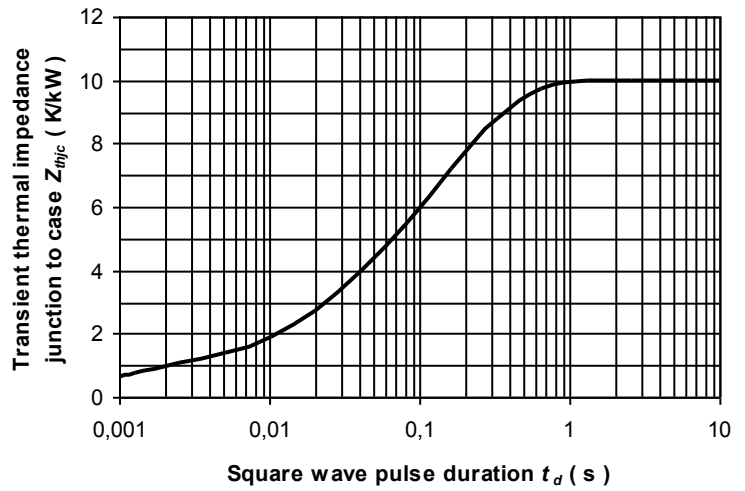


Fig. 2 Dependence transient thermal impedance junction to case on square pulse

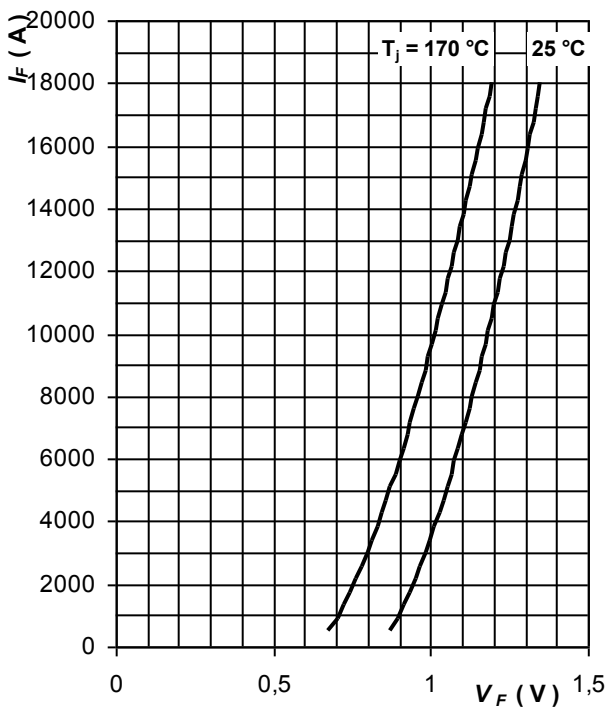


Fig. 3 Maximum forward voltage drop characteristics

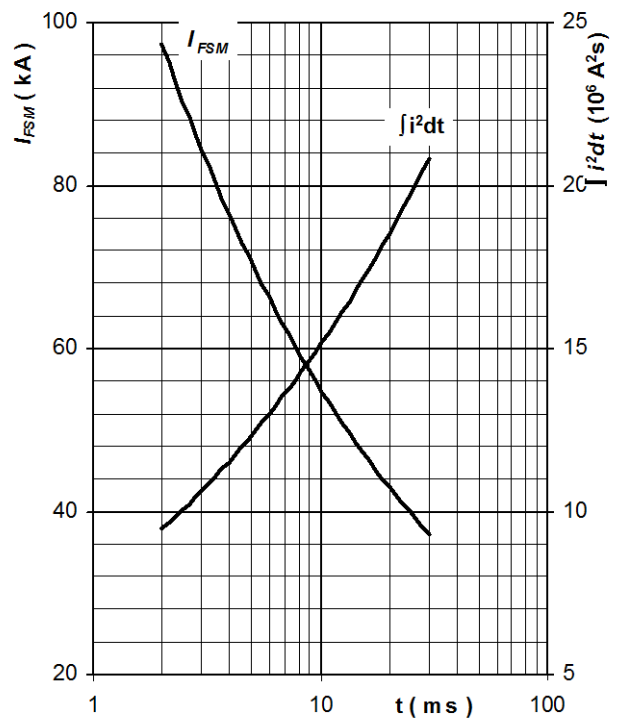


Fig. 4 Surge forward current vs. pulse length, half sine wave, single pulse, $V_R = 0$ V, $T_j = T_{jmax}$

ABB s.r.o., Novodvorska 1768/138a, 142 21 Praha 4, Czech Republic

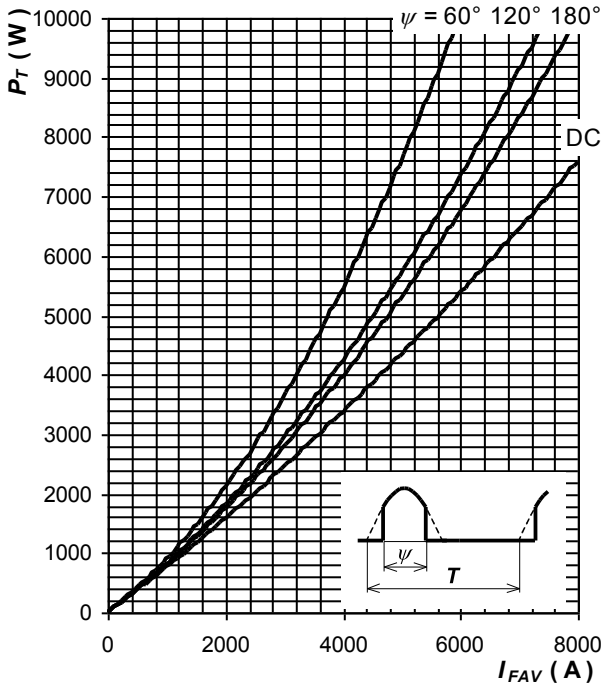


Fig. 5 Forward power loss vs. average forward current, sine waveform, $f = 50$ Hz

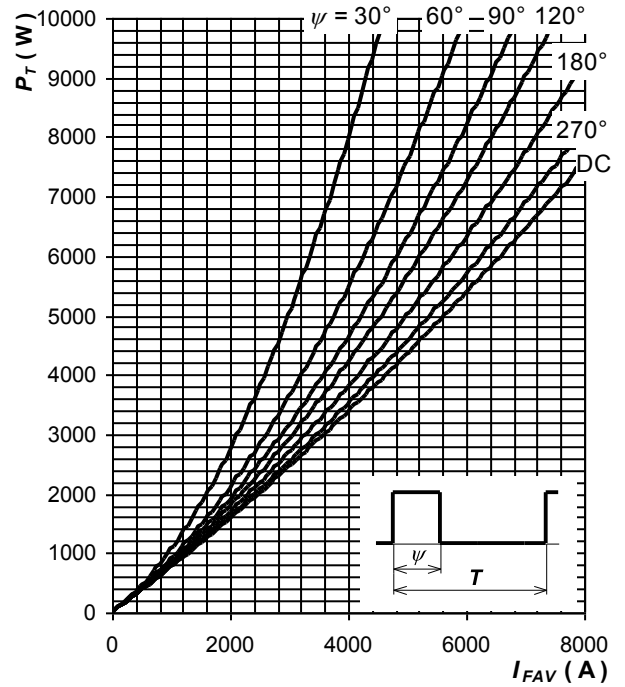


Fig. 6 Forward power loss vs. average forward current, square waveform, $f = 50$ Hz

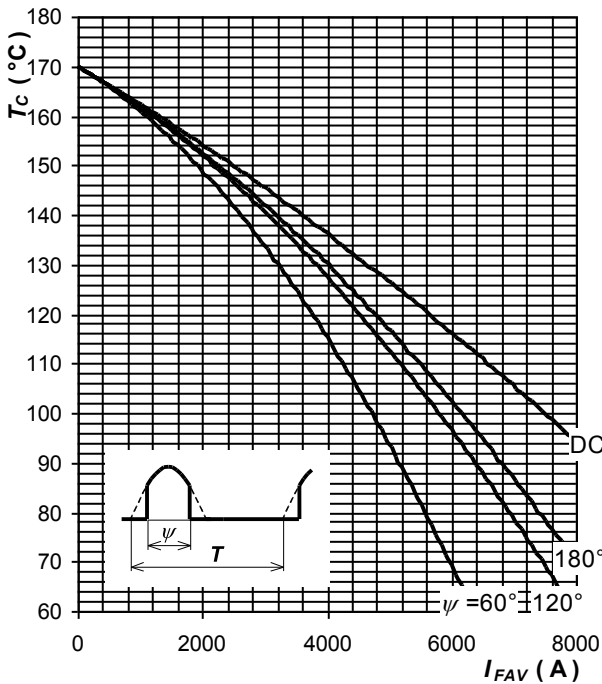


Fig. 7 Max. case temperature vs. aver. forward current, sine waveform, $f = 50$ Hz

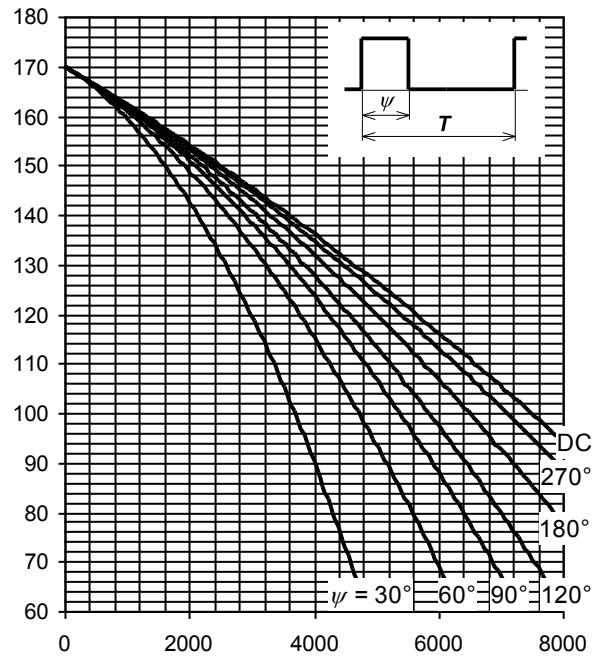


Fig. 8 Max. case temperature vs. aver. forward current, square waveform, $f = 50$ Hz

ABB s.r.o., Novodvorska 1768/138a, 142 21 Praha 4, Czech Republic

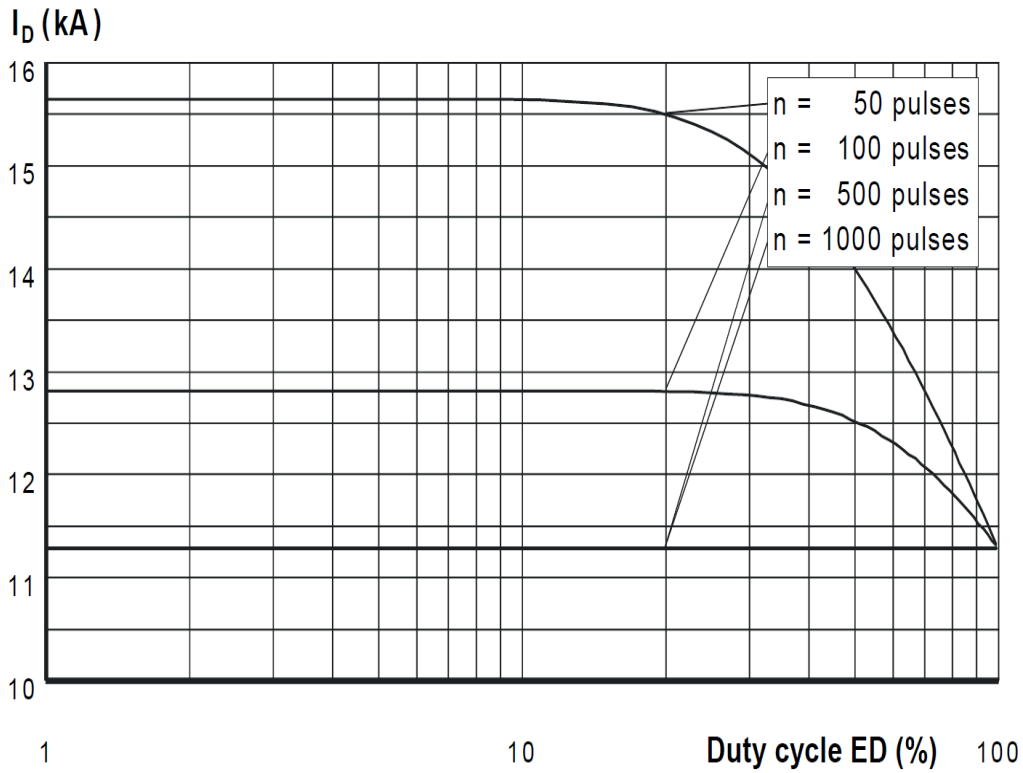


Fig. 9 Current load capability,
 DC output current with single-phase centre tap vs. duty cycle
 f = 1000 Hz, square wave, T_c = 100 °C

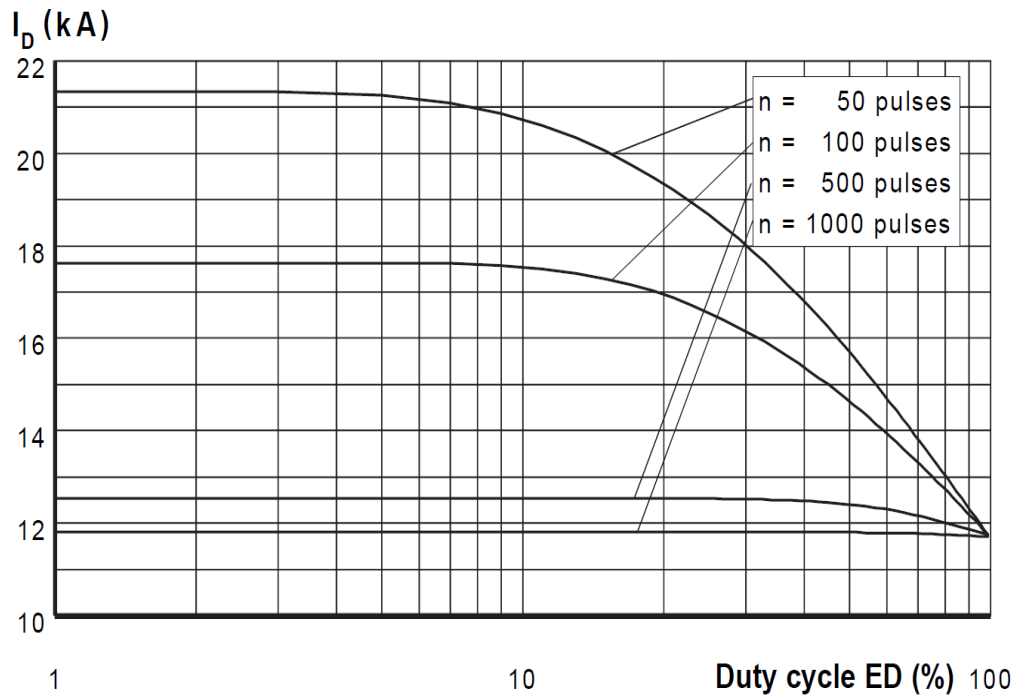


Fig. 10 Current load capacity, cont.,
 DC output current with single-phase centre tap vs. duty cycle
 f = 1000 Hz, square wave, T_n = 60 °C

ABB s.r.o., Novodvorska 1768/138a, 142 21 Praha 4, Czech Republic

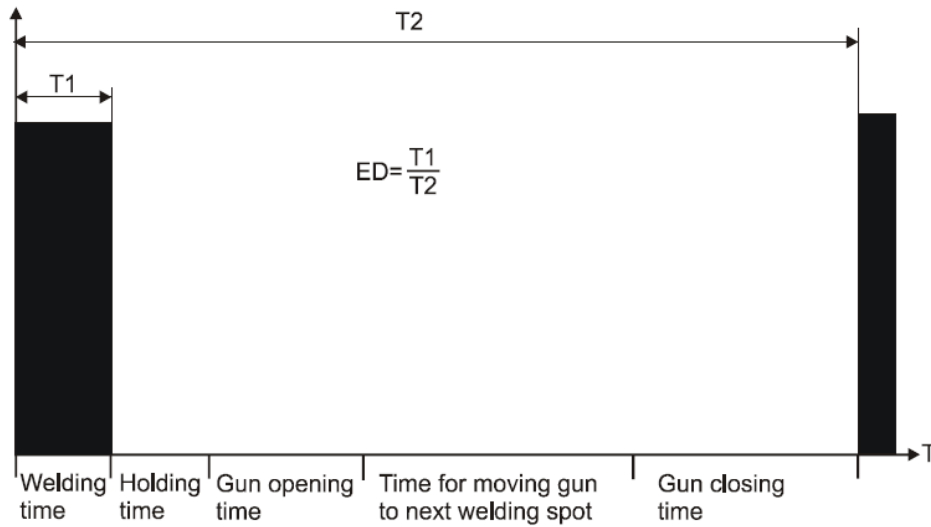


Fig. 11 Definition of ED for typical welding sequence

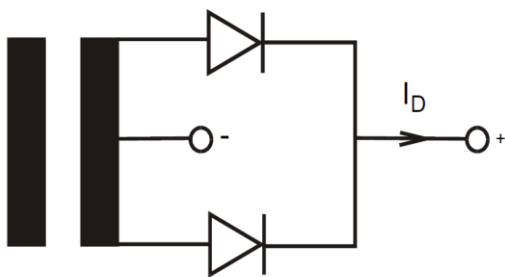


Fig. 12 Definition of I_D for single-phase centre tap

Notes:

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Rectifiers](#) category:

Click to view products by [ABB](#) manufacturer:

Other Similar products are found below :

[70HFR40](#) [RL252-TP](#) [1N5397](#) [NTE5841](#) [NTE6038](#) [SCF5000](#) [1N4002G](#) [1N4005-TR](#) [JANS1N6640US](#) [481235F](#) [RRE02VS6SGTR](#) [067907F](#)
[MS306](#) [70HF40](#) [US2JFL-TP](#) [A1N5404G-G](#) [CRS04\(T5L,TEMQ\)](#) [ACGRA4007-HF](#) [ACGRB207-HF](#) [CLH03\(TE16L,Q\)](#) [ACGRC307-HF](#)
[ACEFC304-HF](#) [NTE6356](#) [NTE6359](#) [NTE6002](#) [NTE6023](#) [NTE6039](#) [NTE6077](#) [85HFR60](#) [40HFR60](#) [1N1186RA](#) [70HF120](#) [85HFR80](#)
[D126A45C](#) [SCF7500](#) [D251N08B](#) [SCHJ22.5K](#) [SM100](#) [SCPA2](#) [SDHD5K](#) [VS-12FL100S10](#) [ACGRA4001-HF](#) [D1821SH45T PR](#) [D1251S45T](#)
[NTE5990](#) [NTE6358](#) [NTE6162](#) [NTE5850](#) [SKN20/08](#) [SKN300/16](#)