Schottky Diode

preliminary

|		
V_{RRM}	=	**200** V
I_{FAV}	= 2x	**35** A
V_F	=	**0.79** V
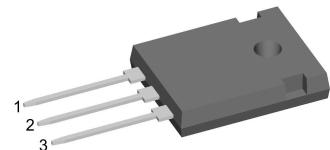
High Performance Schottky Diode
Low Loss and Soft Recovery
Common Cathode
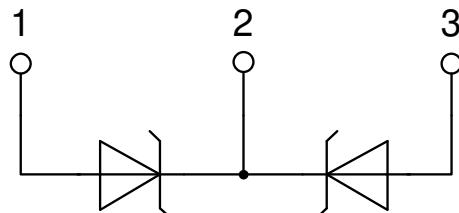
Part number

DSA70C200HB

Backside: cathode

Features / Advantages:
- Very low Vf
- Extremely low switching losses
- Low Irm values
- Improved thermal behaviour
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching

Applications:
- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Package: TO-247
- Industry standard outline
- RoHS compliant
- Epoxy meets UL 94V-0

Disclaimer Notice
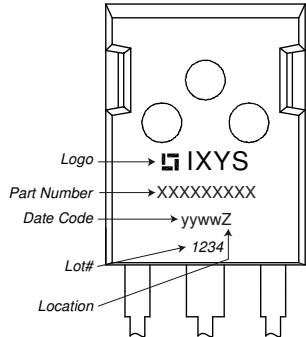
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Ratings

Symbol	Definition	Conditions		min.	typ.	max.	Unit
V_{RSM}	max. non-repetitive reverse blocking voltage	T_{VJ} = 25°C				200	V
V_{RRM}	max. repetitive reverse blocking voltage	T_{VJ} = 25°C				200	V
I_R	reverse current, drain current	V_R = 200 V	T_{VJ} = 25°C			640	µA
		V_R = 200 V	T_{VJ} = 125°C			7	mA
V_F	forward voltage drop	I_F = 35 A	T_{VJ} = 25°C			0.93	V
		I_F = 70 A				1.07	V
		I_F = 35 A	T_{VJ} = 125°C			0.79	V
		I_F = 70 A				0.95	V
I_{FAV}	average forward current	T_C = 150°C	T_{VJ} = 175°C			35	A
		rectangular d = 0.5					
V_{F0}	threshold voltage } for power loss calculation only		T_{VJ} = 175°C			0.55	V
r_F	slope resistance }					4.8	mΩ
R_{thJC}	thermal resistance junction to case					0.7	K/W
R_{thCH}	thermal resistance case to heatsink				0.25		K/W
P_{tot}	total power dissipation	T_C = 25°C				215	W
I_{FSM}	max. forward surge current	t = 10 ms; (50 Hz), sine; V_R = 0 V	T_{VJ} = 45°C			550	A
C_J	junction capacitance	V_R = 24 V f = 1 MHz	T_{VJ} = 25°C		261		pF

IXYS reserves the right to change limits, conditions and dimensions.   Data according to IEC 60747and per semiconductor unless otherwise specified   20210309c

DSA70C200HB
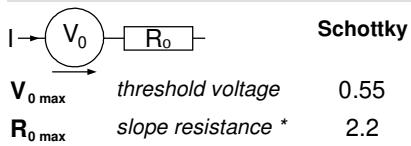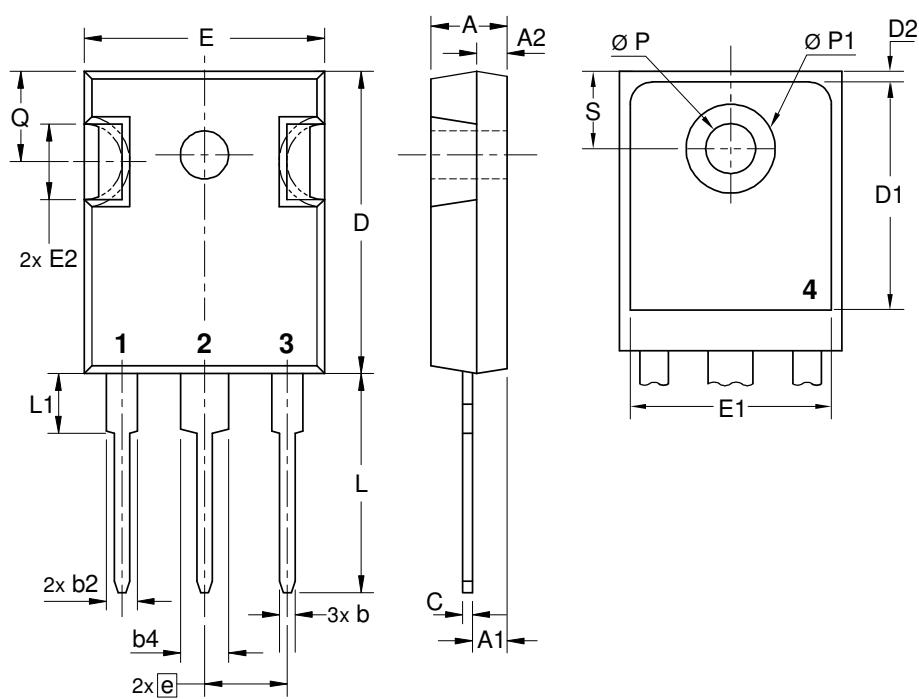
Package	TO-247		Ratings			
Symbol	**Definition**	**Conditions**	**min.**	**typ.**	**max.**	**Unit**
I_{RMS}	*RMS current*	per terminal [1]			70	A
T_{VJ}	*virtual junction temperature*		-55		175	°C
T_{op}	*operation temperature*		-55		150	°C
T_{stg}	*storage temperature*		-55		150	°C
Weight				6		g
M_D	*mounting torque*		0.8		1.2	Nm
F_C	*mounting force with clip*		20		120	N

Product Marking

Logo → IXYS
Part Number → XXXXXXXXX
Date Code → yywwZ
Lot# → 1234
Location

Part description
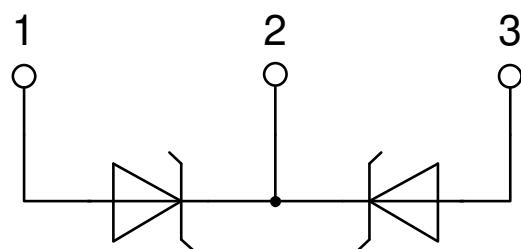
D = Diode
S = Schottky Diode
A = low VF
70 = Current Rating [A]
C = Common Cathode
200 = Reverse Voltage [V]
HB = TO-247AD (3)

Ordering	Ordering Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DSA70C200HB	DSA70C200HB	Tube	30	509195

## Equivalent Circuits for Simulation   ** on die level* $T_{VJ} = 175°C$

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$V_{0 max}$	*threshold voltage*	0.55		V
$R_{0 max}$	*slope resistance **	2.2		mΩ

Data according to IEC 60747and per semiconductor unless otherwise specified   20210309c

Outlines   TO-247

| Sym.	Inches		Millimeter	
	min.	max.	min.	max.
A	0.185	0.209	4.70	5.30
A1	0.087	0.102	2.21	2.59
A2	0.059	0.098	1.50	2.49
D	0.819	0.845	20.79	21.45
E	0.610	0.640	15.48	16.24
E2	0.170	0.216	4.31	5.48
e	0.215 BSC		5.46 BSC	
L	0.780	0.800	19.80	20.30
L1	-	0.177	-	4.49
Ø P	0.140	0.144	3.55	3.65
Q	0.212	0.244	5.38	6.19
S	0.242 BSC		6.14 BSC	
b	0.039	0.055	0.99	1.40
b2	0.065	0.094	1.65	2.39
b4	0.102	0.135	2.59	3.43
c	0.015	0.035	0.38	0.89
D1	0.515	-	13.07	-
D2	0.020	0.053	0.51	1.35
E1	0.530	-	13.45	-
Ø P1	-	0.29	-	7.39
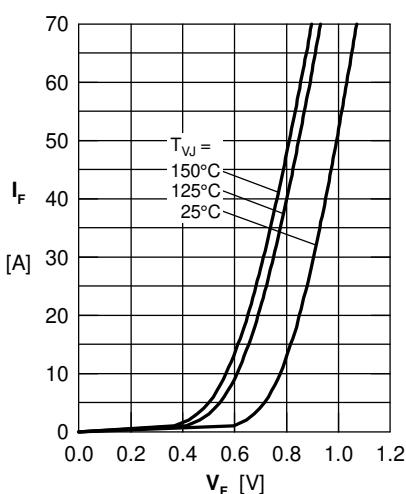
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Fig. 1 Maximum forward voltage
drop characteristics
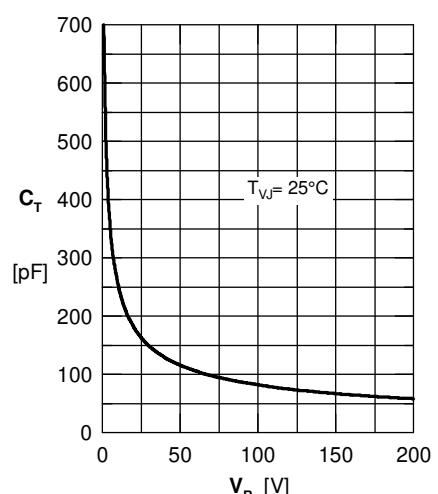
Fig. 3 Typ. junction capacitance
C_T vs. reverse voltage V_R
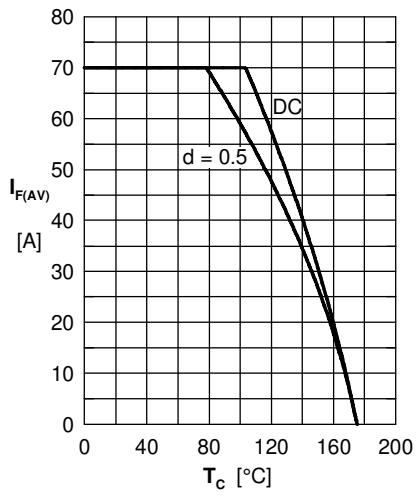
Fig. 4 Avg: forward current $I_{F(AV)}$
vs. case temperature T_C
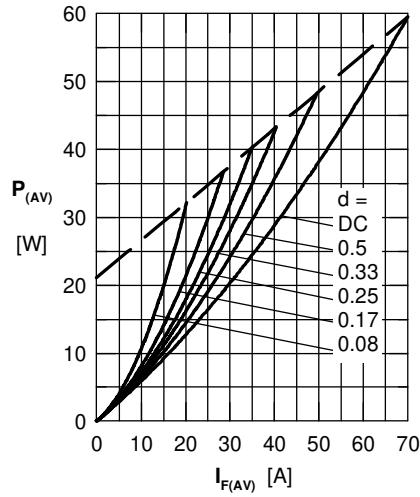

Fig. 5 Forward power loss
characteristics
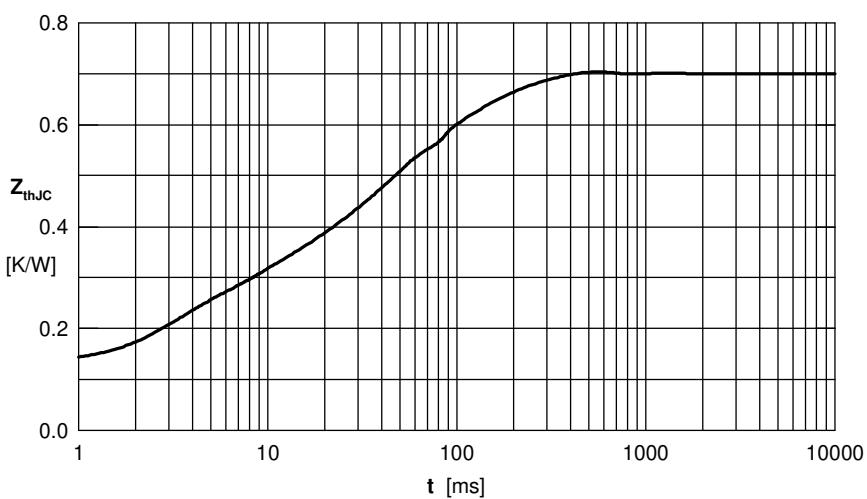
Fig. 6 Transient thermal impedance junction to case

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