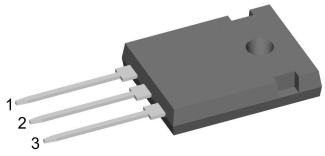
Schottky Diode

V_{RRM} = 200 V
I_{FAV} = 2x 45 A
V_F = 0.79 V

High Performance Schottky Diode
Low Loss and Soft Recovery
Common Cathode

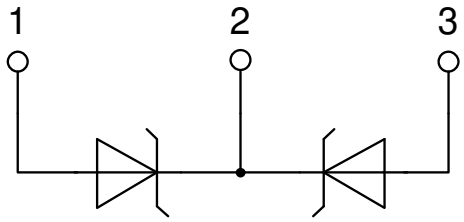
Part number

DSA90C200HR



Backside: isolated

E72873



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

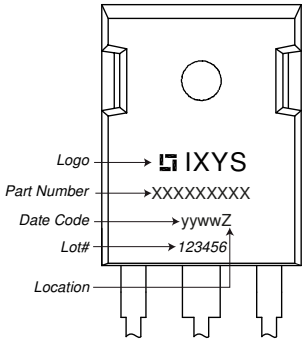
Package: ISO247

- Isolation Voltage: 3600 V~
- Industry standard outline
- RoHS compliant
- Epoxy meets UL 94V-0
- Soldering pins for PCB mounting
- Backside: DCB ceramic
- Reduced weight
- Advanced power cycling

Schottky				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			2	mA
		V_R = 200 V	T_{VJ} = 125°C			5	mA
V_F	*forward voltage drop*	I_F = 45 A	T_{VJ} = 25°C			0.91	V
		I_F = 90 A				1.10	V
		I_F = 45 A	T_{VJ} = 125°C			0.79	V
		I_F = 90 A				1.03	V
I_{FAV}	*average forward current*	T_C = 145°C	T_{VJ} = 175°C			45	A
		rectangular d = 0.5					
V_{F0}	*threshold voltage* } *for power loss calculation only*		T_{VJ} = 175°C			0.49	V
r_F	*slope resistance* }					5.5	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			600	A
C_J	*junction capacitance*	V_R = 24 V f = 1 MHz	T_{VJ} = 25°C		394		pF

Package ISO247				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
$d_{Spp/App}$	*creepage distance on surface | striking distance through air*		*terminal to terminal*	2.7			mm
$d_{Spb/Apb}$			*terminal to backside*	4.1			mm
V_{ISOL}	*isolation voltage*	t = 1 second	50/60 Hz, RMS; I_{ISOL} ≤ 1 mA	3600			V
		t = 1 minute		3000			V

Product Marking



Part description

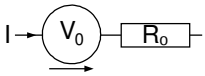
D = Diode
S = Schottky Diode
A = low VF
90 = Current Rating [A]
C = Common Cathode
200 = Reverse Voltage [V]
HR = ISO247 (3)

Ordering	Ordering Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DSA90C200HR	DSA90C200HR	Tube	30	508368

Similar Part	Package	Voltage class
DSSK60-02AR	ISOPLUS247 (3)	200
DSSK60-02A	TO-247AD (3)	200

Equivalent Circuits for Simulation

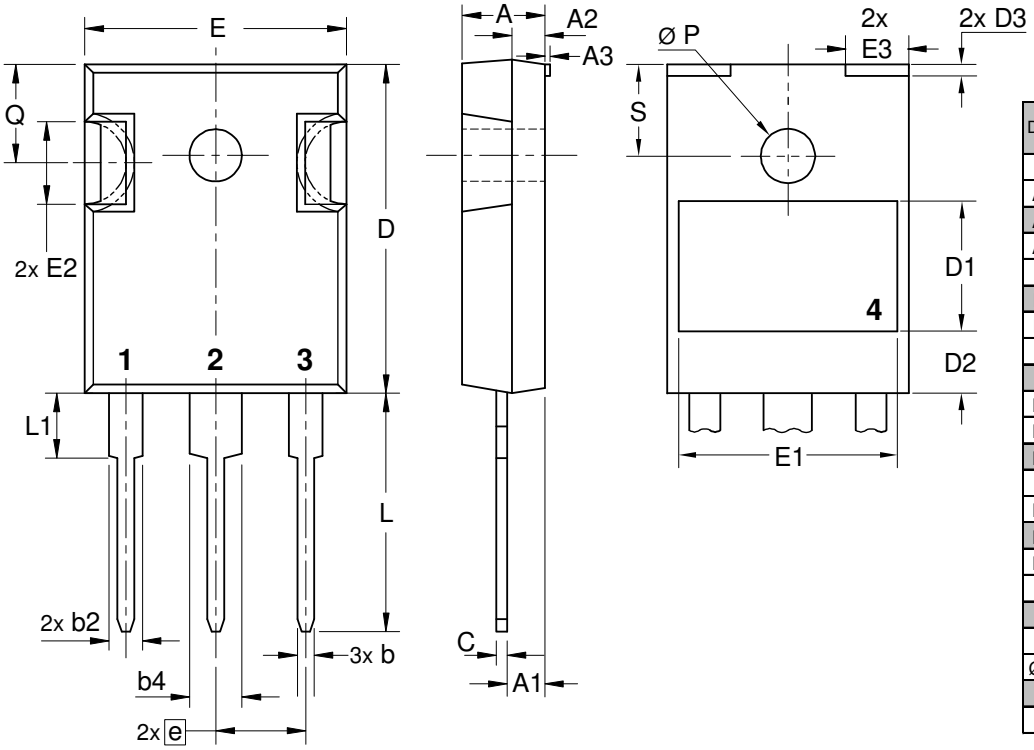
** on die level* T_{VJ} = 175°C



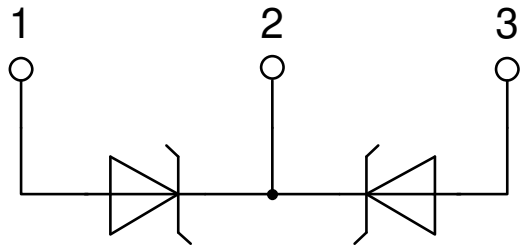
Schottky

$V_{0\,max}$	*threshold voltage*	0.49	V
$R_{0\,max}$	*slope resistance **	2.9	mΩ

Outlines ISO247



Dim.	Millimeter		Inches	
	min	max	min	max
A	4.70	5.30	0.185	0.209
A1	2.21	2.59	0.087	0.102
A2	1.50	2.49	0.059	0.098
A3	typ. 0.05		typ. 0.002	
b	0.99	1.40	0.039	0.055
b2	1.65	2.39	0.065	0.094
b4	2.59	3.43	0.102	0.135
c	0.38	0.89	0.015	0.035
D	20.79	21.45	0.819	0.844
D1	typ. 8.90		typ. 0.350	
D2	typ. 2.90		typ. 0.114	
D3	typ. 1.00		typ. 0.039	
E	15.49	16.24	0.610	0.639
E1	typ. 13.45		typ. 0.530	
E2	4.31	5.48	0.170	0.216
E3	typ. 4.00		typ. 0.157	
e	5.46 BSC		0.215 BSC	
L	19.80	20.30	0.780	0.799
L1	-	4.49	-	0.177
Ø P	3.55	3.65	0.140	0.144
Q	5.38	6.19	0.212	0.244
S	6.14 BSC		0.242 BSC	



Schottky

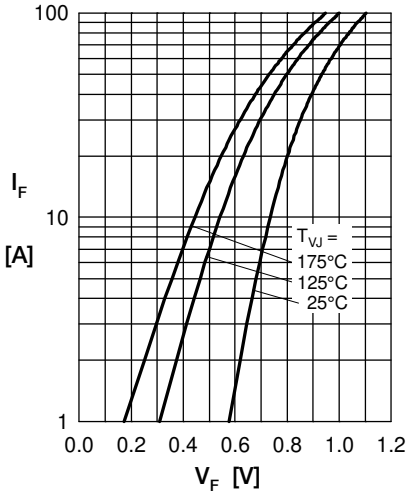


Fig. 1 Max. forward voltage drop characteristics

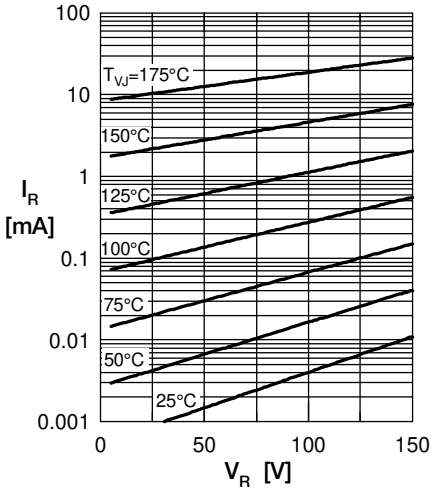


Fig. 2 Typ. reverse current I_R vs. reverse voltage V_R

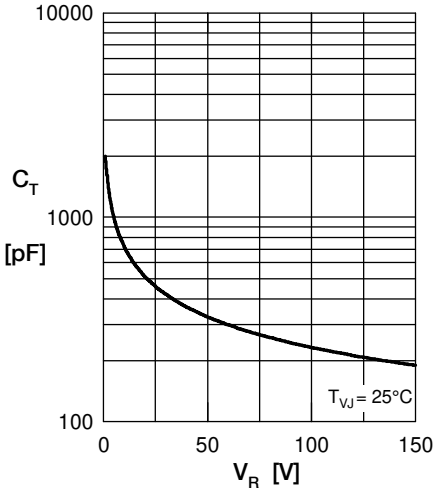


Fig. 3 Typ. junction capacitance C_T vs. reverse voltage V_R

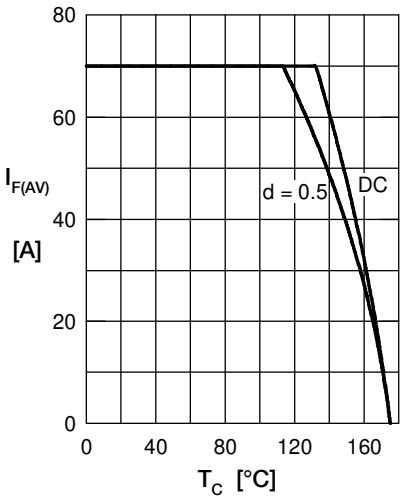


Fig. 4 Avg. forward current $I_{F(AV)}$ vs. case temp. T_C

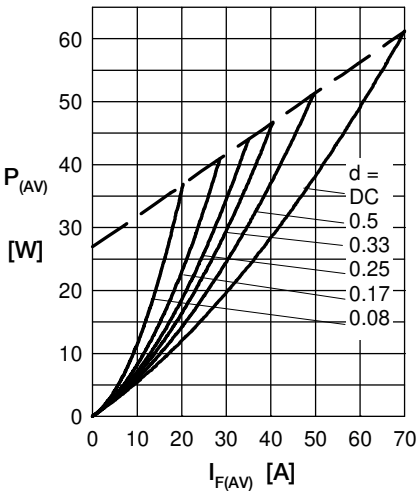
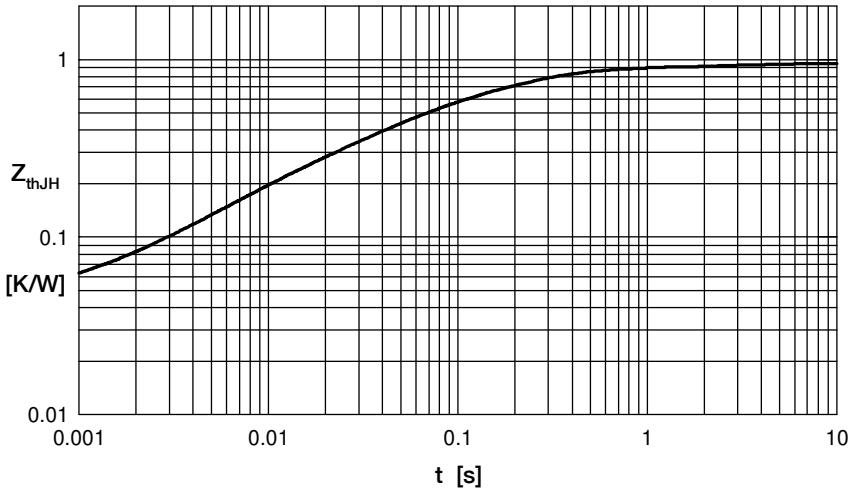


Fig. 5 Forward power loss characteristics



R_{thi}	t_i
0.041	0.0002
0.087	0.0065
0.258	0.037
0.486	0.182
0.078	2.43

Note: All curves are per diode

Fig. 6 Transient thermal impedance junction to heatsink

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