

## Schottky Diode Gen<sup>2</sup>

$$V_{RRM} = 100V$$

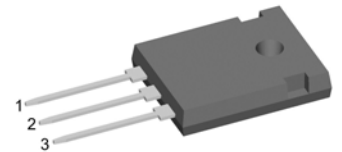
$$I_{FAV} = 2 \times 35A$$

$$V_F = 0.74V$$

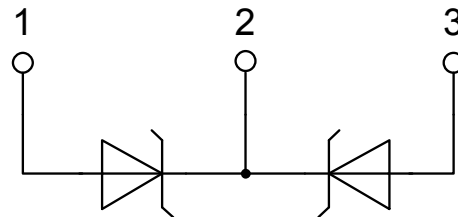
High Performance Schottky Diode  
Low Loss and Soft Recovery  
Common Cathode

Part number

DSA70C100HB



Backside: cathode



### Features / Advantages:

- Very low  $V_f$
- Extremely low switching losses
- Low  $I_{rm}$  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

Schottky				Ratings		
Symbol	Definition	Conditions	min.	typ.	max.	Unit
$V_{RSM}$	max. non-repetitive reverse blocking voltage	$T_{VJ} = 25^{\circ}C$			100	V
$V_{RRM}$	max. repetitive reverse blocking voltage	$T_{VJ} = 25^{\circ}C$			100	V
$I_R$	reverse current, drain current	$V_R = 100 V$	$T_{VJ} = 25^{\circ}C$		680	$\mu A$
		$V_R = 100 V$	$T_{VJ} = 125^{\circ}C$		7.5	mA
$V_F$	forward voltage drop	$I_F = 35 A$	$T_{VJ} = 25^{\circ}C$		0.92	V
		$I_F = 70 A$			1.10	V
		$I_F = 35 A$	$T_{VJ} = 125^{\circ}C$		0.74	V
		$I_F = 70 A$			0.95	V
$I_{FAV}$	average forward current	$T_C = 150^{\circ}C$ rectangular $d = 0.5$	$T_{VJ} = 175^{\circ}C$		35	A
$V_{FO}$	threshold voltage	} for power loss calculation only	$T_{VJ} = 175^{\circ}C$		0.45	V
$r_F$	slope resistance				6	m $\Omega$
$R_{thJC}$	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		$T_C = 25^{\circ}C$		160	W
$I_{FSM}$	max. forward surge current	$t = 10 ms; (50 Hz), sine; V_R = 0 V$	$T_{VJ} = 45^{\circ}C$		550	A
$C_J$	junction capacitance	$V_R = 12 V \quad f = 1 MHz$	$T_{VJ} = 25^{\circ}C$		406	pF

Package TO-247			Ratings			
Symbol	Definition	Conditions	min.	typ.	max.	Unit
$I_{RMS}$	RMS current	per terminal <sup>1)</sup>			50	A
$T_{VJ}$	virtual junction temperature		-55		175	°C
$T_{op}$	operation temperature		-55		150	°C
$T_{stg}$	storage temperature		-55		150	°C
<b>Weight</b>				6		g
$M_D$	mounting torque		0.8		1.2	Nm
$F_C$	mounting force with clip		20		120	N

**Product Marking**

**Part number**

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

Ordering	Part Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DSA70C100HB	DSA70C100HB	Tube	30	502788

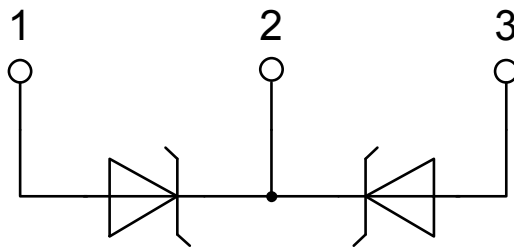
Similar Part	Package	Voltage class
DSA80C100PB	TO-220AB (3)	100

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

**Schottky**

$V_{0\ max}$	threshold voltage	0.45	V
$R_{0\ max}$	slope resistance *	3.4	mΩ

**Outlines TO-247**



## Schottky

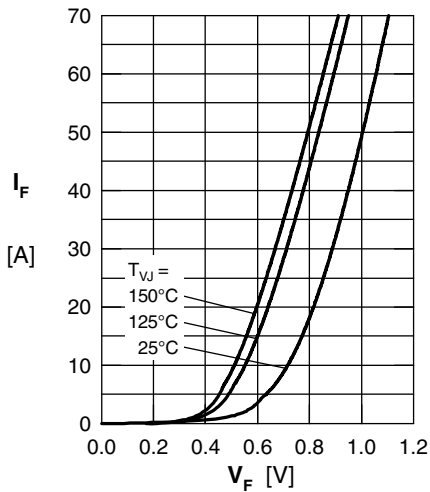


Fig. 1 Maximum forward voltage drop characteristics

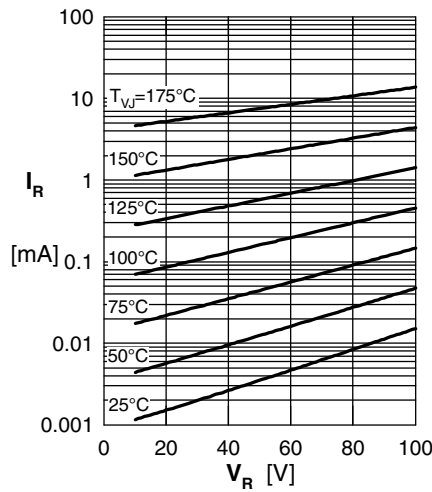


Fig. 2 Typ. reverse current  $I_R$  vs. reverse voltage  $V_R$

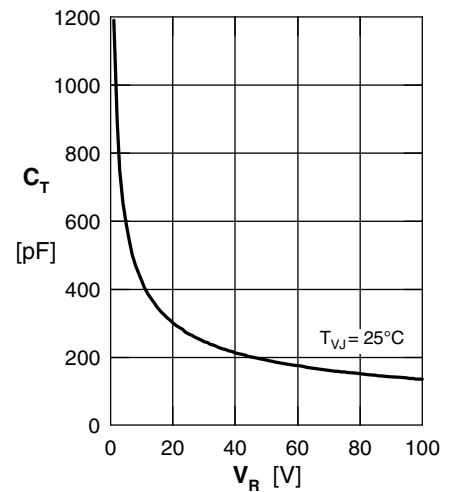


Fig. 3 Typ. junction capacitance  $C_T$  vs. reverse voltage  $V_R$

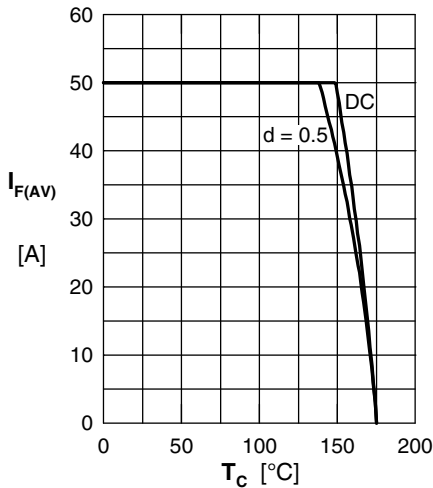


Fig. 4 Average forward current  $I_{F(AV)}$  vs. case temperature  $T_C$

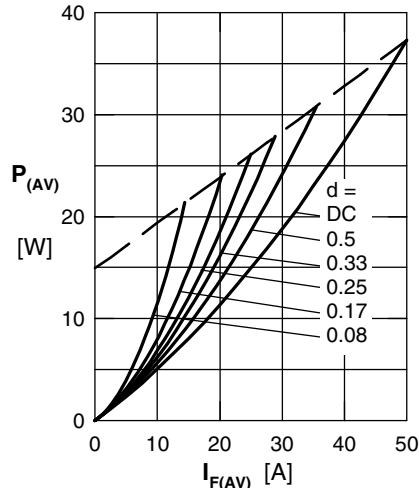


Fig. 5 Forward power loss characteristics

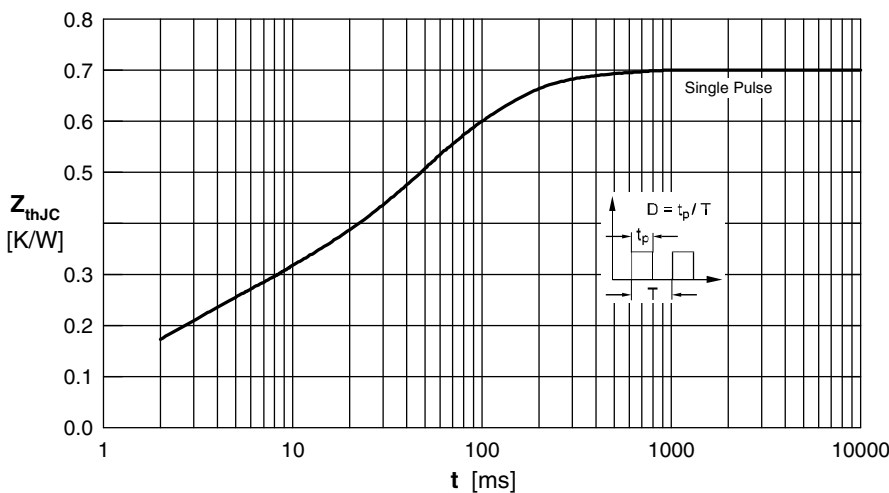


Fig. 6 Transient thermal impedance junction to case

Note: All curves are per diode

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