

Schottky

High Performance Schottky Diode
Low Loss and Soft Recovery
Common Cathode

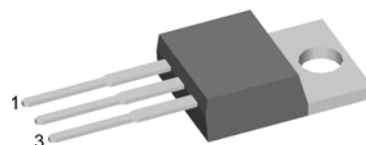
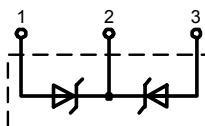
$$V_{RRM} = 45 \text{ V}$$

$$I_{FAV} = 2 \times 10 \text{ A}$$

$$V_F = 0.62 \text{ V}$$

Part number (Marking on product)

DSA 20 C 45PB



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
- Low losses

Applications:

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

Package:

TO-220AB

- Industry standard outline
- Epoxy meets UL 94V-0
- RoHS compliant

Ratings

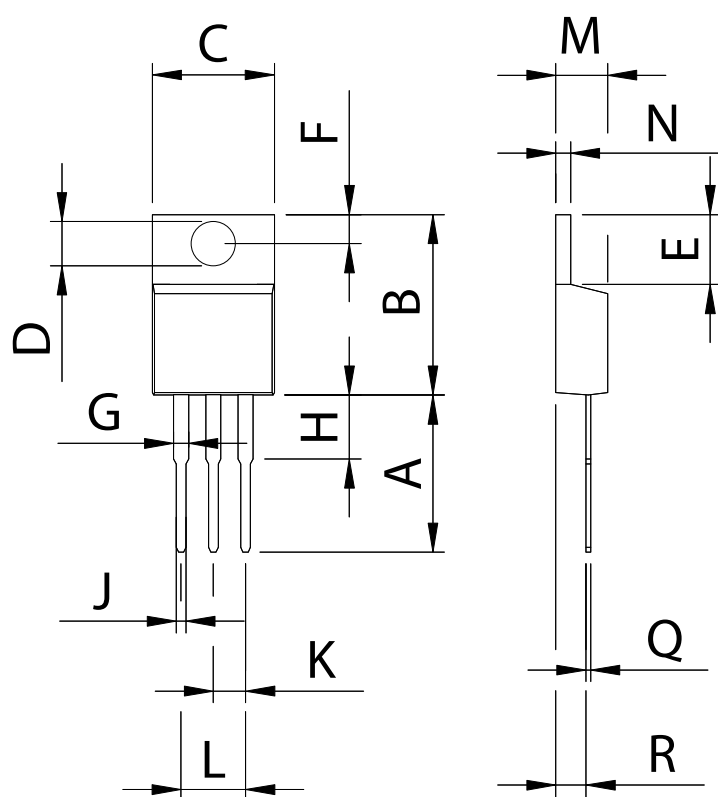
Symbol	Definition	Conditions	min.	typ.	max.	Unit
V_{RRM}	max. repetitive reverse voltage	$T_{VJ} = 25^\circ\text{C}$			45	V
I_R	reverse current	$V_R = 45 \text{ V}$ $T_{VJ} = 25^\circ\text{C}$			0.2	mA
		$V_R = 45 \text{ V}$ $T_{VJ} = 125^\circ\text{C}$			2	mA
V_F	forward voltage	$I_F = 10 \text{ A}$ $T_{VJ} = 25^\circ\text{C}$			0.75	V
		$I_F = 20 \text{ A}$ $T_{VJ} = 25^\circ\text{C}$			0.88	V
		$I_F = 10 \text{ A}$ $T_{VJ} = 125^\circ\text{C}$			0.62	V
		$I_F = 20 \text{ A}$ $T_{VJ} = 125^\circ\text{C}$			0.76	V
I_{FAV}	average forward current	rectangular, $d = 0.5$ $T_C = 155^\circ\text{C}$			10	A
V_{F0}	threshold voltage	} for power loss calculation only $T_{VJ} = 175^\circ\text{C}$			0.42	V
r_F	slope resistance				13.3	m Ω
R_{thJC}	thermal resistance junction to case				2.60	K/W
T_{VJ}	virtual junction temperature		-55		175	$^\circ\text{C}$
P_{tot}	total power dissipation	$T_C = 25^\circ\text{C}$			60	W
I_{FSM}	max. forward surge current	$t_p = 10 \text{ ms (50 Hz), sine}$ $T_{VJ} = 45^\circ\text{C}$			90	A
C_j	junction capacitance	$V_R = \text{V}; f = 1 \text{ MHz}$ $T_{VJ} = 25^\circ\text{C}$				pF
E_{AS}	non-repetitive avalanche energy	$I_{AS} = \text{A}; L = 100 \mu\text{H}$ $T_{VJ} = 25^\circ\text{C}$			tbd	mJ
I_{AR}	repetitive avalanche current	$V_A = 1.5 \cdot V_R$ typ.; $f = 10 \text{ kHz}$			tbd	A

Symbol	Definition	Conditions	Ratings			Unit
			min.	typ.	max.	
I_{RMS}	RMS current	per pin*			35	A
R_{thCH}	thermal resistance case to heatsink			0.50		K/W
M_D	mounting torque		0.4		0.6	Nm
F_c	mounting force with clip		20		60	N
T_{stg}	storage temperature		-55		150	°C
Weight				2		g

* I_{RMS} is typically limited by: 1. pin-to-chip resistance; or by 2. current capability of the chip.

In case of 1, a common cathode/anode configuration and a non-isolated backside, the whole current capability can be used by connecting the backside.

Outlines TO-220AB



Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	12.70	13.97	0.500	0.550
B	14.73	16.00	0.580	0.630
C	9.91	10.66	0.390	0.420
D	3.54	4.08	0.139	0.161
E	5.85	6.85	0.230	0.270
F	2.54	3.18	0.100	0.125
G	1.15	1.65	0.045	0.065
H	2.79	5.84	0.110	0.230
J	0.64	1.01	0.025	0.040
K	2.54	BSC	0.100	BSC
M	4.32	4.82	0.170	0.190
N	1.14	1.39	0.045	0.055
Q	0.35	0.56	0.014	0.022
R	2.29	2.79	0.090	0.110