

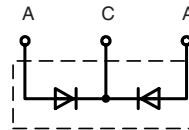
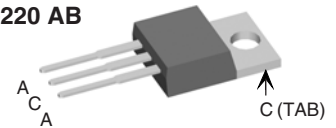
# Power Schottky Rectifier with common cathode

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

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

$$V_F = 0.56 \text{ V}$$

$V_{RSM}$	$V_{RRM}$	Type
V	V	
45	45	DSSK 20-0045A


**TO-220 AB**


A = Anode, C = Cathode, TAB = Cathode

Symbol	Conditions	Maximum Ratings	Features
$I_{FRMS}$		35 A	<ul style="list-style-type: none"> <li>• International standard package</li> <li>• Very low <math>V_F</math></li> <li>• Extremely low switching losses</li> <li>• Low <math>I_{RM}</math>-values</li> <li>• Epoxy meets UL 94V-0</li> </ul>
$I_{FAV}$	$T_C = 160^\circ\text{C}$ ; rectangular, $d = 0.5$	10 A	
$I_{FAV}$	$T_C = 160^\circ\text{C}$ ; rectangular, $d = 0.5$ ; per device	20 A	
$I_{FSM}$	$T_{VJ} = 45^\circ\text{C}$ ; $t_p = 10 \text{ ms}$ (50 Hz), sine	140 A	
$E_{AS}$	$I_{AS} = 13 \text{ A}$ ; $L = 180 \mu\text{H}$ ; $T_{VJ} = 25^\circ\text{C}$ ; non repetitive	24 mJ	
$I_{AR}$	$V_A = 1.5 \cdot V_{RRM}$ typ.; $f = 10 \text{ kHz}$ ; repetitive	1.3 A	
$(dv/dt)_{cr}$		1000 V/ $\mu\text{s}$	
$T_{VJ}$		-55...+175 $^\circ\text{C}$	
$T_{VJM}$		175 $^\circ\text{C}$	
$T_{stg}$		-55...+150 $^\circ\text{C}$	
$P_{tot}$	$T_C = 25^\circ\text{C}$	90 W	
$M_d$	mounting torque	0.4...0.6 Nm	
Weight	typical	2 g	

### Applications

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

### Advantages

- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Low losses

Symbol	Conditions	Characteristic Values	
		typ.	max.
$I_R$ ①	$V_R = V_{RRM}$ ; $T_{VJ} = 25^\circ\text{C}$		0.3 mA
	$V_R = V_{RRM}$ ; $T_{VJ} = 125^\circ\text{C}$		2.5 mA
$V_F$	$I_F = 10 \text{ A}$ ; $T_{VJ} = 125^\circ\text{C}$		0.56 V
	$I_F = 10 \text{ A}$ ; $T_{VJ} = 25^\circ\text{C}$		0.68 V
	$I_F = 20 \text{ A}$ ; $T_{VJ} = 125^\circ\text{C}$		0.69 V
$R_{thJC}$			1.7 K/W
$R_{thCH}$	0.5		K/W

Pulse test: ① Pulse Width = 5 ms, Duty Cycle < 2.0%  
Data according to IEC 60747 and per diode unless otherwise specified.

**Recommended replacement:  
DSA20C45PB/DSA30C45PB**

Dimensions see Outlines.pdf

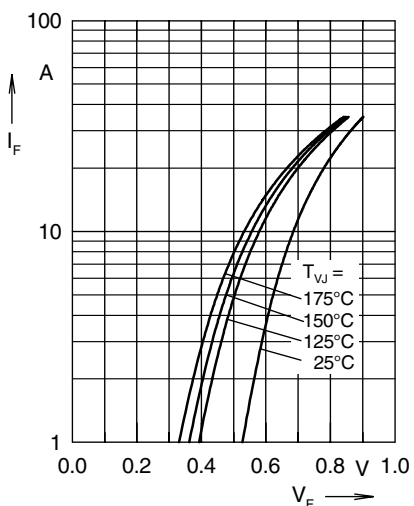


Fig. 1 Maximum forward voltage drop characteristics

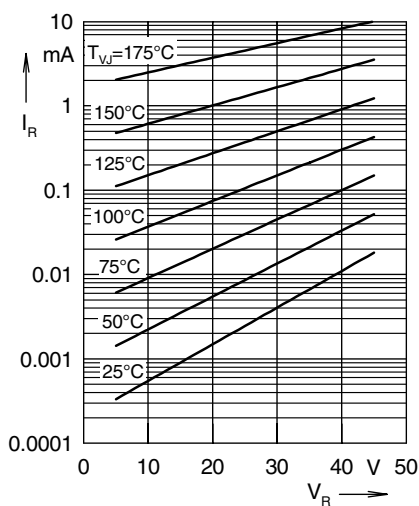


Fig. 2 Typ. value of reverse current  $I_R$  versus reverse voltage  $V_R$

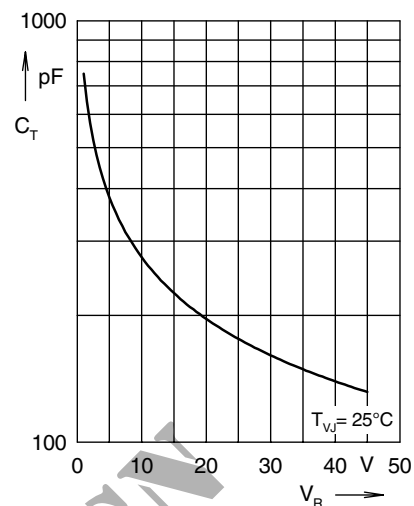


Fig. 3 Typ. junction capacitance  $C_T$  versus reverse voltage  $V_R$

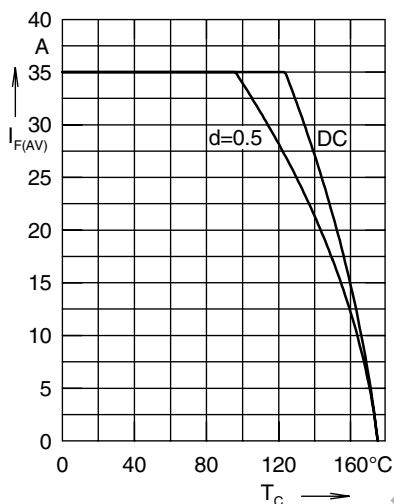


Fig. 4 Average forward current  $I_{F(AV)}$  versus case temperature  $T_C$

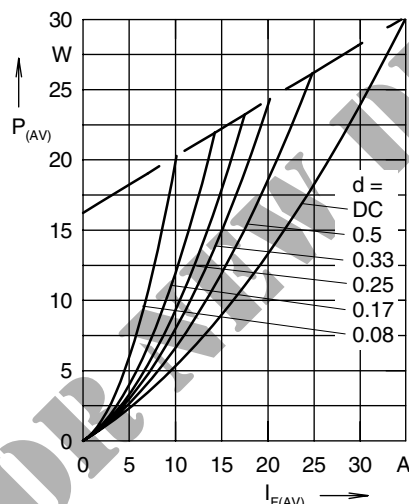


Fig. 5 Forward power loss characteristics

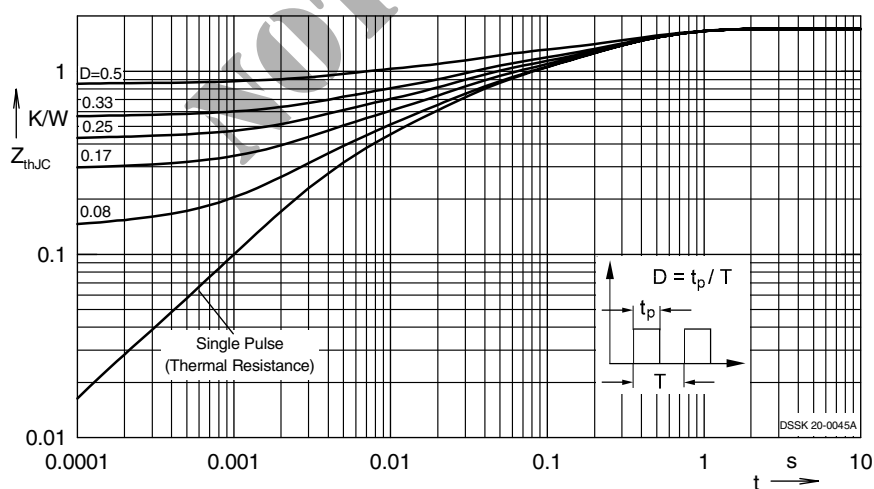


Fig. 6 Transient thermal impedance junction to case at various duty cycles

Note: All curves are per diode

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