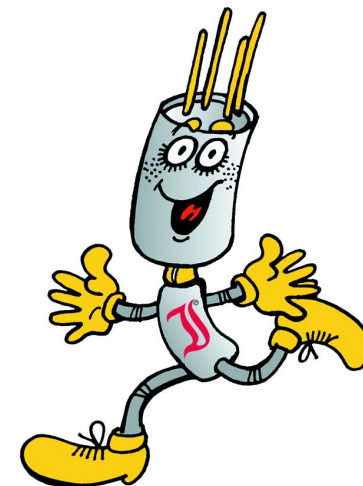


„Low Vf“ Bipolar Dioden

Eine interessante Alternative zu hochsperrenden Schottky-Dioden

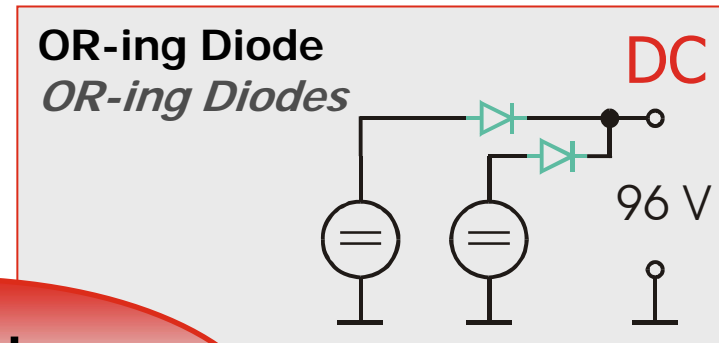
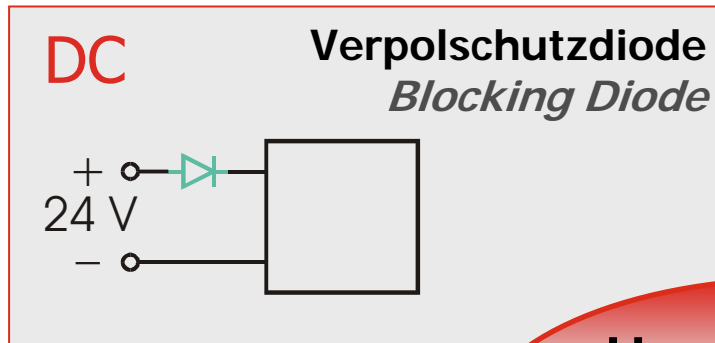
“Low Vf” Bipolar Diodes

An interesting alternative to high blocking Schottky diodes

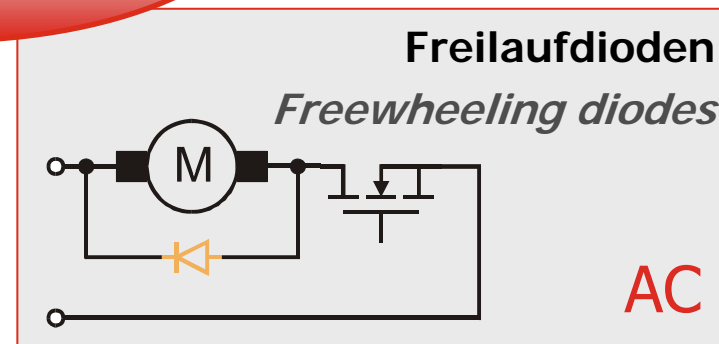
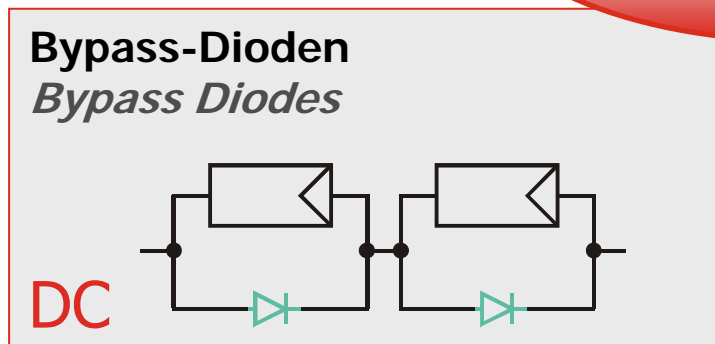


Anwendungsbeispiele von Schottky-Dioden, außerhalb der „Gleichrichtung“

*Application Examples of Schottky Diodes,
beside „Rectification“*



Hauptforderung
 $V_F \downarrow !$
Main Request



Typische Eigenschaften von Silizium-Dioden (Nennstrom 5 ... 10 A)
Typical Characteristics of Silicon Diodes (nominal current 5 ... 10 A)

	Schottky ≤ 100 V		Standard Rectifier	Ultrafast Rectifier
V_{RRM} [V]	20 ... 100		50 ... 1200	50 ... 1000
V_F [V] @ $I_F=5A$	0.55 ... 0.79		1.0	1.0 ... 1.7
I_R [μA] @ $T_j=25^\circ C$	500 ... 600		25	25
t_{rr} [ns]	<50		~ 1500	75 ... 100
Costs	<u>100%</u>		48%	57%
Example	SB5 20 ... 100		P600 A ... S	UF600 A... M

Hochsperrende Schottky-Dioden („High Vr“)

High Blocking Schottky Diodes („High Vr“)

	Schottky ≤ 100 V	Schottky > 100 V		Standard Rectifier	Ultrafast Rectifier
V_{RRM} [V]	20 ... 100	150... 200	?	50 ... 1200	50 ... 1000
V_F [V] @ $I_F=5A$	0.55 ... 0.79	0.93	?	1.0	1.0 ... 1.7
I_R [μA] @ $T_j=25^\circ C$	500 ... 600	50		25	25
t_{rr} [ns]	<50	<50		~ 1500	75 ... 100
Costs	<u>100%</u>	210%	?	48%	57%
Example	SB5 20 ... 100	Compet.		P600 A ... S	UF600 A... M

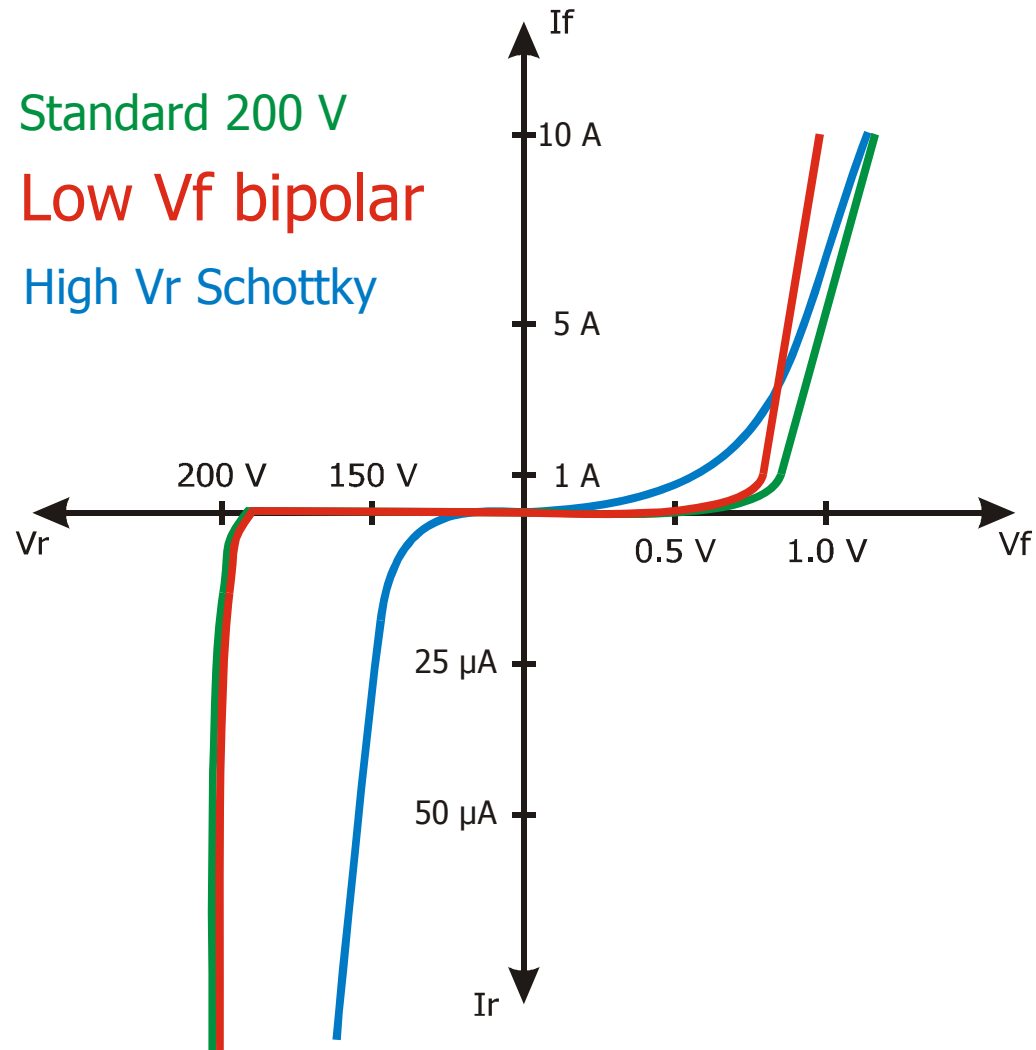
„Low Vf“ Bipolar-Dioden

„Low Vf“ Bipolar Diodes

	Schottky $\leq 100\text{ V}$	Schottky $> 100\text{ V}$	Diotec „Low Vf“ Rectifier	Standard Rectifier	Ultrafast Rectifier
V_{RRM} [V]	20 ... 100	150	50 ... 400	50 ... 1200	50 ... 1000
V_F [V] @ $I_F=5\text{A}$	0.55 ... 0.79	0.93	0.84	1.0	1.0 ... 1.7
I_R [μA] @ $T_j=25^\circ\text{C}$	500 ... 600	50	25	25	25
t_{rr} [ns]	<50	<50	~ 100	~ 1500	75 ... 100
Costs	<u>100%</u>	210%	120%	48%	57%
Example	SB5 20 ... 100	Compet.	P1200 A ... G	P600 A ... S	UF600 A... M

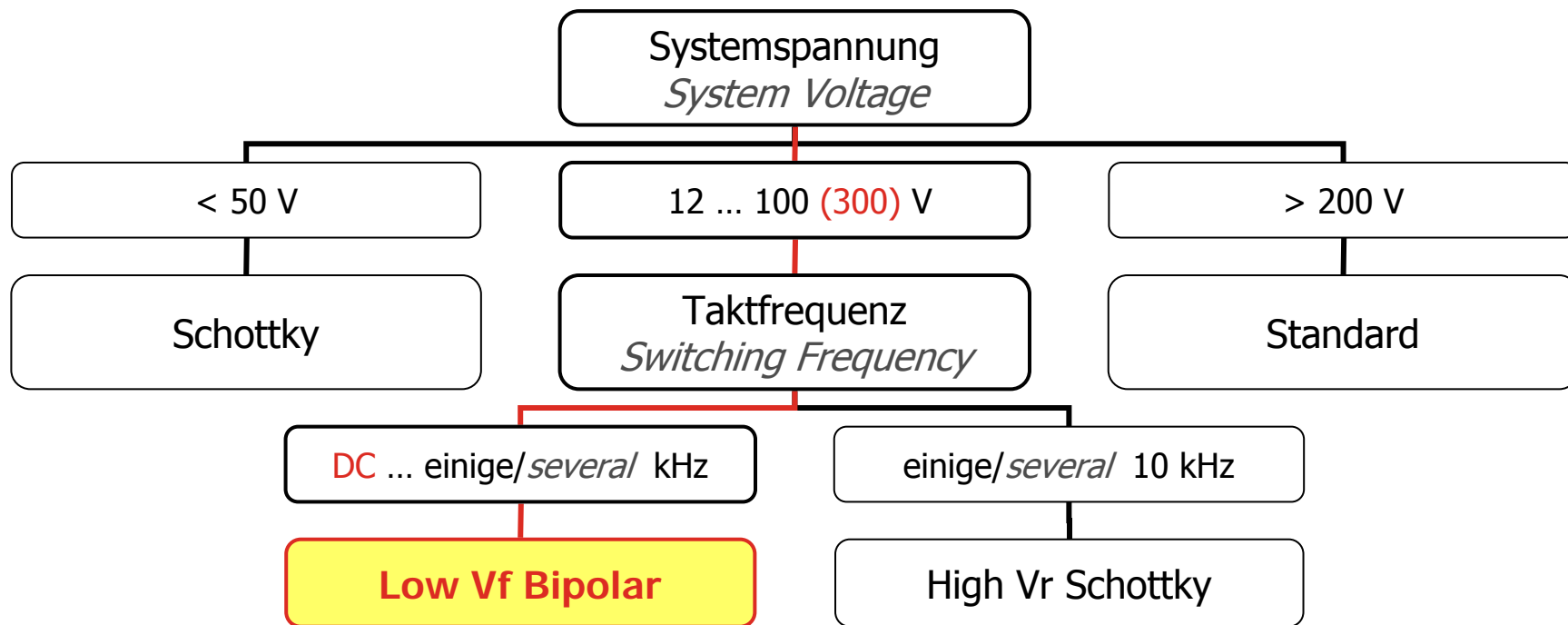
Vergleich der Durchlass- und Sperrkennlinien

Comparison of Forward and Reverse Curves



Auswahl des richtigen Bauelements für „Low Vf“ Anwendungen

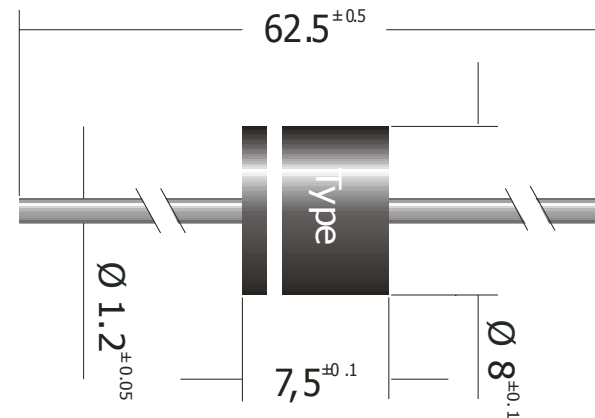
How to choose the correct device for „Low Vf“ Applications



Erhältliche Ausführungen

Available Types

P 1200 A...G



$V_{rrm} = 50V (A) - 100V (B) - 200V (D) - 400V (G)$

Nennstrom / Nominal current **12 Ampere**
 $V_f < 0.84 V$ bei/at $I_f = 5 A$

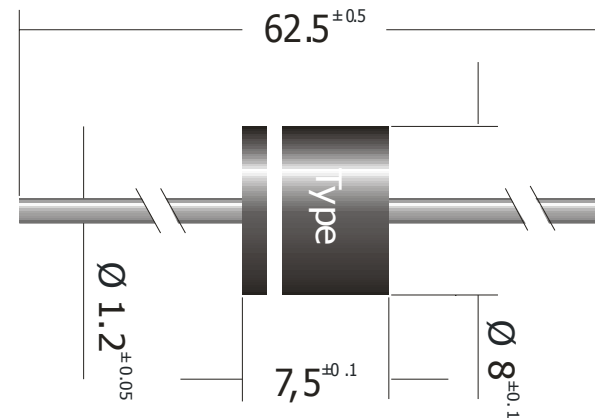
Standard Recovery

Diotec P600-Gehäuse / Package: **Ø 8.0 mm, L 7.5 mm**

Erhältliche Ausführungen

Available Types

F 1200 A...G



$V_{rrm} = 50V (A) - 100V (B) - 200V (D) - 400V (G)$

Nennstrom / Nominal current **12 Ampere**
 $V_f < 0.82 V$ bei/at $I_f = 5 A$

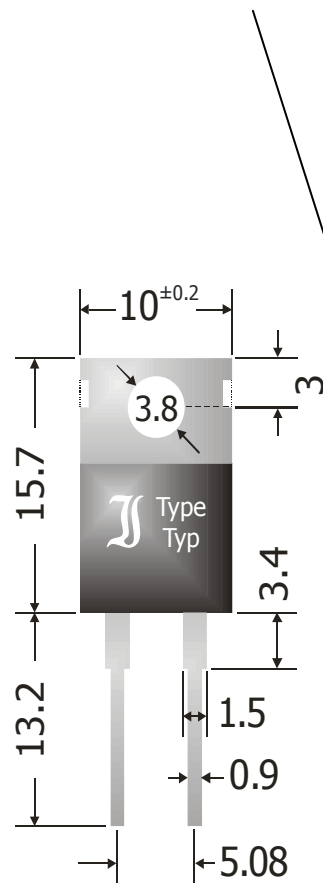
Fast Recovery: t_{rr} typ. 100 ns / max. 200 ns

Diotec P600-Gehäuse / Package: $\varnothing 8.0$ mm, L 7.5 mm

Erhältliche Ausführungen

Available Types

F T 2000 K/A A...G



$V_{rrm} =$
50V (A) – 100V (B) – 200V (D) – 400V (G)

K = Kathode an Kühlkörper / Cathode to heatsink

A = Anode an Kühlkörper / Anode to heatsink

Erleichtert die Reihenschaltung! / For easy series connection!

Nennstrom / Nominal current **20 Ampere**

$V_f < 0.94 V$ bei/at $I_f = 20 A$

TO-220AC

Fast Recovery: t_{rr} typ. 100 ns / max. 200 ns

Danke für Ihre Aufmerksamkeit!

Thanks for your Attention!

