

20A 45V LOW VF Schottky Barrier Diode

1 Description

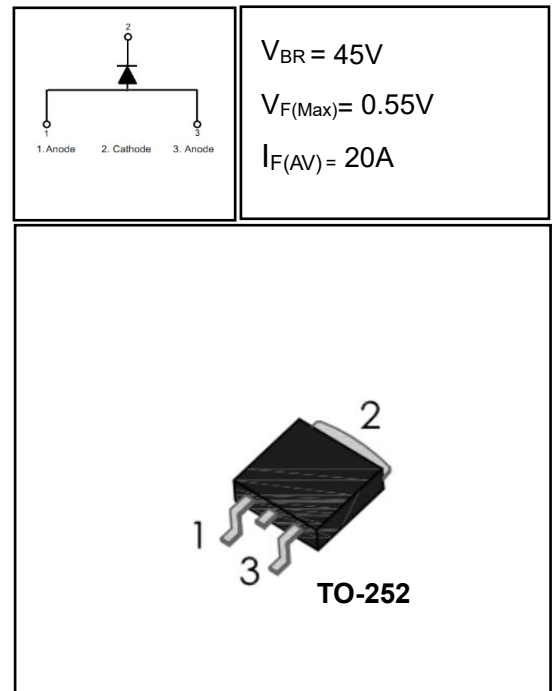
Dual center tab LOW VF Schottky rectifier suited for High Frequency server and telecom base station SMPS. Packaged in TO Inside the package, this device combines high current rating and low volume to enhance both reliability and power density of the application.

2 Features

- High junction temperature capability
- Low leakage current
- Low thermal resistance
- High frequency operation
- Avalanche specification

3 Applications

- Switching Power Supply
- Power Switching Circuits
- General Purpose



4 Electrical Characteristics

4.1 Absolute Maximum Ratings (T_c=25°C, unless otherwise noted)

PARAMETER		SYMBOL	VALUE	UNIT
Peak Repetitive Reverse Voltage		V _{RRM}	45	V
RMS Reverse Voltage		V _{R(RMS)}	31.5	V
DC Blocking Voltage		V _R	45	V
Average Rectified Forward Current	T _c =120°C	I _{F(AV)}	20	A
Repetitive Peak Surge Current		I _{FRM}	30	A
Nonrepetitive Peak Surge Current	tp=8.3ms	I _{FSM}	250	A
Avalanche Energy	L=1mH	E _{AS}	50	mJ
Operating Junction Temperature Range		T _j	-55~150	°C
Storage Temperature Range		T _{stg}	-55~150	°C

4.2 Thermal Characteristics

PARAMETER	SYMBOL	VALUE	UNIT
Thermal Resistance, Junction to Case-sink	R _{thJC}	1.20	°C/W

4.3 Electrical Characteristics (Tc=25°C, unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Maximum Instantaneous Forward Voltage	V _F	I _F = 10A	-	0.42	-	V
		I _F = 20A	-	0.47	0.55	V
		I _F = 20A, T _a = 125°C	-	0.48	-	V
		I _F = 30A	-	0.55	-	V
Maximum Instantaneous Reverse	I _R	V _R = 45V	-	60	150	μA
		V _R = 45V, T _a = 125°C	-	-	20	mA
Total capacitance	C _{tot}	V _R =4V f=1MHz	-	430	-	pF
DC Blocking Voltage	V _{BR}	I _R =200μA	45	52	-	V

DEFINITIONS

V_F = Instantaneous forward voltage (pw = 300μs, D = 2%).

I_R = Instantaneous reverse current.

RθJC = Thermal resistance junction to case.

pw = pulse width.

D = duty cycle.

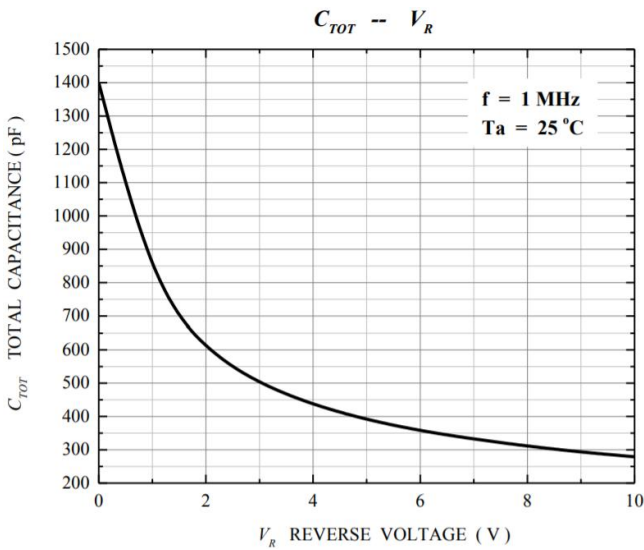
5 Typical characteristics diagrams


FIGURE 1. Total capacitance vs Voltage

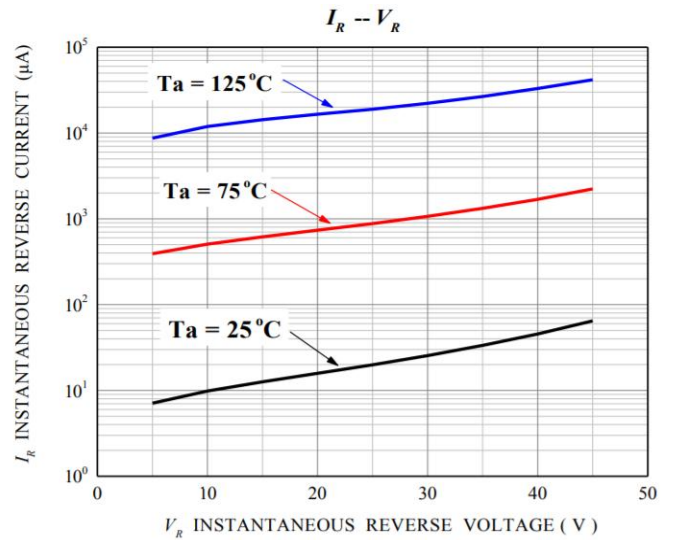


FIGURE 2. REVERSE CURRENT vs REVERSE VOLTAGE

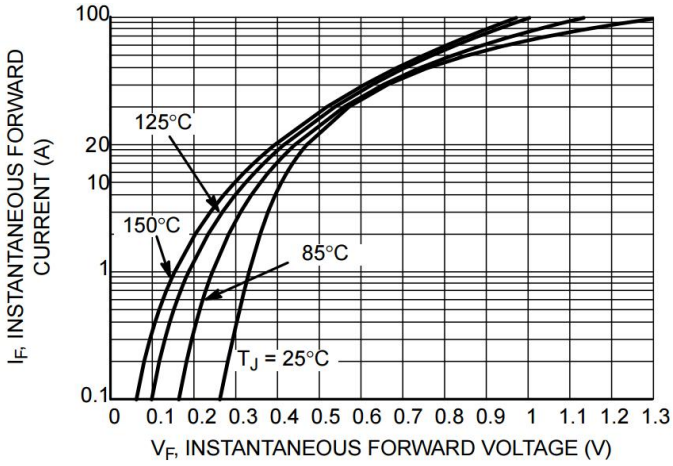


FIGURE 3. FORWARD CURRENT vs FORWARD VOLTAGE

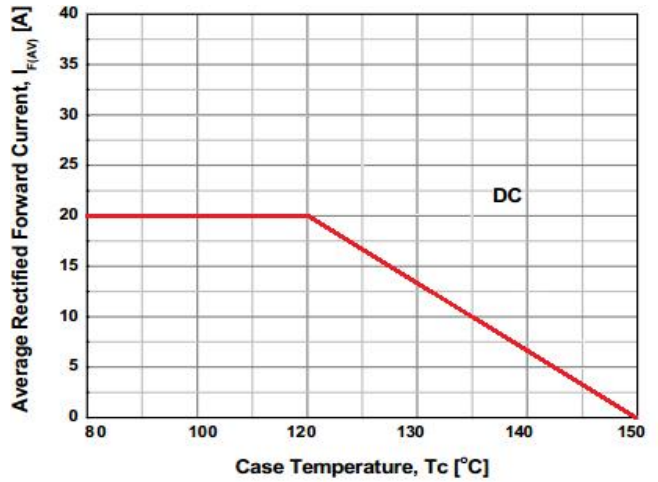
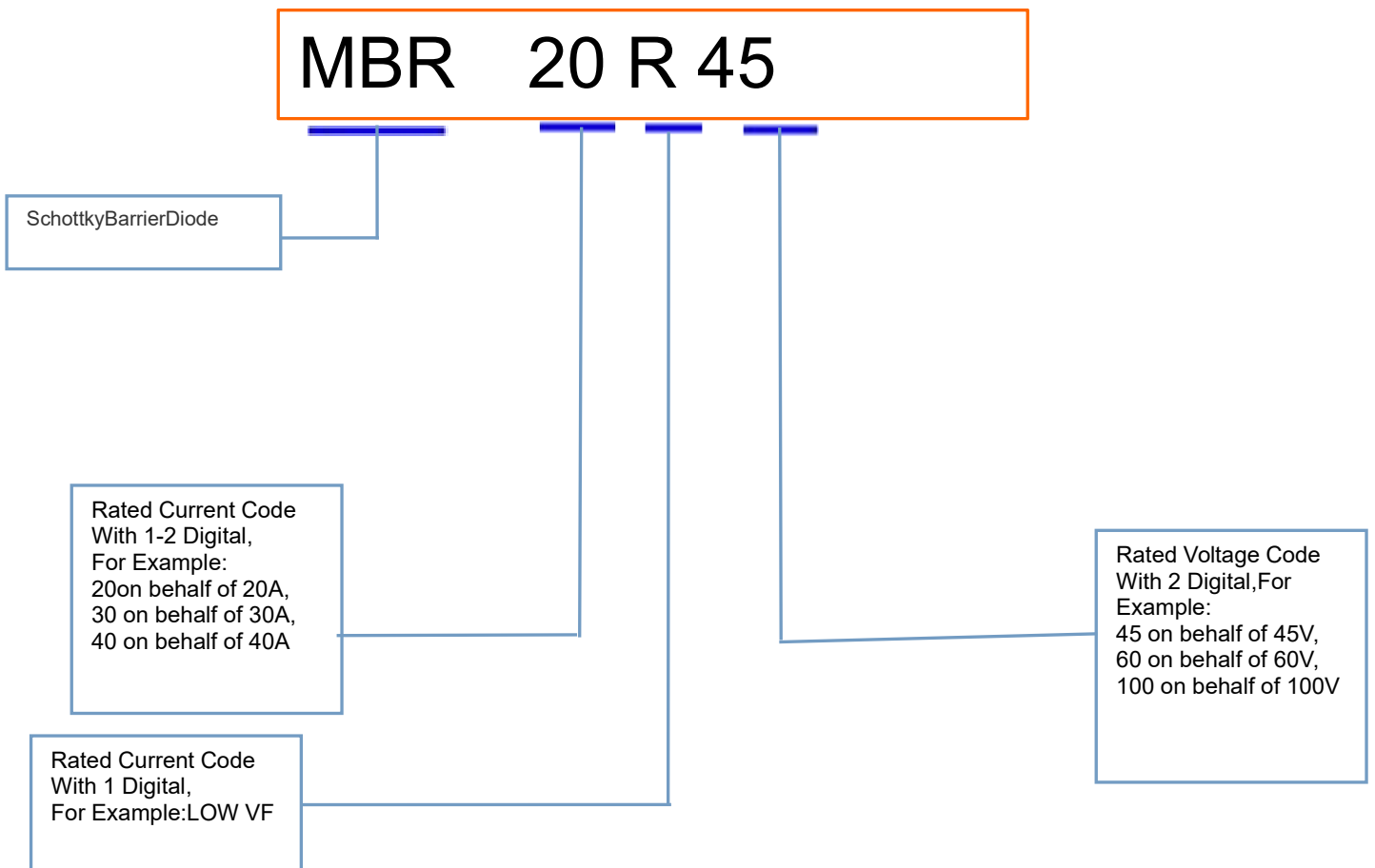


FIGURE 4. CURRENT DERATING CURVE

6 Product Names Rules

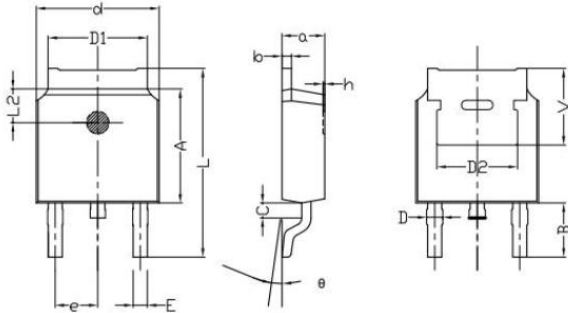


7 Product Specifications and Packaging Models

Product Model	Package Type	Mark Name	RoHS	Package	Quantity
MBR20R45	TO-252	MBR20R45	Pb-free	Braid	2500/disc

8 Dimensions

TO-252B PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	min.	max.	min.	max.
a	2.20	2.40	0.087	0.095
b	0.46	0.58	0.018	0.023
c	0.70	0.90	0.028	0.035
D	0.80	1.00	0.032	0.039
d	6.30	6.70	0.248	0.264
D1	5.00	5.50	0.197	0.217
D2	TYP 4.83		TYP 0.190	
A	5.80	6.20	0.228	0.244
e	2.19	2.39	0.086	0.094
L	9.40	10.40	0.370	0.409
B	2.6	3.2	0.102	0.126
L2	1.5	1.8	0.059	0.071
theta	0	8	0	8
h	0	0.3	0	0.012
V	5.25	5.85	0.207	0.230

10 Attentions

- Jiangsu Donghai Semiconductor Technology Co., Ltd. reserves the right to change the specification without prior notice! The customer should obtain the latest version of the information before making the order and verify that the information is complete and up to date.
- It is the responsibility of the purchaser for any failure or failure of any semiconductor product under certain conditions. It is the responsibility of the purchaser to comply with safety standards and to take safety measures in the system design and machine manufacturing of WXDH products in order to avoid potential risk of failure. Injury or property damage.
- Product promotion is endless, our company will be dedicated to provide customers with better products.

11 Appendix

Revision history:

Date	REV.	Description	Page
2021.08.18	1.0	Original	
2022.01.01	1.1	Modify company name	all