

## 20A 100V SchottkyBarrierDiode

### 1 Description

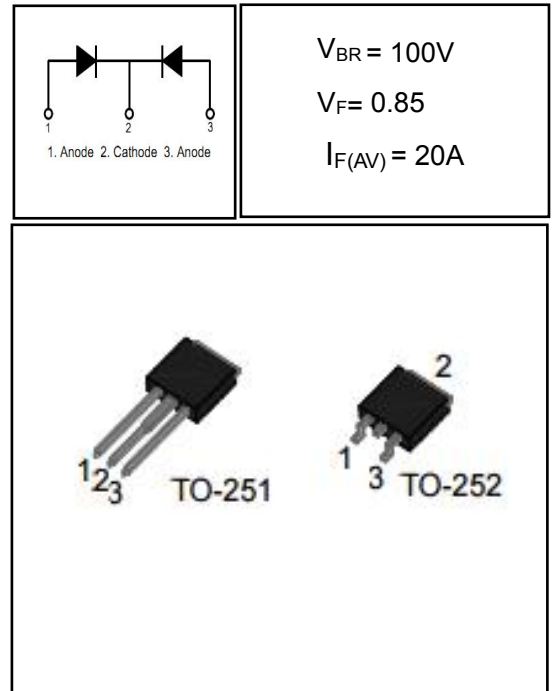
This center tap Schottky rectifier has been optimized for low reverse leakage at high temperature. The proprietary barrier technology allows for reliable operation up to 150°C junction temperature.

### 2 Features

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

### 3 Applications

- converters
- free-wheeling diodes
- reverse battery protection
- Typical applications are in switching power



## 4 Electrical Characteristics

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

PARAMETER	SYMBOL	VALUE	UNIT
Peak Repetitive Reverse Voltage	$V_{RRM}$	100	V
Maximum RMS Voltage	$V_{RMS}$	80	V
DC Blocking Voltage	$V_R$	100	V
Average Rectified Forward Current(single)	$I_{F(AV)}$	10	A
Average Rectified Forward Current(double)		20	A
Repetitive Peak Surge Current(single)	$I_{FRM}$	15	A
Nonrepetitive Peak Surge Current(single)	$I_{FSM}$	150	A
Peak Repetitive Reverse Surge Current (Note 1)	$I_{RRM}$	3	A
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	$R_{thJC}$	4.2	°C/W

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

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Maximum Instantaneous Forward Voltage(Note 3)	V <sub>F</sub>	I <sub>F</sub> = 10A	-	0.79	0.85	V
		I <sub>F</sub> = 10A, T <sub>C</sub> = 125°C	-	-	0.75	V
		I <sub>F</sub> = 20A	-	0.95	1.1	V
Maximum Instantaneous Reverse (Note 2)	I <sub>R</sub>	V <sub>R</sub> = 100V	-	3	100	uA
		V <sub>R</sub> = 100V, T <sub>C</sub> = 125°C	-	-	10	mA
Total capacitance	C <sub>tot</sub>	V <sub>R</sub> =0V f=1MHz	-	154	-	pF
DC Blocking Voltage	V <sub>BR</sub>	I <sub>R</sub> =100uA	105	120	-	V

Notes:

- 2.0us Pulse Width, f=1.0 KHz
- Pulse Test: 300us Pulse Width, 1% Duty Cycle
- V<sub>F</sub> Instantaneous forward voltage (pw = 300us, D = 2%).

## 5 Typical characteristics diagrams

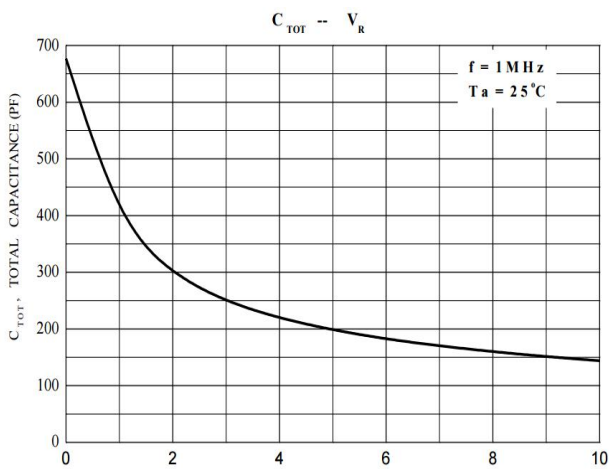


FIGURE 1. Total capacitance vs Voltage

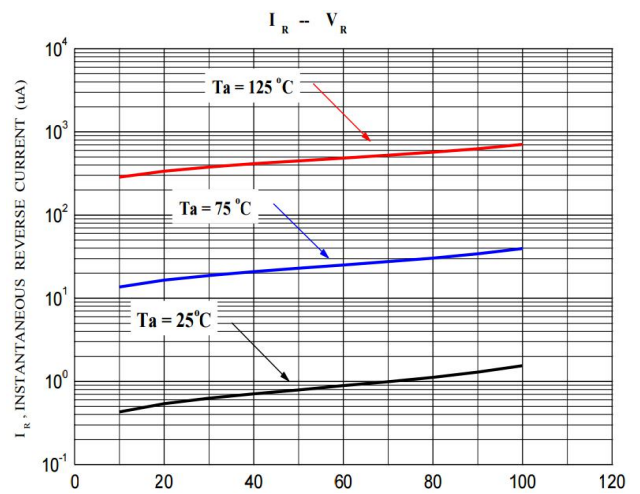


FIGURE 2. REVERSE CURRENT vs REVERSE VOLTAGE

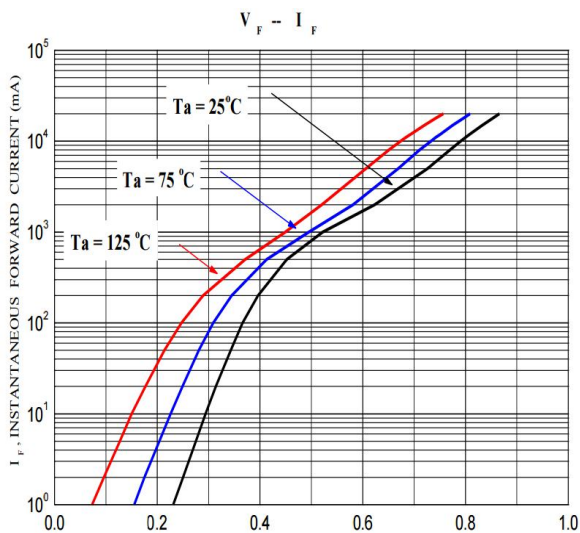


FIGURE 3. FORWARD CURRENT vs FORWARD VOLTAGE

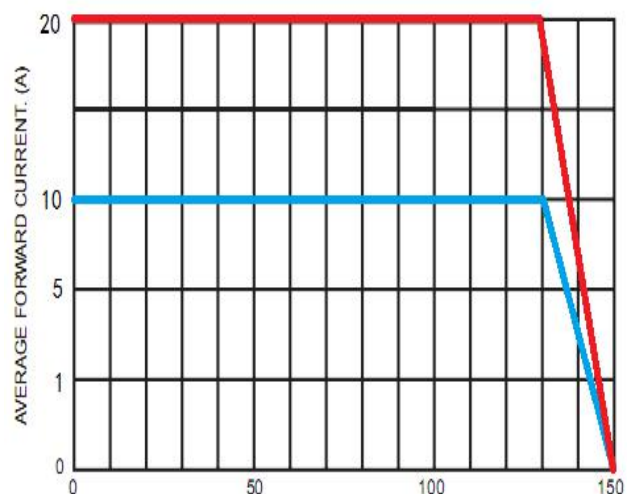
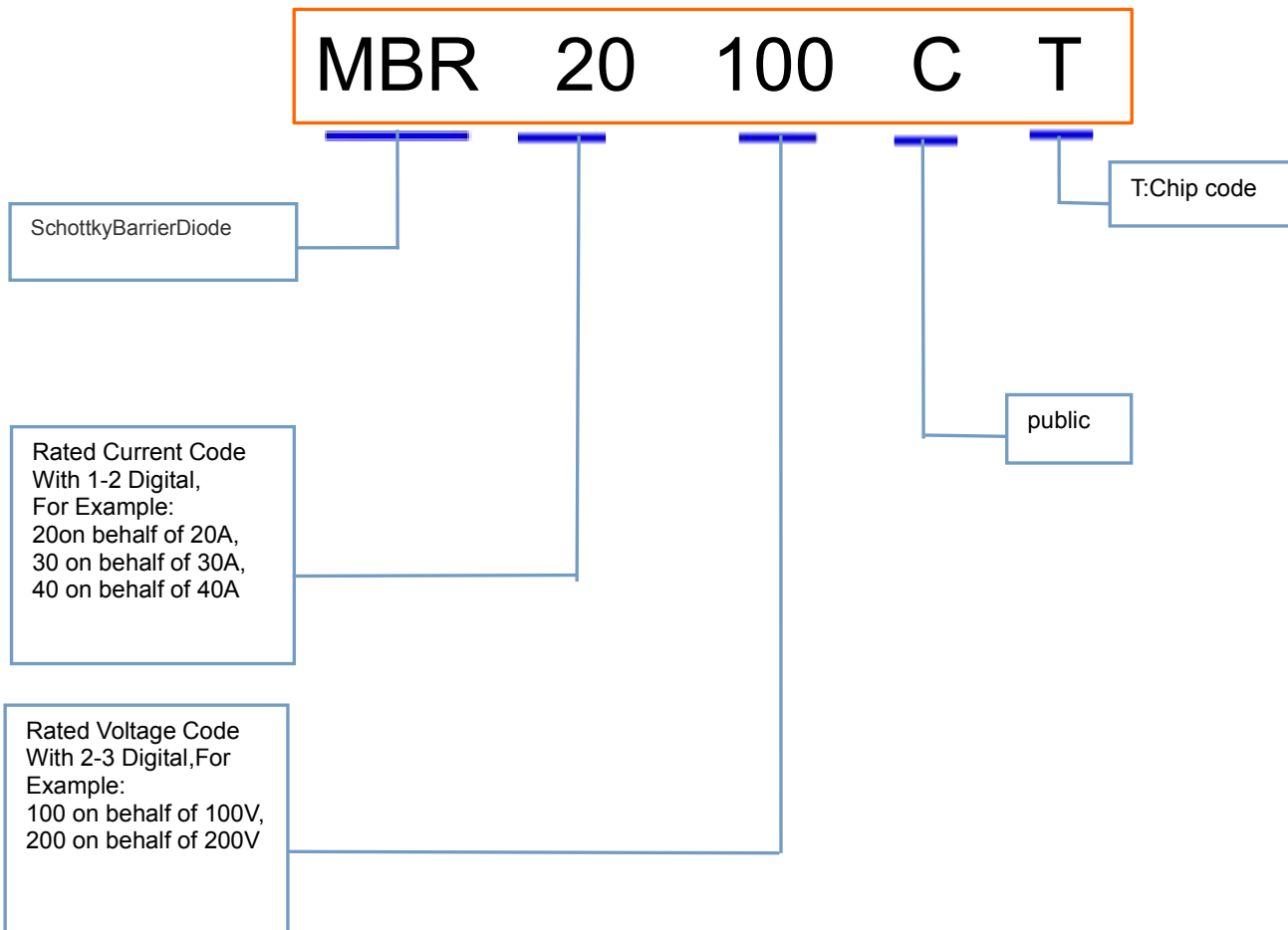


FIGURE 4. CURRENT DERATING CURVE

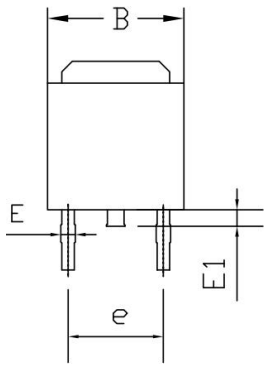
## 6 Product Names Rules



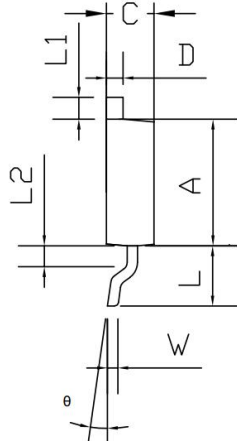
## 7 Product Specifications and Packaging Models

Product Model	Package Type	Mark Name	RoHS	Package	Quantity
MBR20100CT	TO-252	MBR20100CT	Pb-free	Braid	3000/disc

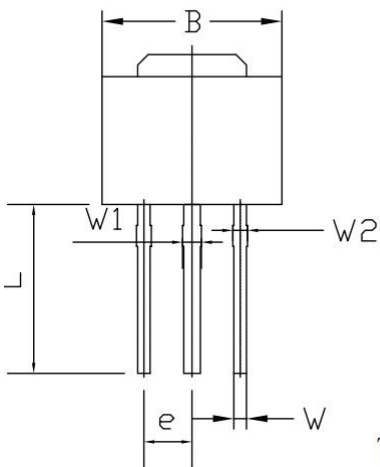
## 8 Dimensions



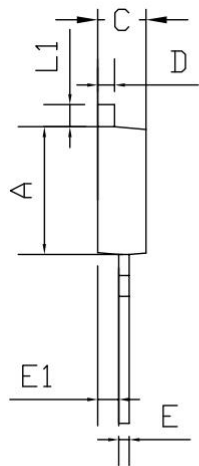
T0-252



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	min.	max.	min.	max.
A	5.70	6.30	0.224	0.248
B	6.30	6.90	0.248	0.272
C	2.05	2.55	0.081	0.100
D	0.70	0.90	0.028	0.035
E	0.40	0.60	0.016	0.024
E1	0.60	1.00	0.024	0.039
e	4.50	4.65	0.177	0.183
L	2.75	3.05	0.108	0.120
L1	0.75	1.15	0.030	0.045
L2	0.75	1.25	0.030	0.049
W	0.40	0.60	0.016	0.024
$\theta$	0	8	0	8



T0-251



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	min.	max.	min.	max.
A	5.70	6.30	0.224	0.248
B	6.30	6.90	0.248	0.272
C	2.05	2.55	0.081	0.100
D	0.70	0.90	0.028	0.035
E	0.40	0.60	0.016	0.024
E1	0.85	1.25	0.037	0.041
e	2.29	2.31	0.090	0.091
L	7.80	8.20	0.307	0.323
L1	0.75	1.15	0.030	0.045
W	0.55	0.65	0.022	0.026
W1	0.75	1.15	0.030	0.045
W2	0.60	0.80	0.024	0.031

**9 Attentions**

- ROUM 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 Roma 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
2017.09.20	1.0	Original	