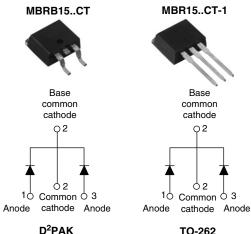


**Vishay High Power Products** 

### Schottky Rectifier, 2 x 7.5 A



TO-262

PRODUCT SUMMARY						
I <sub>F(AV)</sub>	2 x 7.5 A					
V <sub>R</sub>	35/45 V					
IRM	15 mA at 125 °C					

### **FEATURES**

- 150 °C T<sub>J</sub> operation
- · Center tap TO-220 package
- · Low forward voltage drop
- · High frequency operation
- · High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- · Guard ring for enhanced ruggedness and long term reliability
- · Designed and qualified for Q101 level

#### DESCRIPTION

The MBR15..CT 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. Typical applications are in switching power supplies, converters, freewheeling diodes, and reverse battery protection.

MAJOR RATINGS AND CHARACTERISTICS							
SYMBOL	CHARACTERISTICS	VALUES	UNITS				
I <sub>F(AV)</sub>	Rectangular waveform	15	А				
V <sub>RRM</sub>		35/45	V				
I <sub>FSM</sub>	$t_p = 5 \ \mu s \ sine$	690	А				
V <sub>F</sub>	7.5 Apk, T <sub>J</sub> = 125 °C	0.57	V				
TJ		- 65 to 150	°C				

VOLTAGE RATINGS						
PARAMETER	SYMBOL	MBRB1535CT MBR1535CT-1	MBRB1545CT MBR1545CT-1	UNITS		
Maximum DC reverse voltage	V <sub>R</sub>	35	45	V		
Maximum working peak reverse voltage	V <sub>RWM</sub>		40	v		

ABSOLUTE MAXIMUM RATINGS							
PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNITS		
Maximum average per le		$T_{C}$ = 131 °C, rated $V_{R}$		7.5			
forward current per devi	e I <sub>F(AV)</sub>			15			
Maximum peak one cycle non-repetitive surge		5 µs sine or 3 µs rect. pulse	Following any rated load condition and with rated V <sub>RRM</sub> applied	690	A		
	IFSM	Surge applied at rated load of single phase, 60 Hz	150				
Non-repetitive avalanche energy per le	eg E <sub>AS</sub>	$T_J = 25 \text{ °C}, I_{AS} = 2 \text{ A}, L = 3.5 \text{ mH}$		7	mJ		
Repetitive avalanche current per leg	I <sub>AR</sub>	Current decaying linearly to zero in 1 $\mu$ s Frequency limited by T <sub>J</sub> maximum V <sub>A</sub> = 1.5 x V <sub>B</sub> typical		2	А		

# Vishay High Power Products Schottky Rectifier, 2 x 7.5 A



ELECTRICAL SPECIFICATIONS							
PARAMETER	SYMBOL	TEST CO	VALUES	UNITS			
Maximum forward voltage drop	V <sub>FM</sub> <sup>(1)</sup>	15 A	T <sub>J</sub> = 25 °C	0.84	V		
		7.5 A	T 105 %C	0.57			
		15 A	T <sub>J</sub> = 125 °C	0.72			
Maximum instantaneous reverse current	I <sub>RM</sub> <sup>(1)</sup>	T <sub>J</sub> = 25 °C	Rated DC voltage	0.1	mA		
		T <sub>J</sub> = 125 °C	Haleu DC Vollage	15			
Maximum junction capacitance	CT	$V_R = 5 V_{DC}$ (test signal ran	400	pF			
Typical series inductance	L <sub>S</sub>	Measured from top of tern	8.0	nH			
Maximum voltage rate of change	dV/dt	Rated V <sub>R</sub>	10 000	V/µs			

#### Note

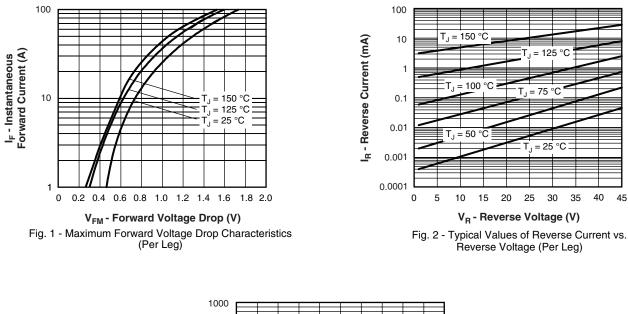
 $^{(1)}\,$  Pulse width < 300  $\mu s,$  duty cycle < 2 %

THERMAL - MECH	IANICAL S	PECIFIC	CATIONS			
PARAMETER		SYMBOL	TEST CONDITIONS	VALUES	UNITS	
Maximum junction temperature range		TJ		- 65 to 150	°C	
Maximum storage temperature range		T <sub>Stg</sub>		- 65 to 175		
Maximum thermal resistance, junction to case per leg		R <sub>thJC</sub>	DC operation	3.0	°C/W	
Typical thermal resistance, case to heatsink		R <sub>thCS</sub>	Mounting surface, smooth and greased	0.50		
Maximum thermal resistance, junction to ambient		R <sub>thJA</sub>	DC operation	60		
• • • • • •				2	g	
Approximate weight				0.07	oz.	
Manuating to some	minimum			6 (5)	kgf ⋅ cm	
Mounting torque maximum				12 (10)	(lbf ⋅ in)	
				MBRB1	535CT	
Marking device			Case style D <sup>2</sup> PAK	MBRB1545CT		
				MBR1535CT-1		
			Case style TO-262	MBR1545CT-1		



## MBRB15..CT/MBR15..CT-1

Schottky Rectifier, 2 x 7.5 A Vishay High Power Products



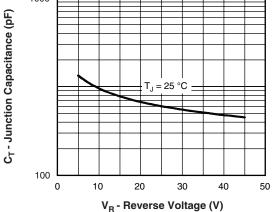
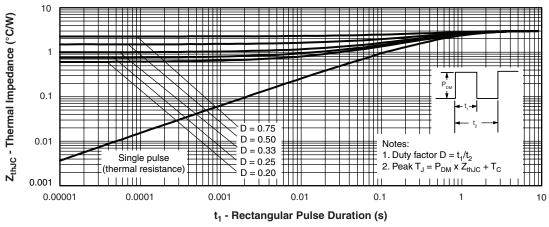


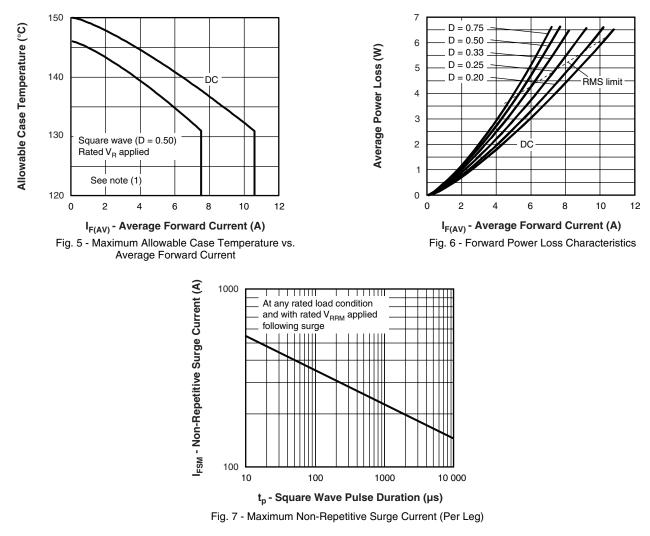
Fig. 3 - Typical Junction Capacitance vs. Reverse Voltage (Per Leg)





### MBRB15..CT/MBR15..CT-1

Vishay High Power Products Schottky Rectifier, 2 x 7.5 A



#### Note

- <sup>(1)</sup> Formula used:  $T_C = T_J (Pd + Pd_{REV}) \times R_{thJC}$ ;
- $\begin{array}{l} \mathsf{Pd} = \mathsf{Forward} \ \mathsf{power} \ \mathsf{loss} = \mathsf{I}_{\mathsf{F}(\mathsf{AV})} \ \mathsf{x} \ \mathsf{V}_{\mathsf{FM}} \ \mathsf{at} \ (\mathsf{I}_{\mathsf{F}(\mathsf{AV})}/\mathsf{D}) \ (\mathsf{see} \ \mathsf{fig.} \ \mathsf{6}); \\ \mathsf{Pd}_{\mathsf{REV}} = \mathsf{Inverse} \ \mathsf{power} \ \mathsf{loss} = \mathsf{V}_{\mathsf{R1}} \ \mathsf{x} \ \mathsf{I}_{\mathsf{R}} \ (\mathsf{1} \mathsf{D}); \ \mathsf{I}_{\mathsf{R}} \ \mathsf{at} \ \mathsf{V}_{\mathsf{R1}} = \mathsf{Rated} \ \mathsf{V}_{\mathsf{R}} \end{array}$

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Schottky Rectifier, 2 x 7.5 A Vishay High Power Products

#### ORDERING INFORMATION TABLE

Device code	MBR	в	15	45	СТ	-1	TRL	-	
		2	3	4	5	6	7	8	
	1 - 2 - 3 - 4 - 5 - 6 -	• B • N Cur Volt CT	= D <sup>2</sup> PA one = T rent rati tage rati = Esser	O-262 [ ng (15 =	6 No 6 = 15 A)	1 35 45 r	= 35 V = 45 V	]	
	7 - 8 -	• -1 • N • TF • TF • N	= TO-2 one = T RL = Ta RR = Ta one = S		2 No pieces) reel (left reel (rig product	: oriente ht orien tion	ted - foi	D <sup>2</sup> PAK	( only)

 LINKS TO RELATED DOCUMENTS

 Dimensions
 http://www.vishay.com/doc?95014

 Part marking information
 http://www.vishay.com/doc?95008

 Packaging information
 http://www.vishay.com/doc?95032

 SPICE model
 http://www.vishay.com/doc?95294



Vishay

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