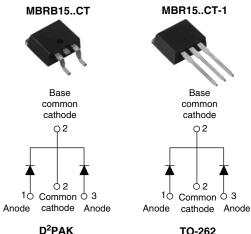


Vishay High Power Products

Schottky Rectifier, 2 x 7.5 A



TO-262

PRODUCT SUMMARY						
I _{F(AV)}	2 x 7.5 A					
V _R	35/45 V					
IRM	15 mA at 125 °C					

FEATURES

- 150 °C T_J 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 _{F(AV)}	Rectangular waveform	15	А				
V _{RRM}		35/45	V				
I _{FSM}	$t_p = 5 \ \mu s \ sine$	690	А				
V _F	7.5 Apk, T _J = 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 _R	35	45	V		
Maximum working peak reverse voltage	V _{RWM}		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 _{F(AV)}			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 _{RRM} applied	690	A		
	IFSM	Surge applied at rated load of single phase, 60 Hz	150				
Non-repetitive avalanche energy per le	eg E _{AS}	$T_J = 25 \text{ °C}, I_{AS} = 2 \text{ A}, L = 3.5 \text{ mH}$		7	mJ		
Repetitive avalanche current per leg	I _{AR}	Current decaying linearly to zero in 1 μ s Frequency limited by T _J maximum V _A = 1.5 x V _B typical		2	А		

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

Note

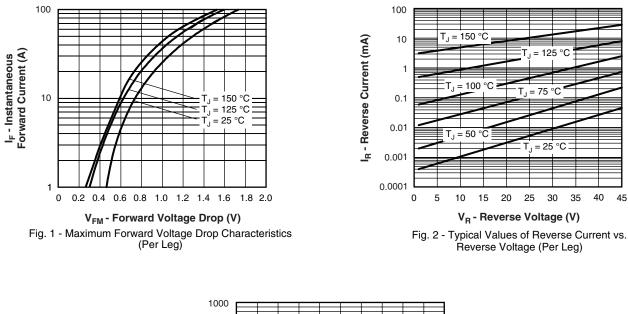
 $^{(1)}\,$ Pulse width < 300 $\mu s,$ duty cycle < 2 %

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 _{Stg}		- 65 to 175		
Maximum thermal resistance, junction to case per leg		R _{thJC}	DC operation	3.0	°C/W	
Typical thermal resistance, case to heatsink		R _{thCS}	Mounting surface, smooth and greased	0.50		
Maximum thermal resistance, junction to ambient		R _{thJA}	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 ² PAK	MBRB1545CT		
				MBR1535CT-1		
			Case style TO-262	MBR1545CT-1		



MBRB15..CT/MBR15..CT-1

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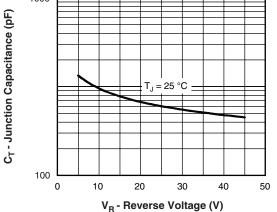
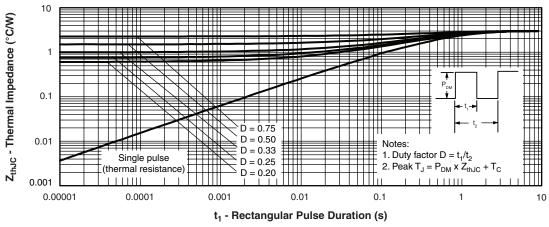


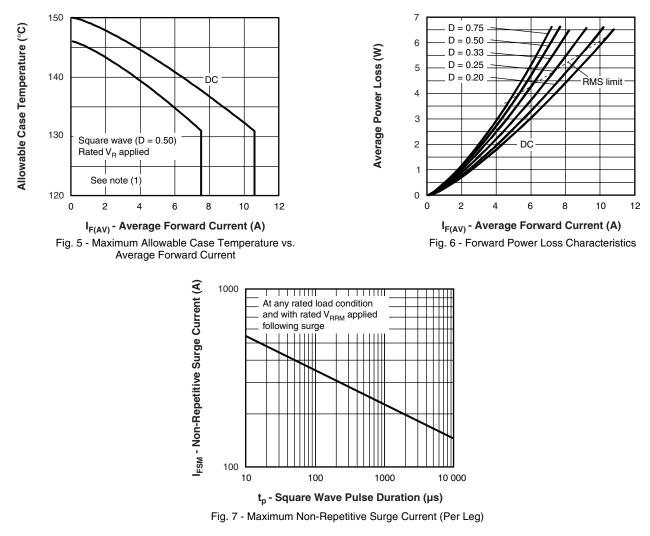
Fig. 3 - Typical Junction Capacitance vs. Reverse Voltage (Per Leg)





MBRB15..CT/MBR15..CT-1

Vishay High Power Products Schottky Rectifier, 2 x 7.5 A



Note

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

VISHA



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 ² 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 ² 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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