



# MBR540 SERIES

## SCHOTTKY BARRIER RECTIFIERS

**VOLTAGE** 40 to 200 Volt **CURRENT** 5 Ampere

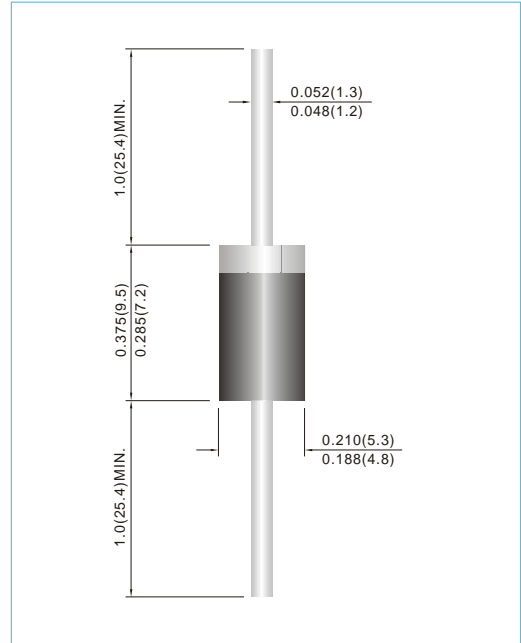
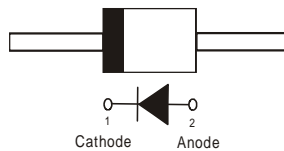
**DO-201AD** Unit : inch(mm)

### FEATURES

- Epitaxial Construction
- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- High Surge Capability
- High Current Capability and Low Forward Voltage Drop
- Surge Overload Rating to 150A Peak
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Applications
- Lead free in compliance with EU RoHS 2011/65/EU directive

### MECHANICAL DATA

- Case: DO-201AD Molded plastic
- Terminals: Axial leads, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode
- Weight: 0.0402 ounces, 1.142 grams



## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60 Hz, resistive or inductive load.

PARAMETER	SYMBOL	MBR540	MBR545	MBR550	MBR560	MBR580	MBR590	MBR5100	MBR5150	MBR5200	UNITS
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	40	45	50	60	80	90	100	150	200	V
Maximum RMS Voltage	$V_{RMS}$	28	31.5	35	42	56	63	70	105	140	V
Maximum DC Blocking Voltage	$V_{DC}$	40	45	50	60	80	90	100	150	200	V
Average Rectified Output Current (See Figure 1)	$I_{F(AV)}$	5									A
Non-Repetitive Peak Forward Surge Current : 8.3ms single half sine-wave superimposed on rated load	$I_{FSM}$	150									A
Power Dissipation	$P_D$	2.5									W
Forward Voltage at 5A (Notes 3)	$V_F$	0.7	0.74		0.8			0.9		V	
Maximum DC Reverse Current at Rated DC Blocking Voltage (Notes 4)	$T_j=25^\circ\text{C}$	0.05									mA
	$T_j=100^\circ\text{C}$	10			-						mA
	$T_j=125^\circ\text{C}$	-			5			1		mA	
Typical Thermal Resistance (Notes 2) (Notes 1) (Notes 1)	$R_{\theta JA}$	50									°C / W
	$R_{\theta JL}$	15									
	$R_{\theta JC}$	12									
Typical Junction Capacitance ( $V_R=4V, f=1\text{MHz}$ )	$C_j$	250				150				pF	
Operating Junction and Storage Temperature Range	$T_j, T_{STG}$	-55 to +150		-65 to +150							°C

### NOTES :

1. Measured at ambient temperature at a distance of 9.5mm from the case
2. Minimum Pad Area
3. Pulse test : 300µs pulse width, 1% duty cycle
4. Short duration pulse test used to minimize self-heating effect.



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## TYPICAL CHARACTERISTIC CURVES

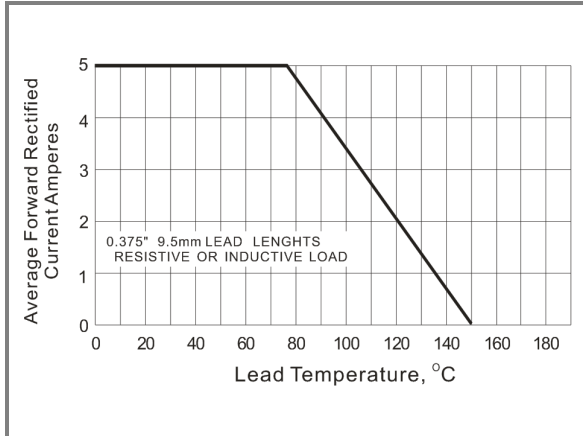


Fig.1 Forward Current Derating Curve

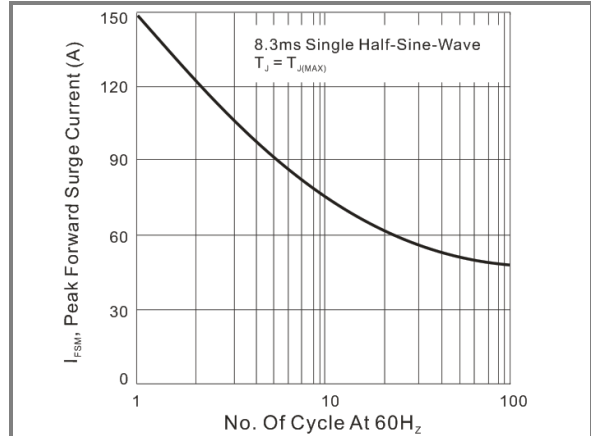


Fig. 2 Maximum Non-Repetitive Surge Current

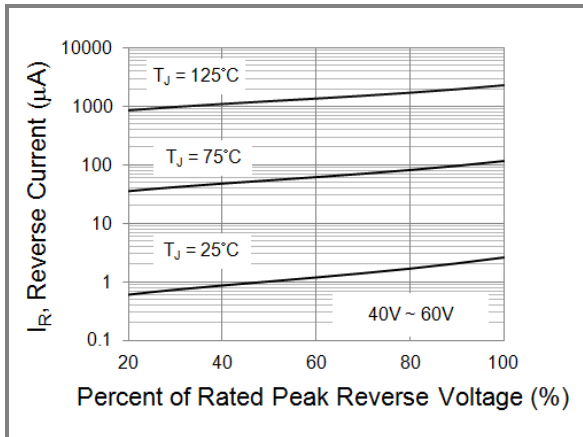


Fig.3 Typical Reverse Characteristics

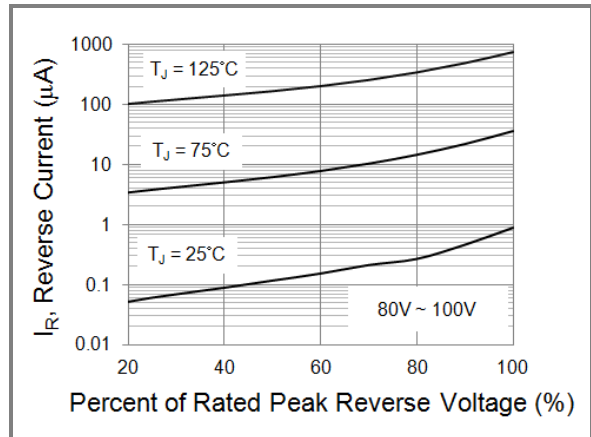


Fig.4 Typical Reverse Characteristics

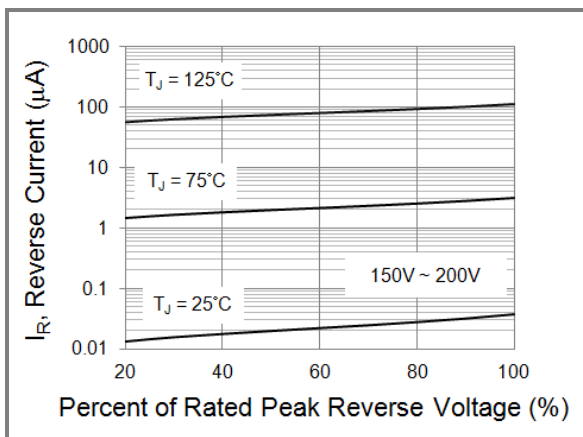


Fig.5 Typical Reverse Characteristics

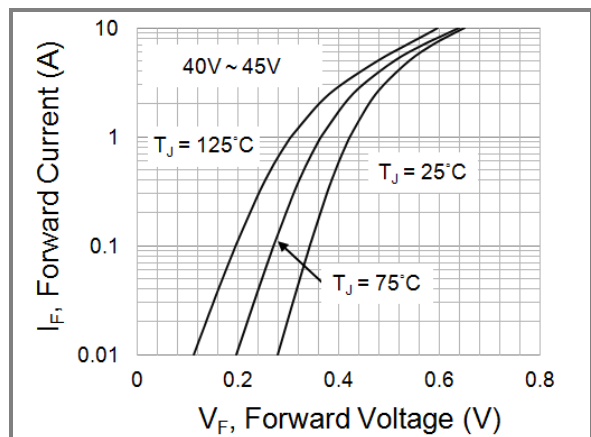


Fig.6 Typical Forward Characteristics



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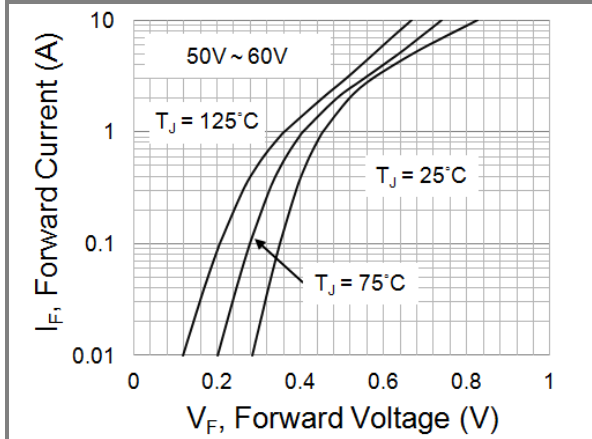


Fig.7 Typical Forward Characteristics

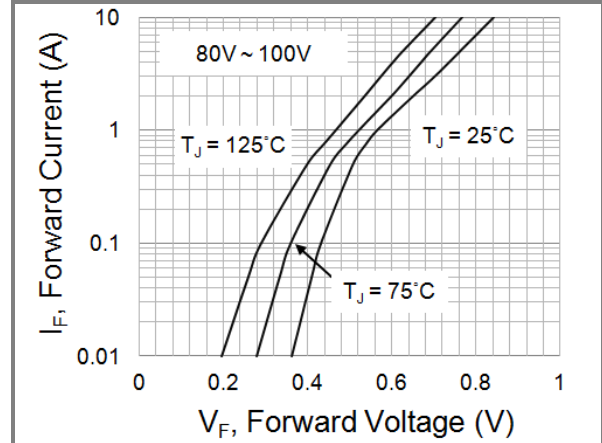


Fig.8 Typical Forward Characteristics

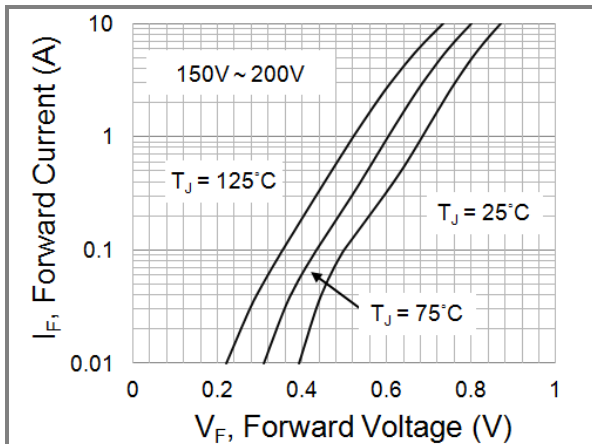


Fig.9 Typical Forward Characteristics

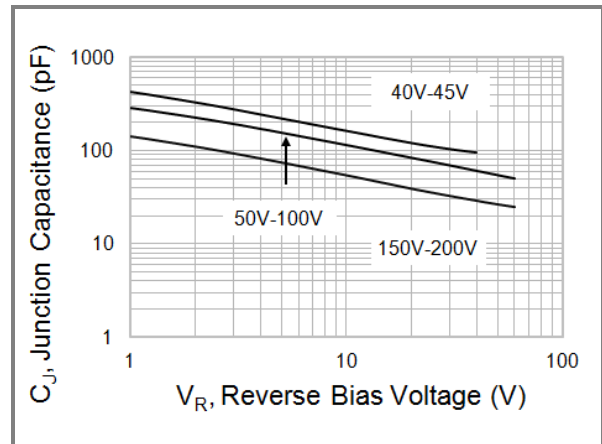


Fig.10 Typical Junction Capacitance

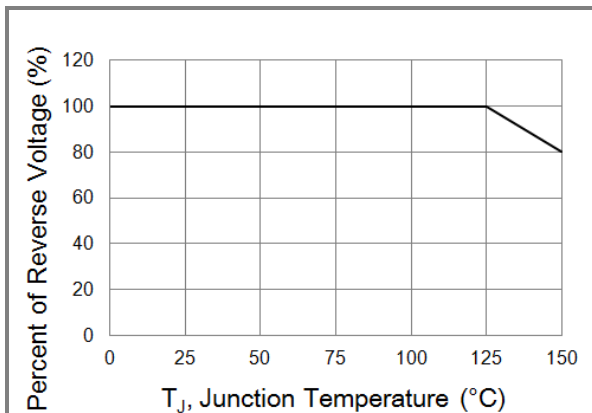


Fig.11 Operating Temperature Derating Curve



## MBR540 SERIES

### Part No\_packing code\_Version

MBR540\_AY\_00001  
 MBR540\_AY\_10001  
 MBR540\_B0\_00001  
 MBR540\_B0\_10001  
 MBR540\_R2\_00001  
 MBR540\_R2\_10001

For example :

**RB500V-40** **R2** **00001**



Packing Code <b>XX</b>				Version Code <b>XXXXX</b>		
Packing type	1 <sup>st</sup> Code	Packing size code	2 <sup>nd</sup> Code	HF or RoHS	1 <sup>st</sup> Code	2 <sup>nd</sup> ~5 <sup>th</sup> Code
Tape and Ammunition Box (T/B)	A	N/A	0	HF	0	serial number
Tape and Reel (T/R)	R	7"	1	RoHS	1	serial number
Bulk Packing (B/P)	B	13"	2			
Tube Packing (T/P)	T	26mm	X			
Tape and Reel (Right Oriented) (TRR)	S	52mm	Y			
Tape and Reel (Left Oriented) (TRL)	L	PANASERT T/B CATHODE UP (PBCU)	U			
FORMING	F	PANASERT T/B CATHODE DOWN (PBCD)	D			



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