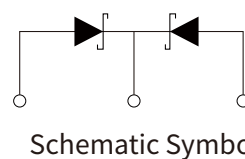
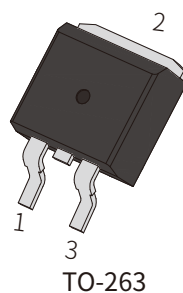


FEATURES

- Low Power Loss. High efficiency. High Surge capacity
- For Use In Low Voltage, High Frequency Inverters, Free Wheeling, And Polarity Protection Applications
- Metalsilicon junction, majority carrier Conduction
- High Current Capability. Low Forward Voltage Drop
- Guard Ring For Over Voltage Protection



APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003

MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$)

Parameter		Symbol	MBRF 4040 VCT	MBRF 4045 VCT	MBRF 4050 VCT	MBRF 4060 VCT	MBRF 4080 VCT	MBRF 4090 VCT	MBRF 40100 VCT	MBRF 40150 VCT	MBRF 40200 VCT	Unit
Marking			MBR 4040	MBR 4045	MBR 4050	MBR 4060	MBR 4080	MBR 4090	MBR 40100	MBR 40150	MBR 40200	
Maximum Repetitive 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
Maximum Average Forward Current		I _{F(AV)}	40									A
Peak Forward Surge Current:8.3ms Single Half Sine-wave Superimposed On Rated Load(Jedec Method)		I _{FSM}	400									A
Maximum Forward Voltage at 20A Per Leg		V _F	0.53		0.58		0.82			0.90		V
Maximum DC Reverse Current at Rated DC Blocking Voltage	T _J =25°C	I _R	0.1							0.05		mA
	T _J =125°C		20									mA
Typical Thermal Resistance		R _{θJC}	1.3									°C/W
Maximum Operating Junction Temperature		T _J	150				175					°C
Storage Temperature		T _{STG}	-55 to +150				-65~+175					°C

CHARACTERISTIC CURVES

Fig. 1- Forward Current Derating Curve

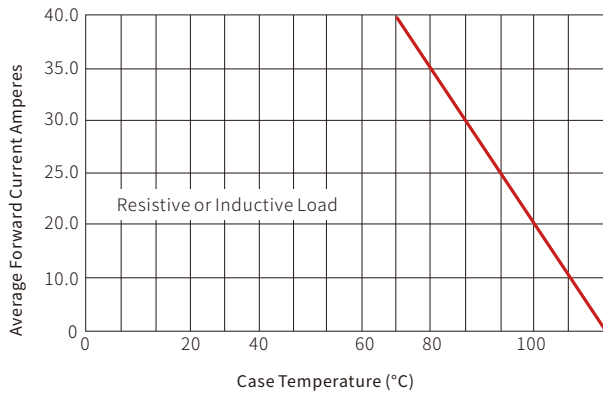


Fig. 2- Maximum Non-repetitive Peak Forward Surge Current Perleg

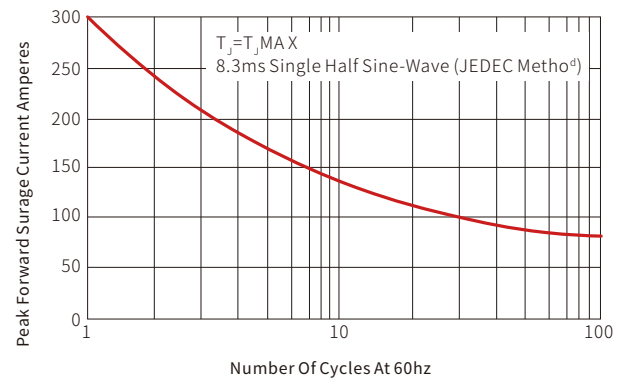


Fig. 3- Typical Instantaneous Forward Characteristics

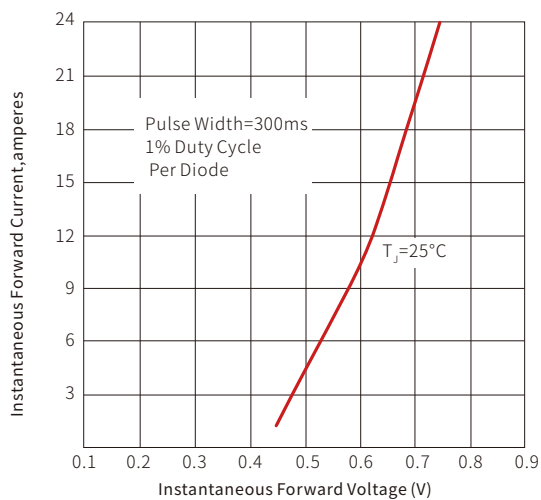
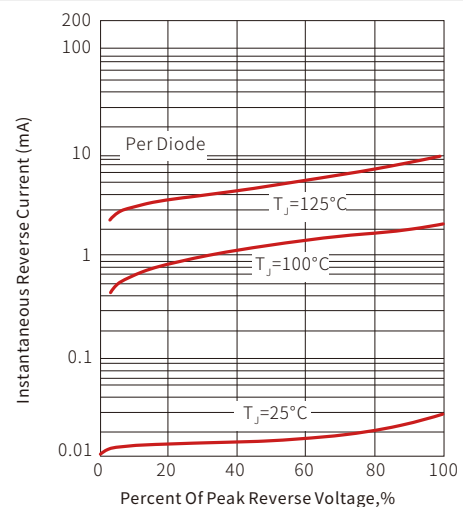
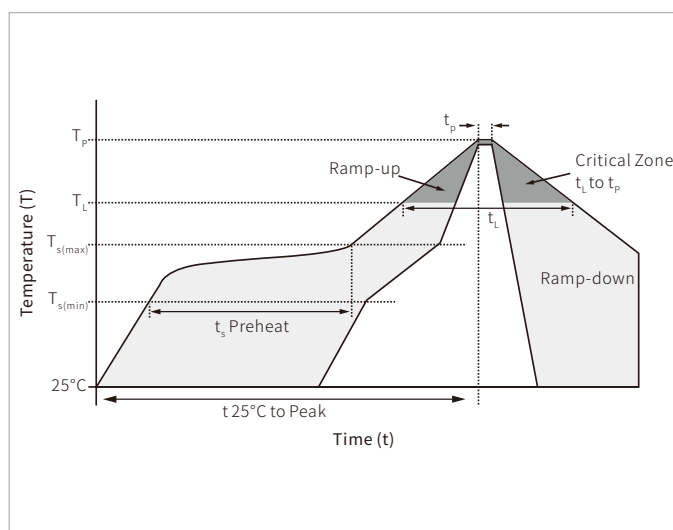


Fig. 4- Typical Reverse Characteristics

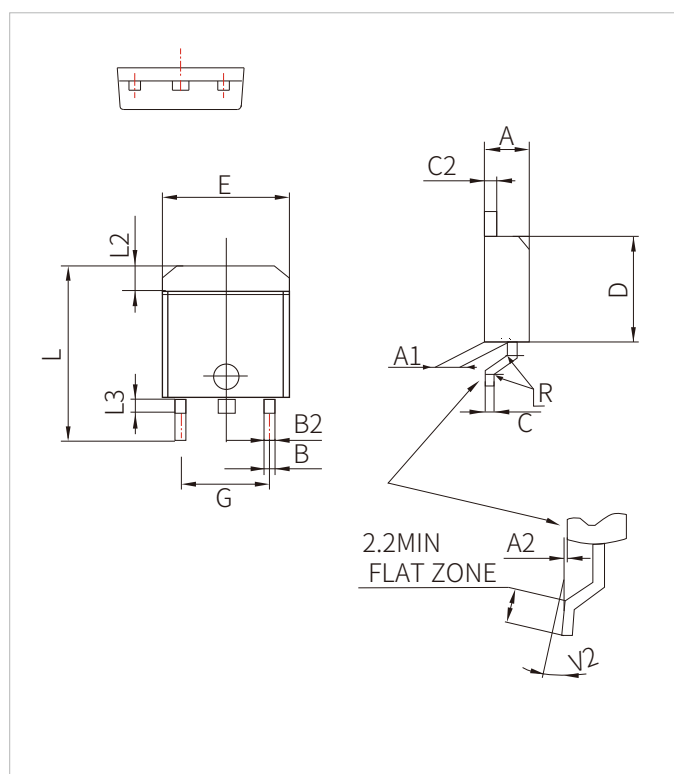


SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Max ($T_{s(min)}$)	150°C
	Temperature Max ($T_{s(max)}$)	200°C
	Time (min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/second max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Time (min to max) (t_l)	60 – 150 seconds
Peak Temperature (T_p)		260°C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_p)		8 minutes max.
Do not exceed		260°C



TO-263 PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.30		4.60	0.169		0.181
A1	2.49		2.69	0.098		0.106
A2	0.03		0.23	0.001		0.009
B	0.70		0.93	0.027		0.037
B2	1.25	1.40		0.048	0.055	
C	0.45		0.60	0.017		0.024
C2	1.21		1.36	0.047		0.054
D	8.95		9.35	0.352		0.368
E	9.80		10.28	0.386		0.405
G	4.88		5.28	0.192		0.208
L	14.80		15.85	0.583		0.624
L2	1.27		1.40	0.050		0.055
L3	1.40		1.75	0.055		0.069
R		0.40			0.016	
V2	0°		8°	0°		8°

ORDERING INFORMATION

Part Number	Package	QTY/Reel	Reel Size
MBRF4040VCT-MBRF40200VCT	TO-263	800PCS	13"

Headquarters

No.3387 Shendu Road
Pujiang I&E Park
Minhang Shanghai China
201000

Hotline

400-021-5756

Web

<https://www.semiware.com>

Sales Center

Tel: 86-21-3463-7458
Email: sales18@semiware.com

Customer Service

Tel: 86-21-5484-1001
Email: sales17@semiware.com

Technical Support

Tel: 86-21-3463-7654
Email: fae01@semiware.com

Complaint & Suggestions

Tel: 86-21-3463-7172
Ext: 8868
Email: cs03@semiware.com

By QR Code

Website



Wechat

To find your local partner within Semiware' s global website: www.semiware.com

© 2022 Semiware Semiconductor Inc.

The content of this document has been carefully checked and understood. However, neither Semiware nor its subsidiaries assume any liability whatsoever for any errors or inaccuracies of this document and the consequences thereof. Published specifications are subject to change without notice. Product suitability for any area of application must ultimately be determined by the customer. In all cases, products must never be operated outside their published specifications. Semiware does not guarantee the availability of all published products. This disclaimer shall be governed by substantive Chinese law and resulting disputes shall be settled by the courts at the place of business of Semiware. Latest publications and a complete disclaimer can be downloaded from the Semiware website. All trademarks recognized.