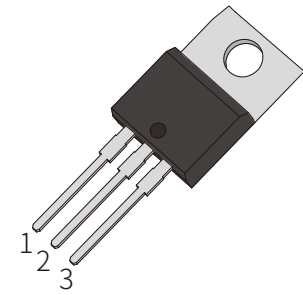
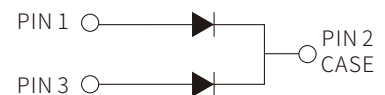


FEATURES

- | Metal silicon junction, majority carrier conduction
- | Plastic material used carries Underwriters Laboratory Classifications 94V-0
- | High surge capability
- | Low power loss, high efficiency
- | High current capability, low forward voltage drop
- | For use in low voltage, high frequency inverters, free wheeling, and polarity protection applications
- | Guardring for overvoltage protection



TO-220AB



Schematic Symbol

MECHANICAL DATA

- | Cases: JEDEC TO-220AB molded plastic
- | Polarity: As marked
- | Terminals: Pure tin plated, lead free. solderable per MIL-STD-750, Method 2026
- | Mounting position: Any

APPROVALS

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

MAXIMUM RATINGS (T_A=25°C)

Parameter	Symbol	MBR 3040	MBR 3045	MBR 3050	MBR 3060	MBR 3080	MBR 30100	MBR 30150	MBR 30200	Unit
Marking		MBR 3040	MBR 3045	MBR 3050	MBR 3060	MBR 3080	MBR 30100	MBR 30150	MBR 30200	
Maximum Repetitive Peak Reverse Voltage	V _{RRM}	40	45	50	60	80	100	150	200	V
Maximum RMS Voltage	V _{RMS}	28	31	35	42	56	70	105	140	V
Maximum DC Blocking Voltage	V _{DC}	40	45	50	60	80	100	150	200	V
Maximum Average Forward Rectified Current at T _c =130°C	I _{F(AV)}	30								A
Peak Repetitive Forward Current (Rated V _{RR} , Square Wave, 20KHz) at T _c =130°C	I _{FRM}	30								A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed On Rated Load(JEDEC method)	I _{FSM}	200								A
Peak Repetitive Reverse Surge Current (Note 2)	I _{RRM}	1.0				0.5				A
Maximum Instantaneous Forward Voltage at	I _F =15A, T _A =25°C	V _F	0.7	0.75	0.84	0.95	V			
	I _F =15A, T _A =125°C		0.6	0.65	0.70	0.80				
	I _F =30A, T _A =25°C		0.82	0.90	0.94	1.05				
	I _F =30A, T _A =125°C		0.73	0.78	0.82	0.92				
Maximum Instantaneous Reverse Current at Rated DC Blocking Voltage Per Leg(Note 1)	@T _A =25°C	I _R	0.2	0.2	0.2	0.1	mA			
	@T _A =125°C		15	10	7.5	5.0				
Voltage Rate of Change (Ratd V _R)	dV/dt	10000								V/μS
Typical Junction Capacitance @4V 1.0 MHz	C _j	600	460	320				pF		
Maximum Thermal Resistance Per Leg (Note 3)	R _{θJC}	1.0				1.5				°C/W
Operating Junction Temperature Range	T _J	-65 to +150								°C
Storage Temperature Range	T _{STG}	-65 to +175								°C

Notes: 1. Pulse Test: 300μs Pulse Width, 1% Duty Cycle
 2. 2.0μs Pulse Width, f=1.0 KHz
 3. Mount on Heatsink Size of (4"x6"x0.25") Al-Plate

CHARACTERISTIC CURVES

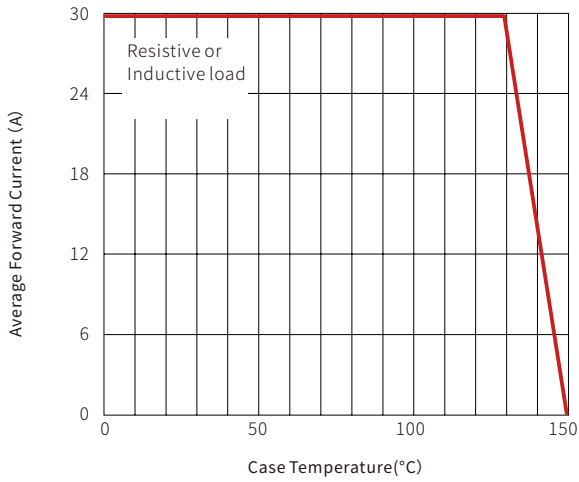
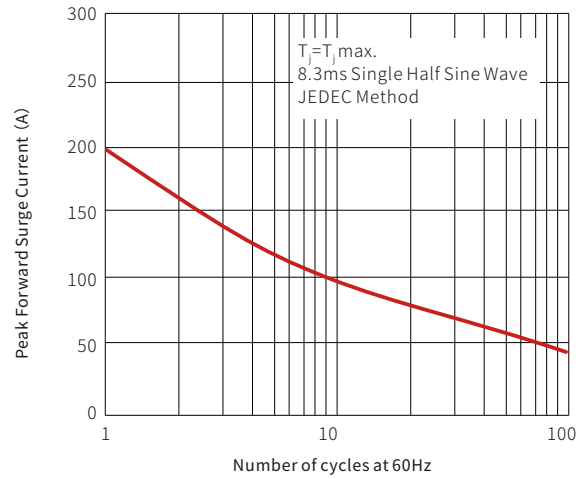
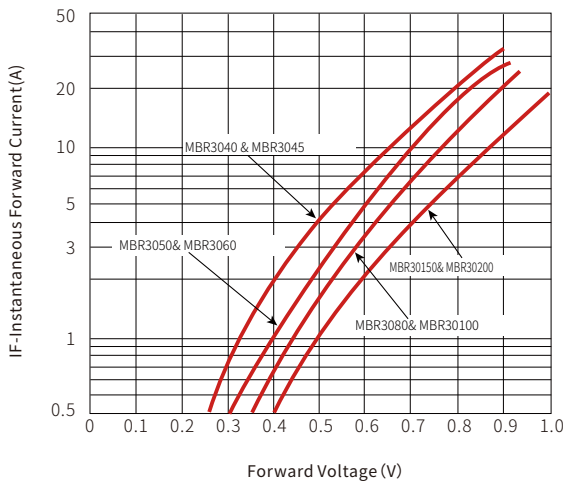
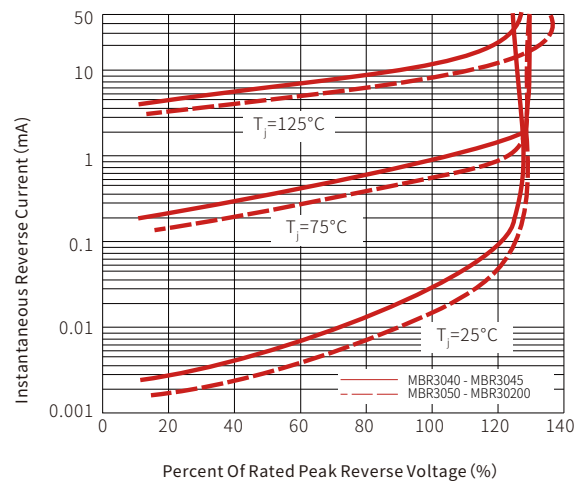
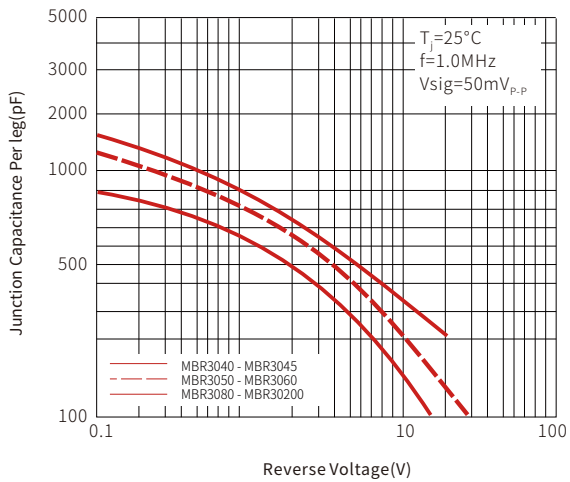
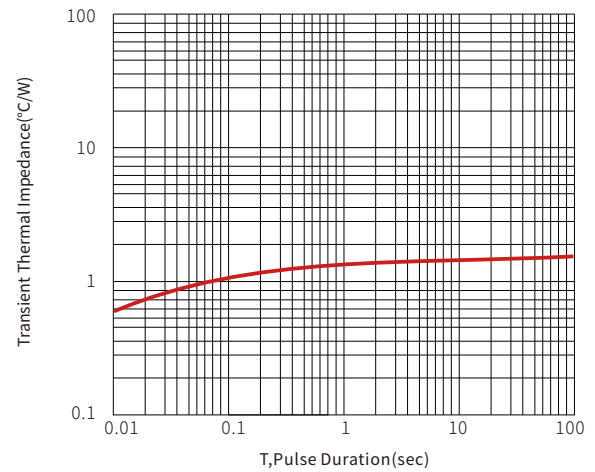
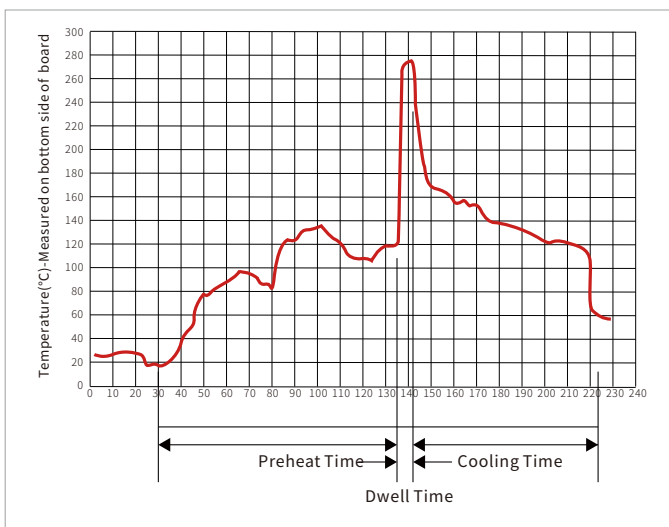
Fig. 1- Forward Current Derating Curve

Fig. 2- Maximum Non-Repetitive Forward Surge Current Per leg

Fig. 3- Typical Instantaneous Forward Characteristics Per leg

Fig. 4- Typical Reverse Characteristics Per leg


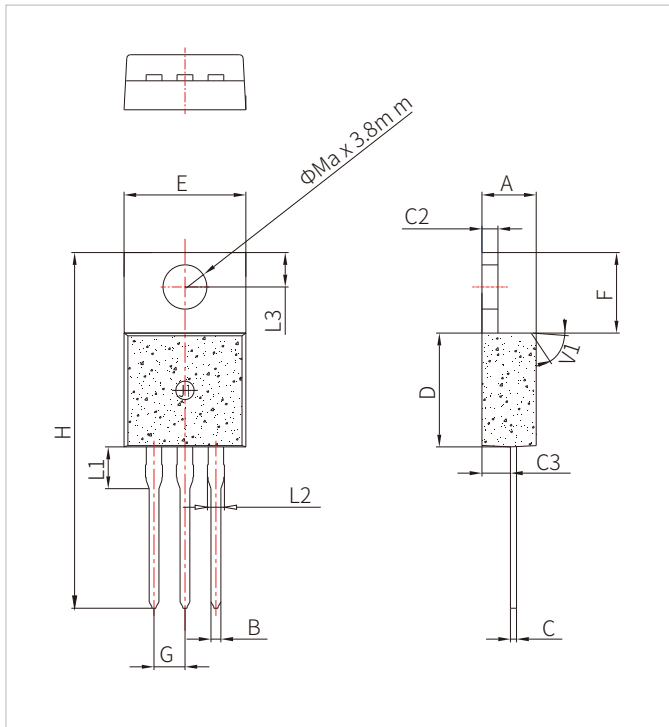
Fig. 5- Typical Junction Capacitance Per leg

Fig. 6-Typical Transient Thermal Impedance Per leg


WAVE SOLDERING



Wave Parameter		Lead-free assembly
Pre Heat	Temperature Min	100°C
	Temperature Max	150°C
	Time(min to max)	60 - 180 secs
Solder pot Temperature		280°C Max
Solder Dwell Time		2-5 seconds

TO-220AB PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.80		10.4	0.386		0.409
F	6.55		6.95	0.258		0.274
G		2.54			0.1	
H	28.0		29.8	1.102		1.173
L1		3.75			0.148	
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116
V1		45°			45°	

ORDERING INFORMATION

Part Number	Component Package	QTY/Tube	QTY/Box	QTY/Carton
MBR3040-MBR30200	TO-220AB	50PCS	1000PCS	5000PCS

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By QR Code

Website



Wechat

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

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