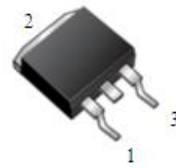


## MBRA2060BCT&MBRA2060HCT

### 10.0AMPS. SCHOTTKY BARRIER RECTIFIERS

#### FEATURE

- . High current capability
- . Low forward voltage drop
- . Low power loss, high efficiency
- . High surge capability
- . High temperature soldering guaranteed  
260°C /10seconds, 0.25"(6.35mm)from case.



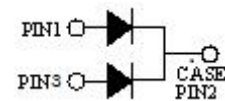
TO-263  
MBRA2060BCT



TO-262  
MBRA2060HCT

#### MECHANICAL DATA

- . Case: Molded with UL-94 Class V-0 recognized  
Flame Retardant Epoxy
- . Mounting position: any



Single phase, half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%

#### MAXIMUM RATINGS (T<sub>C</sub>=25°C unless otherwise noted)

Parameter	Symbol	MBRA2060BCT&MBRA2060HCT	Units
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	60	V
Maximum RMS Voltage	$V_{RMS}$	42	V
Maximum DC blocking Voltage	$V_{DC}$	60	V
Maximum Average Forward Rectified Current at T <sub>C</sub> =100°C	$I_{F(AV)}$	10.0 20.0	A
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	$I_{FSM}$	120.0	A
Typical Junction Capacitance (Note 1)	$C_J$	230	pF
Operation Junction Temperature and Storage Temperature	$T_J, T_{STG}$	-55 to +150	°C

#### ELECTRICAL CHARACTERISTICS-Per Leg (T<sub>C</sub>=25°C unless otherwise noted)

Parameter	Symbol	Test conditions	Typ	Max	Units	
Forward voltage drop	$V_F$	T <sub>J</sub> =25°C	I <sub>F</sub> =5A	0.54	---	V
			I <sub>F</sub> =10A	0.68	0.80	
		T <sub>J</sub> =125°C	I <sub>F</sub> =5A	0.49	---	
			I <sub>F</sub> =10A	0.58	0.70	
Reverse leakage current	$I_R$	T <sub>J</sub> =25°C	V <sub>R</sub> =60V	---	100	μA
		T <sub>J</sub> =125°C	V <sub>R</sub> =60V	---	10	mA

#### THERMAL CHARACTERISTICS(T<sub>C</sub>=25°C unless otherwise noted)

Parameter	Symbol	MBRA2060BCT	MBRA2060HCT	Units
Typical Thermal Resistance (Note 2)	$R_{(JC)}$	2.0	2.0	°C/W

#### Notes:

1. Measured at 1.0 MHz and applied reverse voltage of 4.0Vdc
2. Thermal Resistance from Junction to Case

RATING AND CHARACTERISTIC CURVES

FIG1-TYPICAL FORWARD CURRENT DERATING CURVE

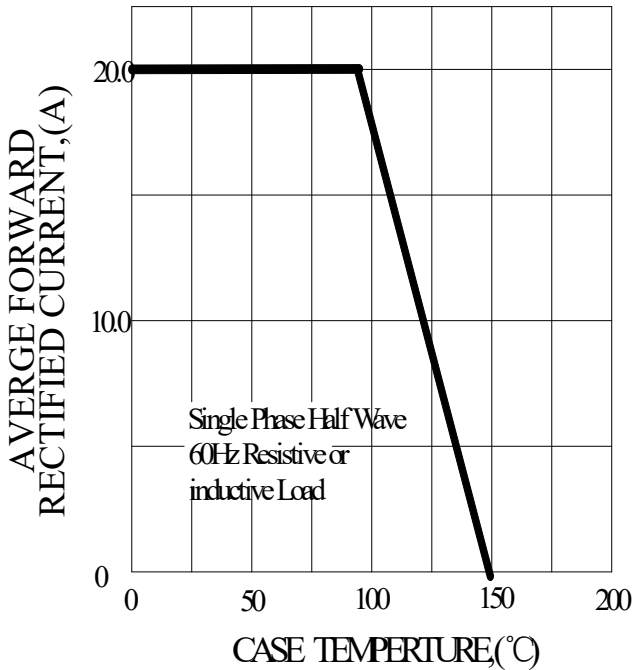


FIG2-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

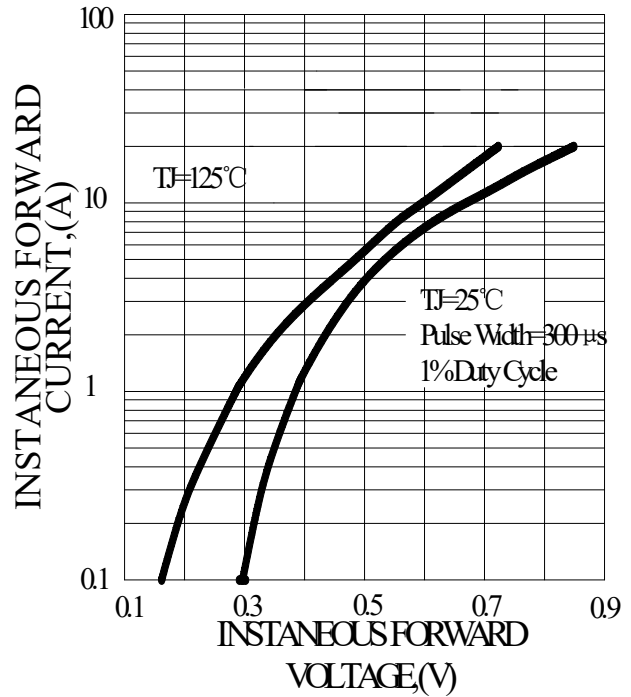


FIG3-MAXIMUM NON-REPEITIVE FORWARD SURGE CURRENT

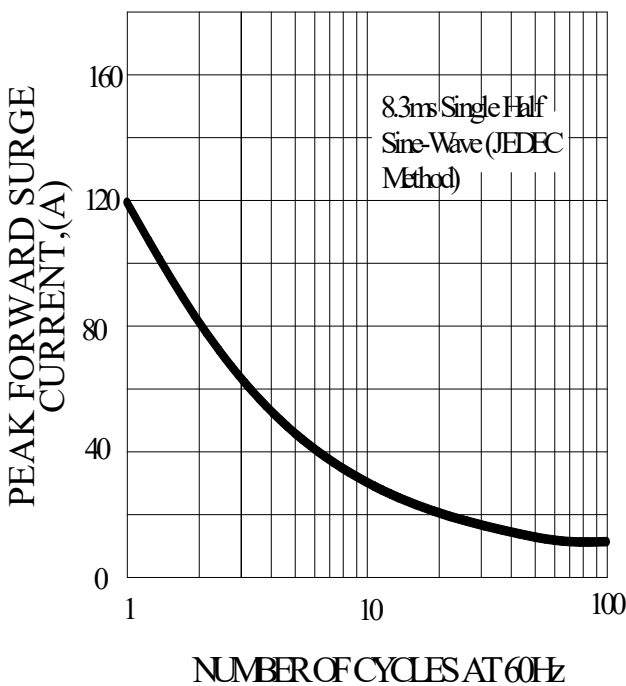
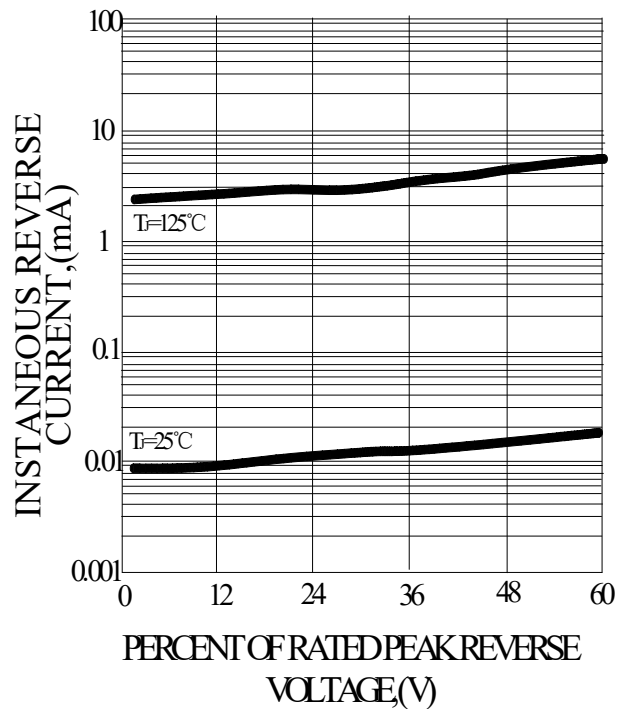
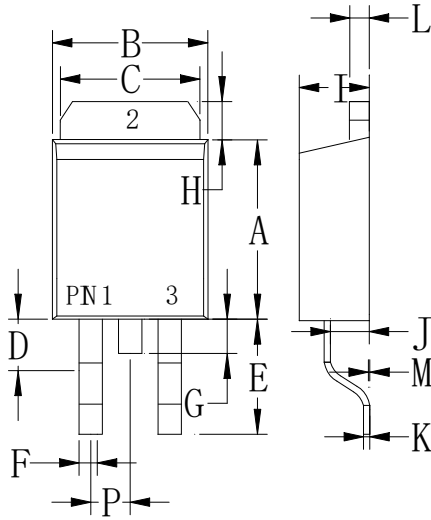


FIG4-TYPICAL REVERSE CHARACTERISTICS



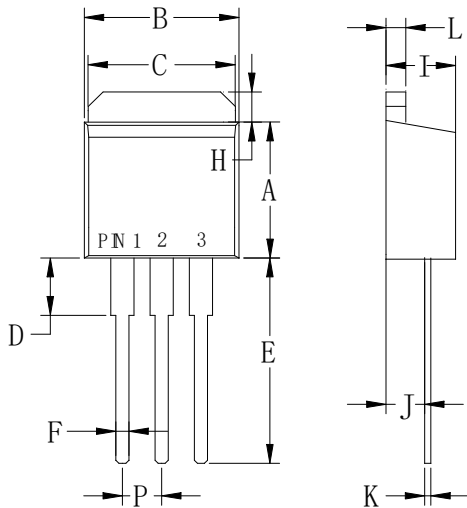
**TO-263**



TO-263		
Dim	Min	Max
A	.323 (8.20)	.348 (8.85)
B	.394 (10.0)	.413 (10.5)
C	.394 (10.0)	.402 (10.2)
D	.077 (1.95)	.100 (2.55)
E	.204 (5.17)	.227 (5.77)
F	.027 (0.68)	.037 (0.94)
G	—	.067 (1.70)
H	.046 (1.17)	.053 (1.34)
I	.175 (4.44)	.191 (4.86)
J	.100 (2.54)	.110 (2.79)
K	.014 (0.35)	.025 (0.64)
L	.047 (1.20)	.055 (1.40)
M	.000 (0.00)	.010 (0.25)
P	.095 (2.41)	.105 (2.67)

Dimensions in inches and (millimeters)

**TO-262**

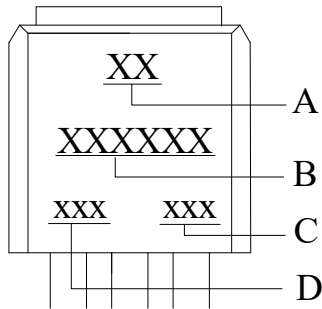


TO-262		
Dim	Min	Max
A	.323 (8.20)	.348 (8.85)
B	.394 (10.0)	.413 (10.5)
C	.394 (10.0)	.402 (10.2)
D	.140 (3.56)	.160 (4.06)
E	.510 (13.0)	.560 (14.3)
F	.027 (0.68)	.037 (0.94)
H	.046 (1.17)	.053 (1.34)
I	.175 (4.44)	.185 (4.86)
J	.100 (2.54)	.110 (2.79)
K	.014 (0.35)	.025 (0.64)
L	.045 (1.14)	.055 (1.40)
P	.095 (2.41)	.105 (2.67)

Dimensions in inches and (millimeters)

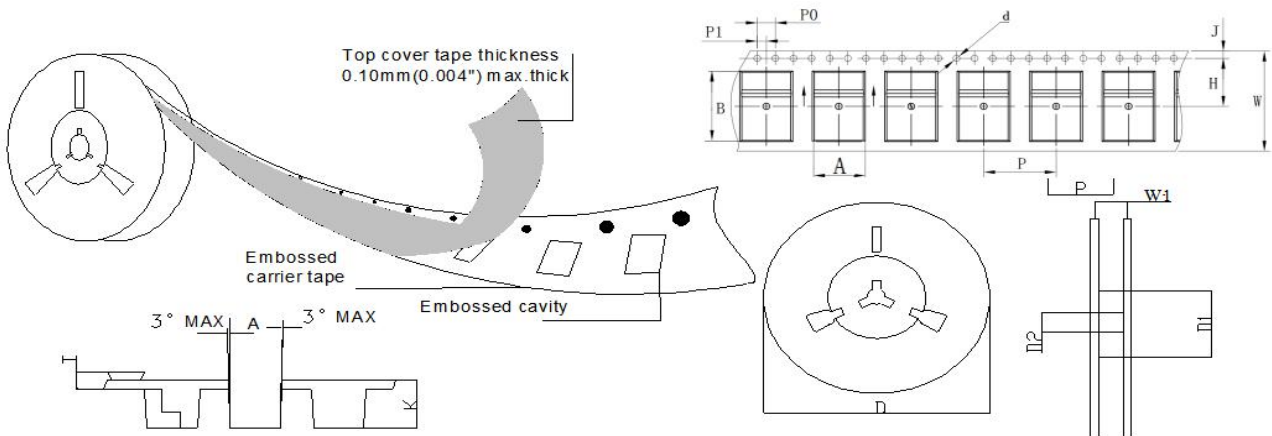
## Marking and packaging illustration

### 1、Marking



SYMBOL	Explanation
<b>A</b>	Trademark
<b>B</b>	Product Name
<b>C</b>	Date Code
<b>D</b>	Product Information

### 2、Packaging

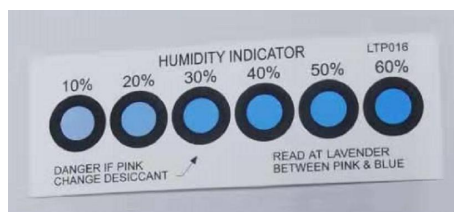


SPECIFICATIONS mm(inch)		PACKAGE	SPECIFICATIONS mm(inch)		PACKAGE
ITEM	SYM BOL	TO-263	ITEM	SYM BOL	TO-263
Carrier width	A	11.65(0.459)Max	Carrier depth	K	5.15(0.203)Typ
Carrier length	B	17.05(0.672)Max	Punch hole pitch	P	16.00(0.630)Typ
Sprocket hole	d	ø1.50(0.059)Typ	Sprocket hole pitch	P0	4.00(0.157)Typ
Reel outer diameter	D	330.0(13.0)Typ	Embossment center	P1	2.00(0.079)Typ
Reel inner diameter	D1	90.0(3.54)Min	Overall tape thickness	T	0.40(0.016)Typ
Feed hole diameter	D2	13.0(0.512)Typ	Tape width	W	24.0(0.945)Typ
Sprocket hole position	J	1.75(0.069)Typ	Reel width	W1	25.5(1.000)Min
Punch hole position	H	11.50(0.453)Typ			

#### 2.1 真空包装:



铝箔袋

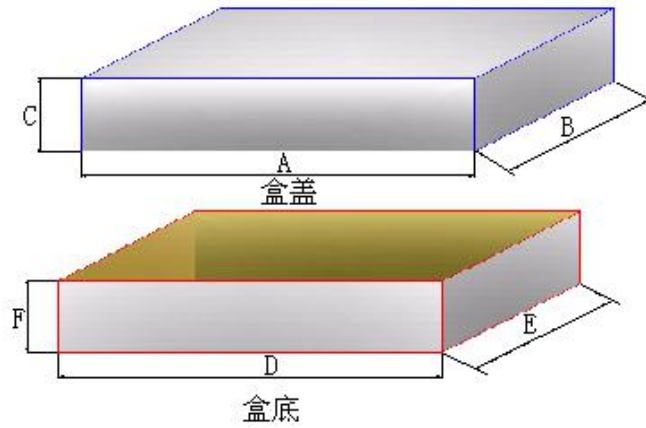


湿度卡



干燥剂

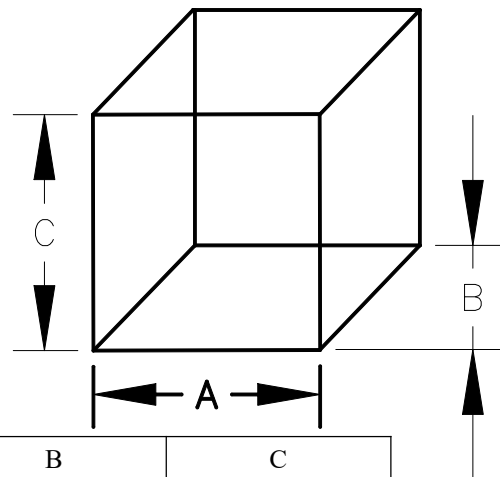
2.2 产品内盒及尺寸：（1600pcs / Box）



类别	A	B	C	D	E	F
TO-263	338	338	63	334	334	61

- 说明：1)、料为瓦楞纸,厚度 1.5mm。  
2)、标示尺寸为内部尺，公差为+1/- 2mm。  
3)、上下表面要求光滑,不得有污染,有划痕等不良。  
4)、盒底和盒盖组合后,要求方正平直。

2.3 产品外箱及尺寸：（8000pcs / Carton）



产品名称	包装外形	A	B	C
TO-263	装 5 个卷装内盒	350	350	345

- 说明：1)、材质：5层瓦楞纸。  
2)、颜色：牛皮纸原色。  
3)、厚度：5.5mm(min)。  
4)、公差：±3mm。  
5)、尺寸标注：内部尺寸。

# 测试报告

		日期	2019/10/23
		客户	创维
		批号	
产品名称	MBRA2060BCT	记录	王航
产品商标	PY	审核	王强

电参数测试				直方图分布					
测试条件	IF=10A	VR=60V	IR=0.1mA	V <sub>F</sub>			判定	合格	
合格标准	V <sub>F</sub> (V) ≤ 0.800	I <sub>R</sub> (uA) ≤ 100.00	V <sub>R</sub> (V) ≥ 60	MAX	MIN	R	AVG	σ	CPK
				0.708	0.698	0.010	0.703	0.002	13.43
1	0.700	3.320	62.4						
2	0.702	2.240	69.2						
3	0.703	3.000	65.6						
4	0.704	3.010	64.8						
5	0.708	2.910	66.7						
6	0.703	2.930	66.3						
7	0.702	2.930	67.1						
8	0.705	2.950	67.0						
9	0.703	3.560	67.4						
10	0.706	2.980	67.2						
11	0.702	3.750	67.8						
12	0.705	3.020	67.6						
13	0.703	4.180	68.1						
14	0.705	4.660	68.0						
15	0.704	3.400	68.2						
16	0.705	4.010	68.1						
17	0.699	3.000	68.3						
18	0.701	6.880	68.3						
19	0.703	2.990	68.0						
20	0.704	3.090	68.4						
21	0.700	2.980	67.9						
22	0.706	2.970	67.7						
23	0.698	3.040	67.2						
24	0.704	2.990	67.5						
25	0.704	2.970	66.8						
26	0.707	3.040	67.0						
27	0.700	3.000	66.2						
28	0.700	2.960	66.7						
29	0.701	3.000	66.0						
30	0.704	3.010	66.3						
31	0.706	3.130	68.2						
32	0.701	2.990	65.6						
33	0.705	3.710	68.3						
34	0.702	3.140	68.4						
35	0.702	3.050	68.3						
36	0.708	3.060	68.2						
37	0.704	2.990	68.2						
38	0.704	3.030	68.3						
39	0.699	3.540	67.9						
40	0.704	3.000	68.2						
				MAX	MIN	R	判定	合格	
				6.880	2.240	4.640	3.260	σ	CPK
								0.709	45.48
				V <sub>R</sub>			判定	合格	
				MAX	MIN	R	AVG	σ	CPK
				69.2	62.4	7	67	1.237	1.98

# 可靠性认证要求

序号	试验项目	参考标准	试验条件/方法	每批次样本	Duration/试验判据
1	高压蒸煮	JESD22-102	121±2℃/15PSI/100%RH/96 (-0, +5) h	22	满足参数规格, 0收1退
2	温度冲击	JESD22-A106	TA= -55℃, TB = 150℃/高温或低温端暴露时间t1=30min/50次	22	满足参数规格, 0收1退
3	耐焊接热	JESD22-B106	贴片260 (-0, +5℃) /10±1s	22	满足参数规格, 0收1退
4	高温贮存	JESD22-A103	TA=150℃/168h	22	满足参数规格, 0收1退
5	低温贮存	JESD22-A103	TA=-55℃/168h	22	满足参数规格, 0收1退
6	高温反偏	JESD22-A108	80%VB/100±2℃/168±16h	22	满足参数规格, 0收1退
7	高温高湿	JESD22-A101	85±2℃/85±5%RH/168h	22	满足参数规格, 0收1退
8	正向浪涌	MIL-STD-750	8.3ms single half sine-wave@IFSM=120A	22	满足参数规格, 0收1退
9	可焊锡	JESD22-B102	→可焊性测试245±5℃, 5±0.5s	22	50倍显微镜观察 上锡面积≥95%
10	高温正向	JESD22-A106	TA= -55℃/Tjmax (调整Io最大为IF且使Tj趋近于Tjmax但不超) /168h	22	满足参数规格, 0收1退
11	温度循环	JESD22-A104	TA=-65℃ to +150℃ 10min 变化速率10℃/min 10times	22	满足参数规格, 0收1退

## CHONGQING PINGWEI ENTERPRISE CO.,LTD

### Chemical Composition Of Diode(TO-263)

**Weight:** 1440.120 mg/pcs

Make up of material	Chemical Composition	CAS NO.	Averager (weight%)	weight of part (%)	Substance weight (mg)	Name of supplier
Lead Wire	Copper(Cu)	7440-50-8	99.98	70.8709%	1020.625834	NINGBO HUALONG ELECTRONCS CO,LTD
	Iron(Fe)	7439-89-6	0.015	0.0106%	0.1531245	
	Phosphoru(P)	7723-14-0	0.005	0.0035%	0.0510415	
Chip	Silicon (Si)	7440-21-3	95.5937	0.2967%	4.27303839	JIANGYIN XINSHUN MICROELECTRONIC CO;LTD
	Aluminum(Al)	7429-90-5	2.4242	0.0075%	0.10836174	
	Copper (Cu)	7440-50-8	0.0067	0.0000%	0.00029949	
	Platinum(Pt)	7440-0 6-4	0.0321	0.0001%	0.00143487	
	Titanium (Ti)	7440-32-6	0.1012	0.0003%	0.00452364	
	Nickel (Ni)	7440-02-0	0.2664	0.0008%	0.01190808	
	Silver (Ag)	7440-22-4	1.5757	0.0049%	0.07043379	
Soldering	Lead(Pb)	7439-92-1	95.5	0.2195%	3.1610500	WUXI LIHONG ELECTRONI MATERIALS CO;LTD
	Tin(Sn)	7440-31-5	2	0.0046%	0.0662000	
	Silver(Ag)	7440-22-4	2.5	0.0057%	0.0827500	
Aluminum wire	Aluminum(Al)	7429-90-5	99.995	2.4434%	35.1882405	TANAKA ELECTRONICS SINGAPORE PTE LTD
	Nickel (Ni)	7440-02-0	0.005	0.0001%	0.0017595	
Solder plating	Tin(Sn)	7440-31-5	99.99	3.5507%	51.1348860	YUNNAN TIN CO.,LTD
	Lead(Pb)	7439-92-1	0.0035	0.0001%	0.0017899	
	Iron(Fe)	7439-89-6	0.0045	0.0002%	0.0023013	
	Copper(Cu)	7440-50-8	0.002	0.0001%	0.0010228	
Encapsulation	Silicon dioxide	14808-60-7	64.5	14.5641%	209.7411000	CHANG CHUN SB (CHANG SHU)CO.,LTD
	Epoxy resin	29690-82-2	30	6.7740%	97.5540000	
	Phenolic Resin	9003-35-4	5	1.1290%	16.2590000	
	Carbon black	1333-86-4	0.5	0.1129%	1.6259000	

**Note :** Pb used in high melting temperature type solders is exempted from RoHS.



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