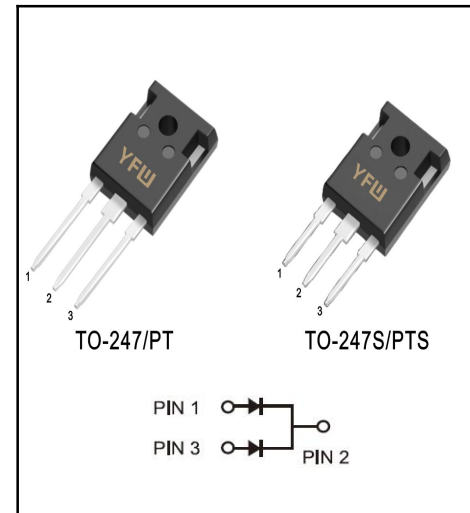


**SCHOTTKY BARRIER RECTIFIER**
**Reverse Voltage - 45 V**
**Forward Current - 40 A**
**FEATURES**

- ◆ Low forward voltage
- ◆ High current capability
- ◆ High forward surge capability
- ◆ Low power losses, High efficiency
- ◆ Guarding for over voltage protection
- ◆ Lead free in comply with EU RoHS 2011/65/EU directives

**MECHANICAL DATA**

- ◆ Case: TO-247/PT TO-247/PTS
- ◆ Solder bath temperature 275°C maximum, 10s per JESD22-106


**Primary Characteristic**

<b>I<sub>o</sub></b>	<b>2*20A</b>
<b>V<sub>RRM</sub></b>	<b>45V</b>
<b>I<sub>FSM</sub></b>	<b>380A</b>
<b>V<sub>F</sub></b>	<b>0.51V</b>
<b>T<sub>J</sub> Max</b>	<b>150°C</b>

**Maximum Ratings (Per Leg) at Ta=25°C unless otherwise specified**

Parameter	Symbols	Value	Units
Maximum Repetitive Peak Reverse Voltage	<b>V<sub>RRM</sub></b>	45	<b>V</b>
Maximum RMS voltage	<b>V<sub>RMS</sub></b>	31.5	<b>V</b>
Maximum DC Blocking Voltage	<b>V<sub>DC</sub></b>	45	<b>V</b>
Maximum Average Forward Rectified Current	Per Leg	20	<b>A</b>
	Total	40	
Peak Forward Surge Current, 8.3ms Single Half Sine-wave	<b>I<sub>FSM</sub></b>	380	<b>A</b>
Operating Temperature Range	<b>T<sub>J</sub></b>	-55 ~ +150	<b>°C</b>
Storage Temperature Range	<b>T<sub>STG</sub></b>	-55 ~ +150	<b>°C</b>
Typical Thermal Resistance <sup>(Note1)</sup> TO-247PT, TO-247PTS	<b>R<sub>θJA</sub> R<sub>θJC</sub></b>	2	<b>°C/W</b>

**Note1: Thermal resistance from Junction to case per leg mounted on heatsink.**
**Electrical Characteristics (Per Leg) unless otherwise specified**

Characteristics	Symbols	Value		Units	
		Typ	Max		
Forward Voltage Drop(Note2) at I <sub>F</sub> =5A at I <sub>F</sub> =10A at I <sub>F</sub> =20A	<b>V<sub>F</sub></b>	TA=25°C	0.45	-	<b>V</b>
		TA=125°C	0.36	-	
		TA=25°C	0.51	-	
		TA=125°C	0.44	-	
		TA=25°C	0.56	0.65	
		TA=125°C	0.51	-	
Maximum Reverse Current at V <sub>R</sub> =45V	<b>I<sub>R</sub></b>	TA=25°C	20	100	<b>uA</b>
		TA=125°C	7	-	<b>mA</b>

**Note2: Pulse test: 300 μs pulse width, 1 % duty cycle**

**RATINGS AND CHARACTERISTIC CURVES**

FIG.1 MAXIMUM FORWARD CURRENT DERATING CURVE

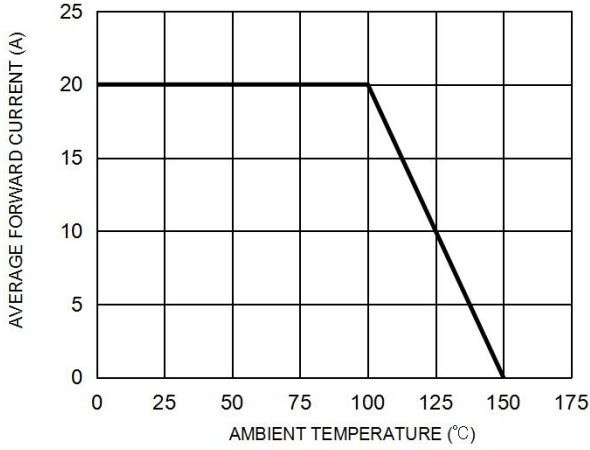


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER LEG

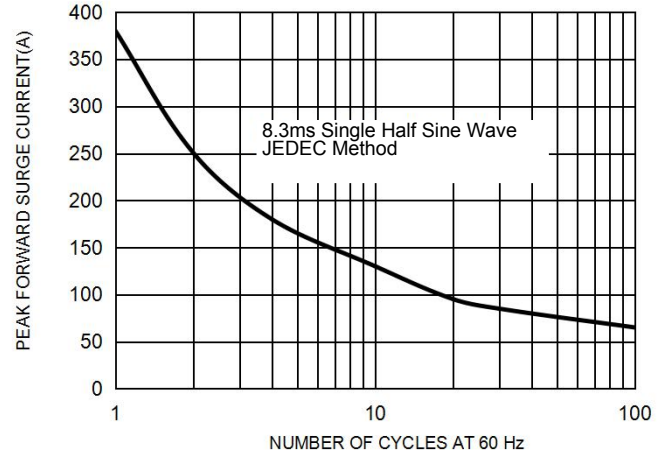


FIG. 3 TYPICAL FORWARD CHARACTERISTICS PER LEG

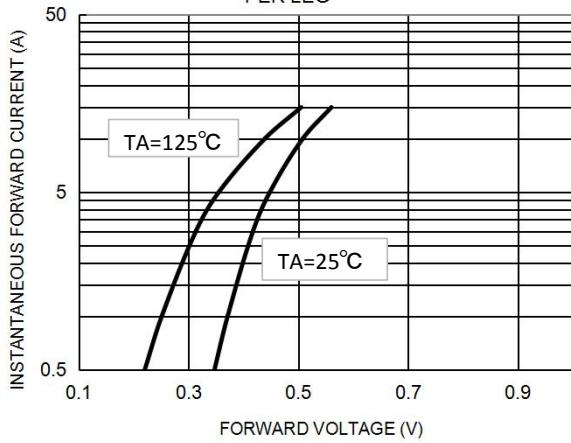
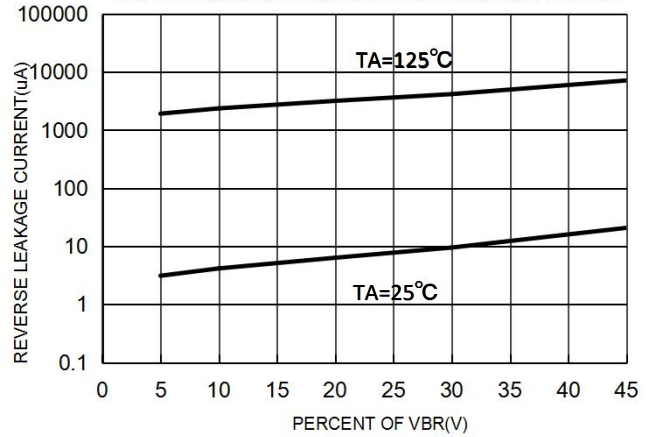
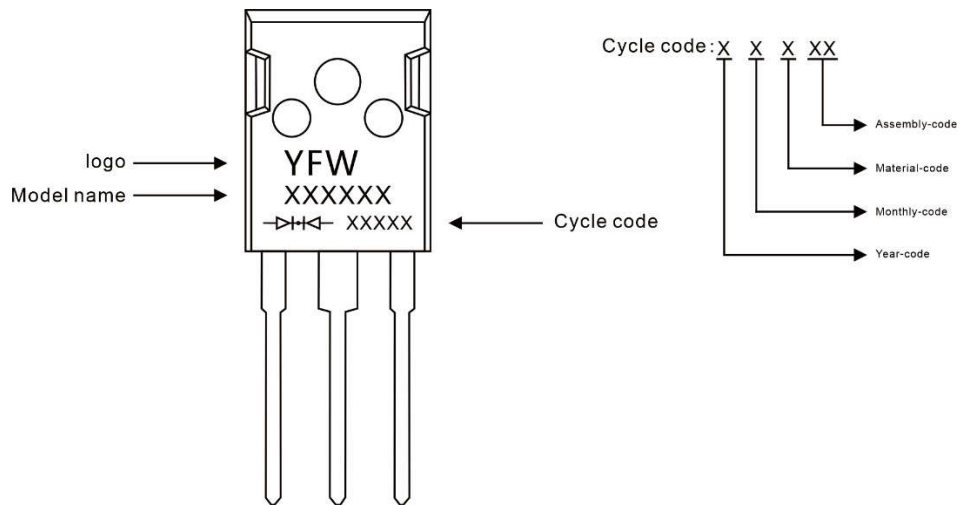


FIG. 4 TYPICAL REVERSE CHARACTERISTICS PER LEG



**Marking Diagram**



**Ordering information**

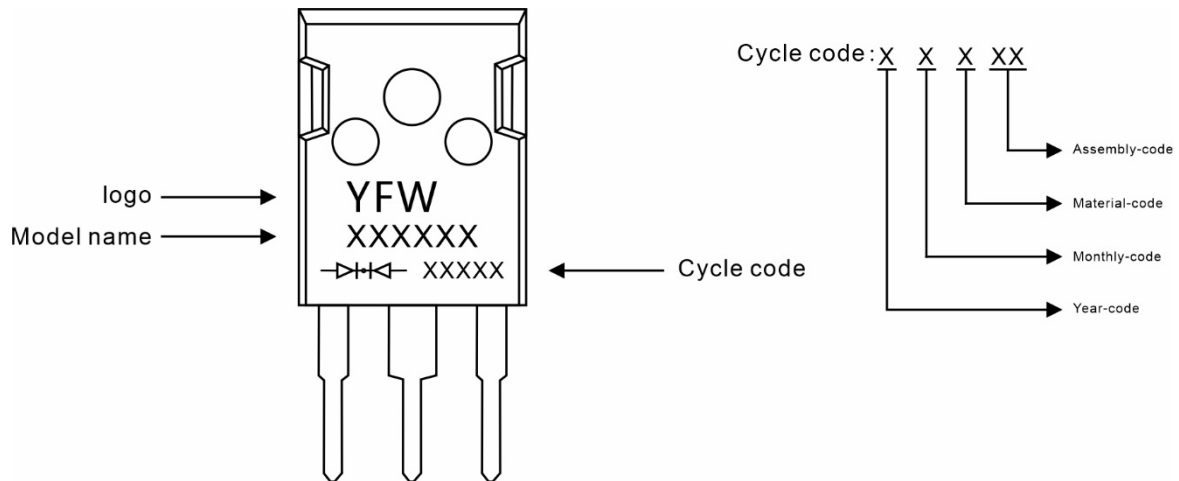
Model name	Package	Unit Weight	Base Quantity	Packing Quantity
MBR4045PT	TO-247	0.209oz(5.93g)	30pcs/tube	600PCS/Box 2400PCS/Carton

**Package Dimensions**

**TO-247**

Symbol	Dimensions in mm		Dimensions in Inch	
	Min.	Max.	Min.	Max.
A	4.90	5.10	0.193	0.201
A1	1.90	2.10	0.075	0.083
A2	2.29	2.54	0.090	0.100
b	1.00	1.40	0.039	0.055
b1	2.00	2.20	0.079	0.087
b2	3.00	3.20	0.118	0.126
c	0.50	0.70	0.020	0.028
D	15.75	16.05	0.620	0.632
E	20.20	20.80	0.795	0.819
e	5.45 (BSC)		0.215 (BSC)	
e1	10.90 (BSC)		0.429 (BSC)	
F	6.05	6.25	0.238	0.246
F1	5.80	6.00	0.228	0.236
L	20.10	20.40	0.791	0.803
L1	4.05	4.35	0.159	0.171
Φ	3.50	3.70	0.138	0.146

**Marking Diagram**



**Ordering information**

Model name	Package	Unit Weight	Base Quantity	Packing Quantity
<b>MBR4045PTS</b>	TO-247S	0.158oz(4.48g)	30pcs/tube	600PCS/Box 2400PCS/Carton

**Package Dimensions**

**TO-247S**

Symbol	Dimensions in mm		Dimensions in Inch	
	Min.	Max.	Min.	Max.
A	15.0	16.0	0.59	0.63
B	19.5	20.5	0.77	0.81
C	33.5	35.5	1.32	1.40
D	5.0	6.0	0.20	0.24
E	3.5	4.5	0.14	0.18
F	2.5	3.5	0.10	0.14
G	1.75	2.5	0.07	0.14
H	3.0	4.0	0.12	0.16
I	9.0	11.0	0.35	0.43
J	4.9	5.1	0.19	0.20
K	1.0	1.3	0.04	0.05
L	3.75	4.25	0.15	0.17
M	4.75	5.25	0.19	0.21
N	1.8	2.2	0.07	0.09
O	0.45	0.6	0.018	0.024
P	5.08		0.2	
Q	1.2	1.3	0.05	0.051

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