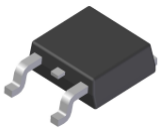
MBRS3045 THRU MBRS30200

30 AMP SCHOTTKY BARRIER RECTIFIERS

VOLTAGE RANGE
45 to 200 Volts
CURRENT
30 Ampere

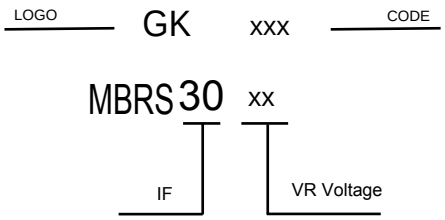
FEATURES

* Low forward voltage drop
* High current capability
* High reliability
* High surge current capability
* Epitaxial construction



MECHANICAL DATA

* Case: Molded plastic
* Epoxy: UL 94V-0 rate flame retardant
* Lead: Lead solderable per MIL-STD-202, method 208 guranteed
* Polarity: As Marked
* Mounting position: Any
* Weight: 2.24 grams



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating 25℃ ambient temperature uniess otherwies specified.
Single phase half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

TYPE NUMBER	MBRS 3045	MBRS 3060	MBRS 30100	MBRS 30150	MBRS 30200	UNITS
Maximum Recurrent Peak Reverse Voltage	45	60	100	150	200	V
Maximum RMS Voltage	32	42	70	105	140	V
Maximum DC Blocking Voltage	45	60	100	150	200	V
Maximum Average Forward Rectified Current	30					A
Peak Forward Surge Current, 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	200					A
Maximum Instantaneous Forward Voltage at 30A	0.55	0.75	0.85	0.92		V
Maximum DC Reverse Current Ta=25℃	0.1		0.02			mA
at Rated DC Blocking Voltage Ta=125℃	5		2			mA
Typical Junction Capacitance (Note1)	1000					pF
Typical Thermal Resistance R JA (Note 2)	3.5					℃/W
Operating Temperature Range TJ	-55 — +150					℃
Storage Temperature Range TSTG	-55 — +150					℃

NOTES:

1. Measured at 1MHz and applied reverse voltage of 4.0V D.C.

2. Thermal Resistance Junction to Ambient Vertical PC Board Mounting 0.5"(12.7mm) Lead Length.

RATING AND CHARACTERISTIC CURVES

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

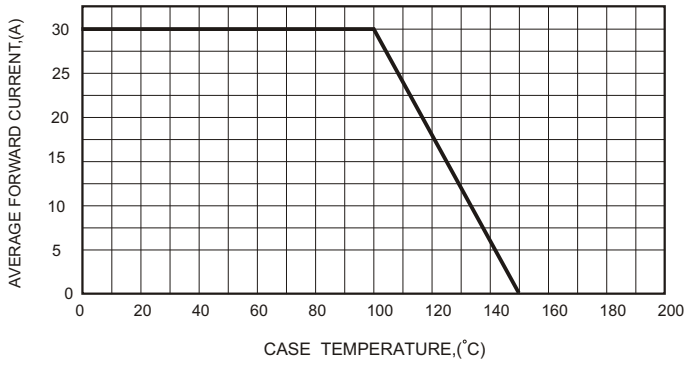


FIG.2-TYPICAL FORWARD CHARACTERISTICS

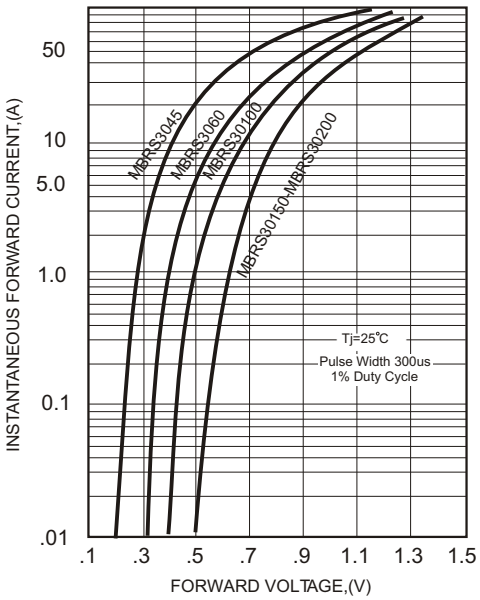


FIG.3 - TYPICAL REVERSE CHARACTERISTICS

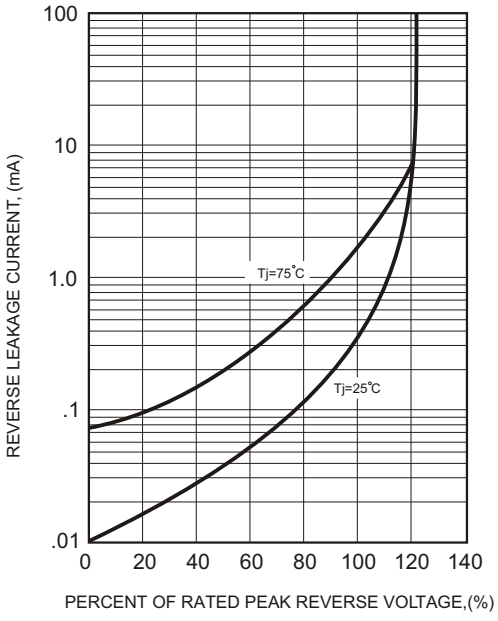


FIG.4-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

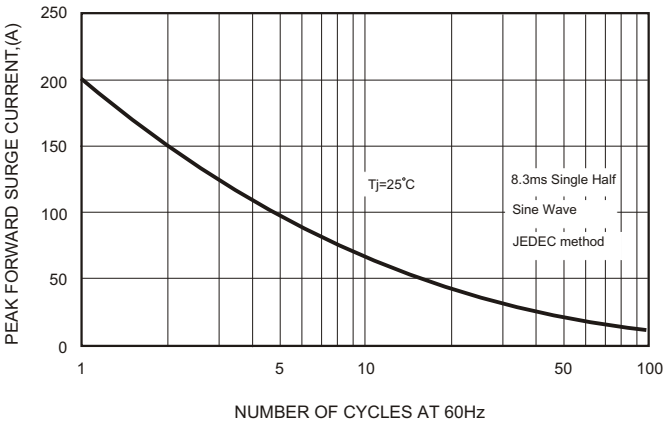
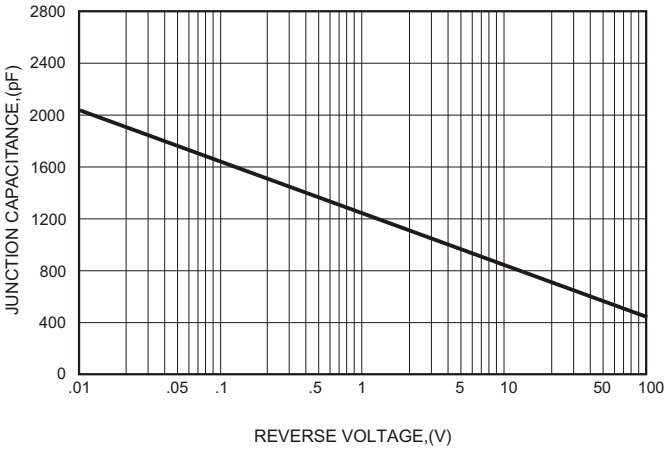


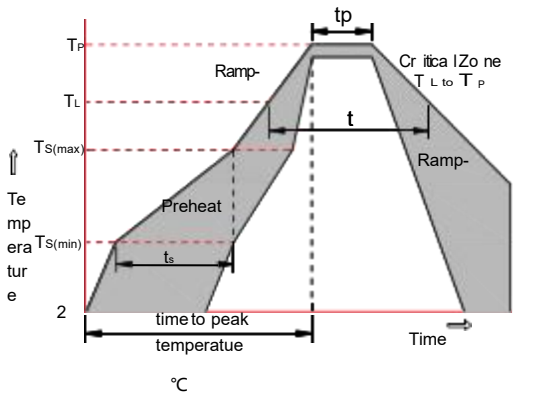
FIG.5-TYPICAL JUNCTION CAPACITANCE



Soldering parameters

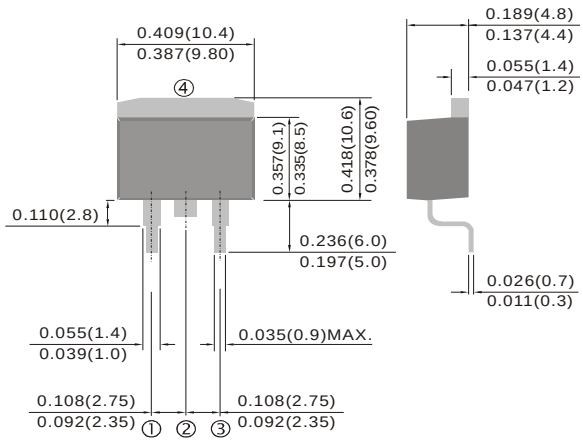
Reflow Condition		Pb-Free assembly (see as bellow)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150℃
	-Temperature Max($T_{s(max)}$)	+200℃
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3℃/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3℃/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217℃
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)℃
Time within 5℃ of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6℃/sec. Max
Time 25℃ to Peak Temp (T_P)		8 min. Max
Do not exceed		+260℃

FIG5: Reflow condition

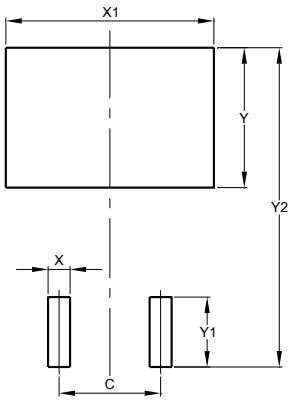


Package Dimensions & Suggested Pad Layout

TO-263 / D²PAK



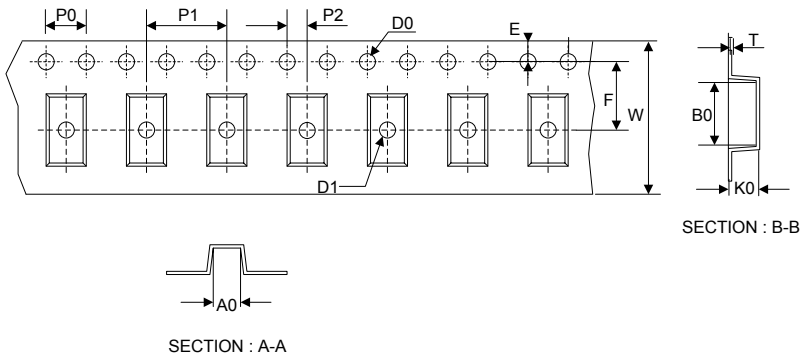
Dimensions in inches and (millimeters)



Dimensions	Value (in mm)
C	5.05
X	1.40
X1	11.00
Y	9.20
Y1	4.00
Y2	16.60

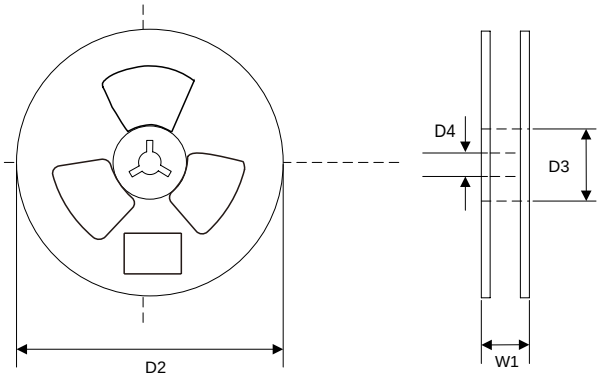
Tape & rell specification

Tape



Symbol	Dimension (mm)
P0	4.00±0.20
P1	16.00±0.20
P2	2.00±0.20
D0	1.50±0.20
D1	1.50±0.20
E	1.75±0.15
F	11.50±0.20
W	24.00±0.40
A0	10.50±0.20
B0	16.00±0.25
K0	5.20±0.25
T	0.35±0.10

13” Reel



D2	330.0±5.0
D3	73Min.
D4	14.0±2.5
W1	28.00±2.0
Quantity: 800PCS	