

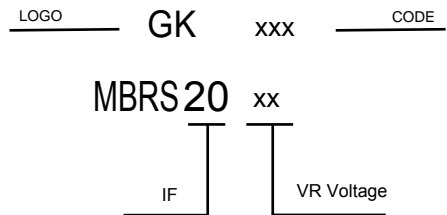
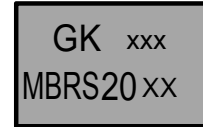
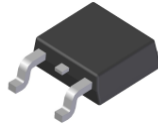
**VOLTAGE RANGE**  
45 to 100 Volts  
**CURRENT**  
20 Ampere

## 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 guaranteed
- \* Polarity: As Marked
- \* Mounting position: Any
- \* Weight: 2.24 grams



## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating 25°C ambient temperature unless otherwise specified.  
Single phase half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

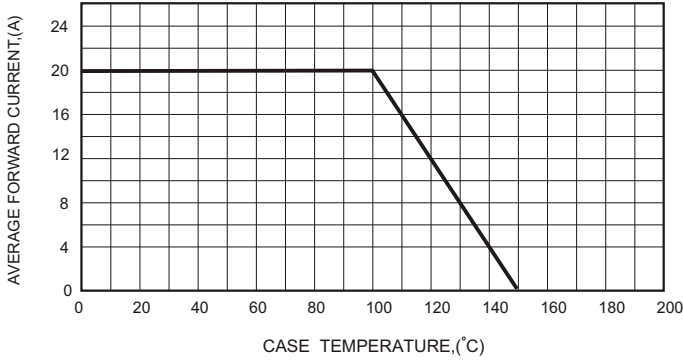
TYPE NUMBER	MBRS 2045	MBRS 2060	MBRS 20100	MBRS 20150	MBRS 20200	UNITS
Maximum Recurrent Peak Reverse Voltage	45	60	100	150	200	V
Maximum RMS Voltage	32	42	70	105	140	V
Maximum DC Blocking Voltage	45	60	100	150	200	V
Maximum Average Forward Rectified Current	20					A
Peak Forward Surge Current, 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	175					A
Maximum Instantaneous Forward Voltage at 20A	0.55	0.75	0.85	0.92		V
Maximum DC Reverse Current Ta=25°C	0.1		0.02			mA
at Rated DC Blocking Voltage Ta=125°C	5		2			mA
Typical Junction Capacitance (Note1)	900					pF
Typical Thermal Resistance R JA (Note 2)	3.5					°C/W
Operating Temperature Range Tj	-55 — +175					°C
Storage Temperature Range Tstg	-55 — +175					°C

### NOTES:

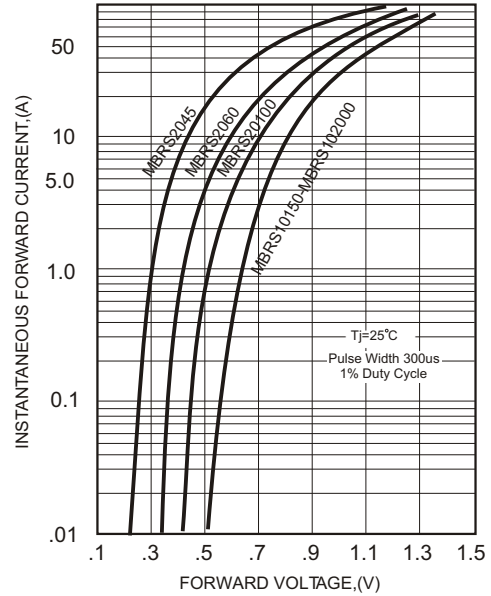
1. Measured at 1MHz and applied reverse voltage of 4.0V D.C.
2. Thermal Resistance Junction to Ambient Vertical PC Board Mounting 0.5"(12.7mm) Lead Length.

**RATING AND CHARACTERISTIC CURVES**

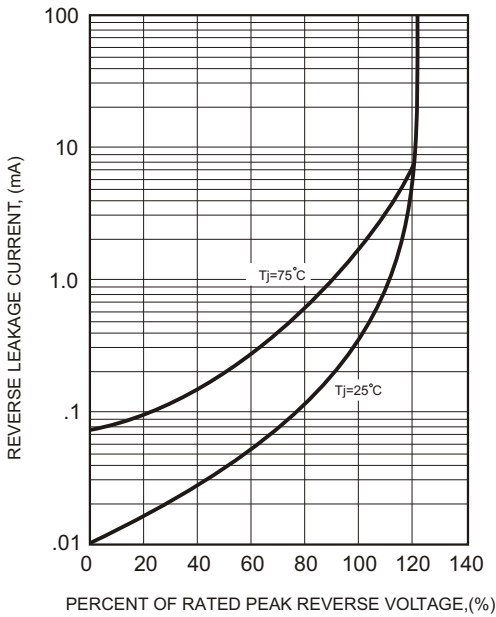
**FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE**



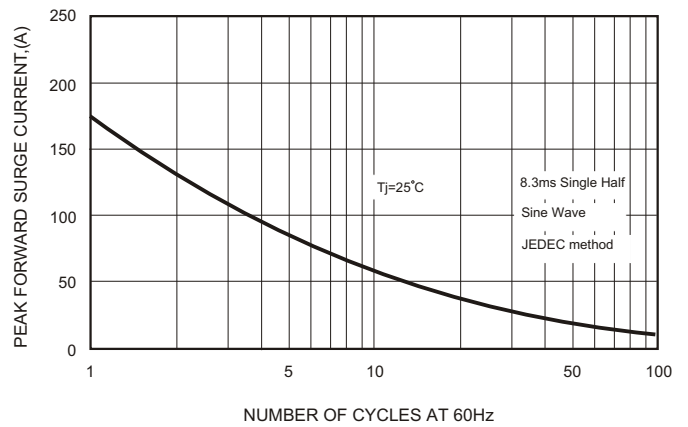
**FIG.2-TYPICAL FORWARD CHARACTERISTICS**



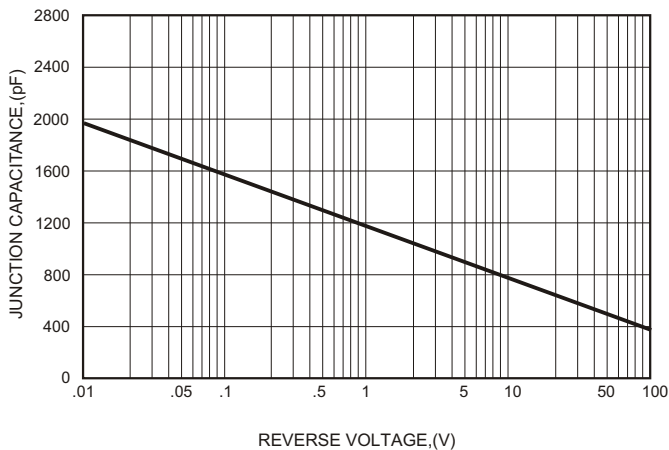
**FIG.3 - TYPICAL REVERSE CHARACTERISTICS**



**FIG.4-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT**



**FIG.5-TYPICAL JUNCTION CAPACITANCE**



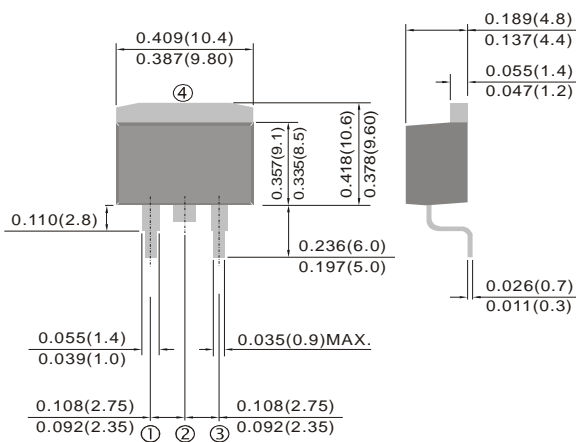
Soldering parameters

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

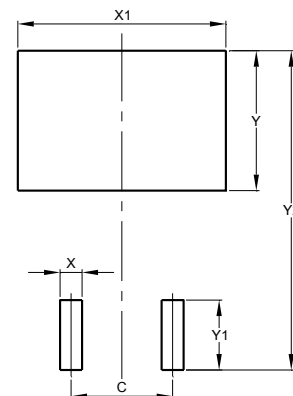


Package Dimensions & Suggested Pad Layout

TO-263 / D<sup>2</sup>PAK



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 & reel 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					