MBR10xxxCG-Q1 Series

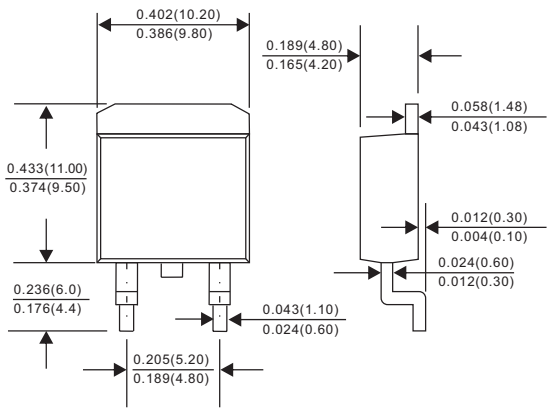
10.0A Surface Mount Schottky Barrier Rectifiers - 40V-200V

Features

- Batch process design, excellent power dissipation offers better reverse leakage current and thermal resistance.
- Low power loss, high efficiency.
- High current capability, low forward voltage drop.
- High surge capability.
- Guardring for overvoltage protection.
- Ultra high-speed switching.
- Silicon epitaxial planar chip, metal silicon junction.
- Lead-free parts meet environmental standards of MIL-STD-19500 /228
- Compliant to Halogen-free
- Suffix "-Q1" for AEC-Q101

Package outline

TO-263AB/D2PAK



Dimensions in inches and (millimeters)

Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, TO-263AB / D2PAK
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Mounting Position : Any

Maximum ratings and Electrical Characteristics (AT T_A=25°C unless otherwise noted)

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Forward rectified current	See Fig.1	I_O			10.0	A
Forward surge current	8.3ms single half sine-wave (JEDEC methode)	I_{FSM}			120	A
Reverse current	$V_R = V_{RRM}$ T_J = 25°C	I_R			0.05	mA
	$V_R = V_{RRM}$ T_J = 125°C				10	
Thermal resistance	Junction to case	$R_{\theta JC}$		3.0		°C/W
Storage temperature		T_{STG}	-65		+175	°C

SYMBOLS	V_{RRM} *1 (V)	V_{RMS} *2 (V)	V_R *3 (V)	V_F *4 (V)	Operating temperature T_J, (°C)
MBR1040CG-Q1	40	28	40	0.70	-55 to +150
MBR1045CG-Q1	45	31.5	45		
MBR1050CG-Q1	50	35	50	0.80	
MBR1060CG-Q1	60	42	60		
MBR1080CG-Q1	80	56	80	0.85	
MBR10100CG-Q1	100	70	100		
MBR10150CG-Q1	150	105	150	0.92	-55 to +175
MBR10200CG-Q1	200	140	200		

*1 Repetitive peak reverse voltage

*2 RMS voltage

*3 Continuous reverse voltage

*4 Maximum forward voltage IF = 5.0A, 25°C

*5 Maximum of forward voltage IF=10.0A, 25°C

Rating and characteristic curves

FIG. 1 - FORWARD DERATING CURVE

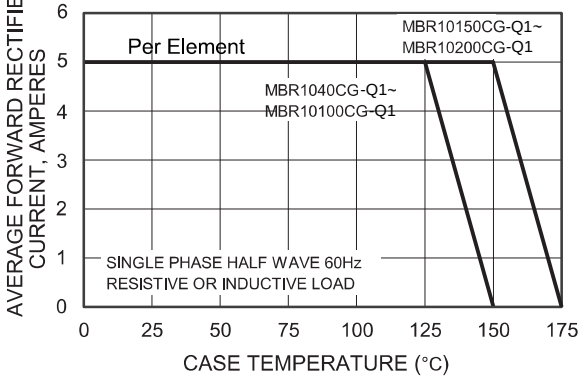


FIG. 2 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

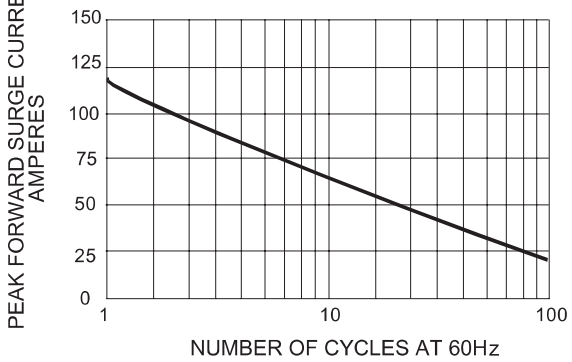


FIG. 3 - TYPICAL REVERSE CHARACTERISTICS

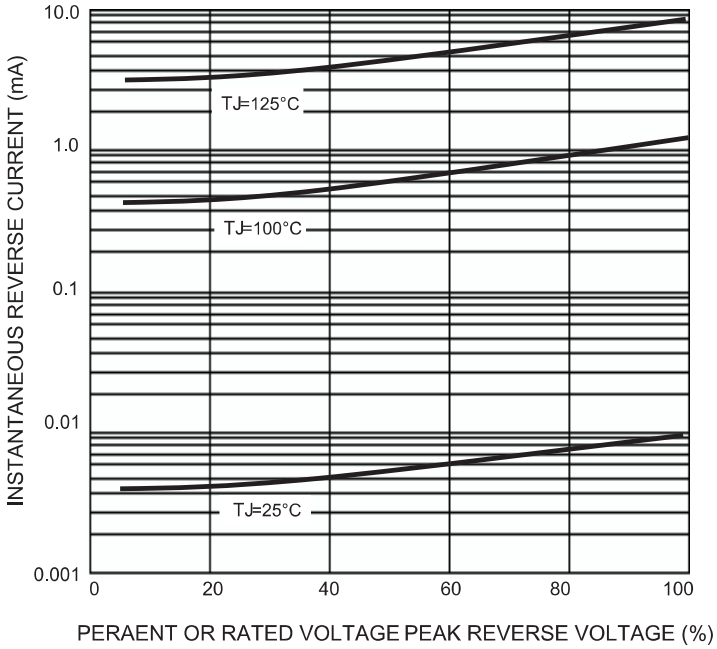
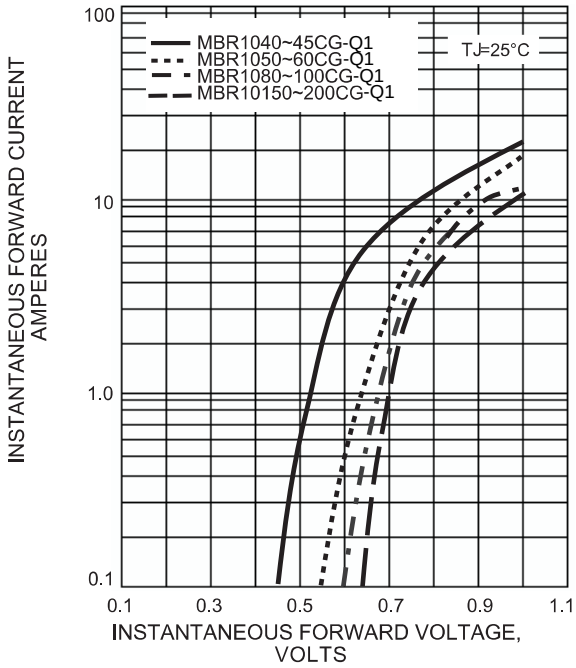
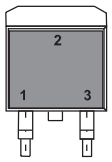
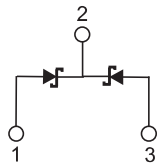


FIG. 4 - TYPICAL FORWARD CHARACTERISTIC PER LEG



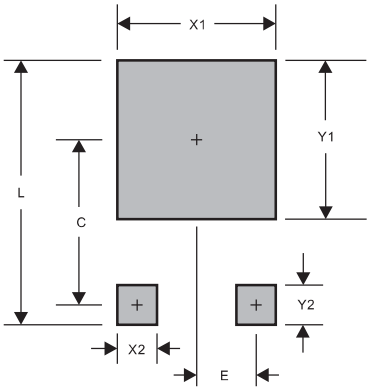
Pinning information

Pin	Simplified outline	Symbol
Pin1 anode Pin2 cathode Pin3 anode		

Marking

Type number	Marking code
MBR1040CG-Q1	MBR1040CG
MBR1045CG-Q1	MBR1045CG
MBR1050CG-Q1	MBR1050CG
MBR1060CG-Q1	MBR1060CG
MBR1080CG-Q1	MBR1080CG
MBR10100CG-Q1	MBR10100CG
MBR10150CG-Q1	MBR10150CG
MBR10200CG-Q1	MBR10200CG

Suggested solder pad layout



PACKAGE	D2PAK
C	0.374(9.50)
E	0.098(2.50)
L	0.665(16.90)
X1	0.425(10.80)
X2	0.071(1.80)
Y1	0.449(11.40)
Y2	0.138(3.50)

Dimensions in inches and (millimeters)