

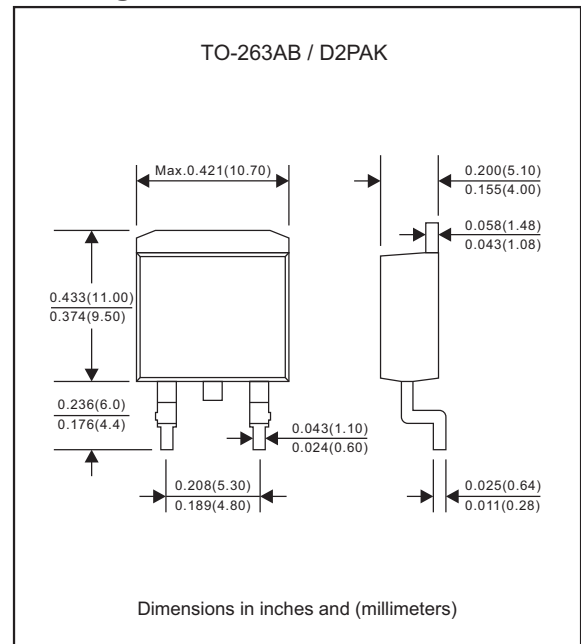
Features

- 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

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

Package outline



Maximum Ratings (AT $T_A=25^\circ\text{C}$ unless otherwise noted)

PARAMETER	SYMBOLS	MBR2040CG-Q1	MBR2045CG-Q1	MBR2060CG-Q1	MBR20100CG-Q1	MBR20150CG-Q1	MBR20200CG-Q1	UNIT
Repetitive peak reverse voltage	V_{RRM}	40	45	60	100	150	200	V
RMS voltage	V_{RMS}	28	31.5	42	70	105	140	V
DC blocking voltage	V_{DC}	40	45	60	100	150	200	V
Average forward rectified current per device per diode	I_o	20 10						A
Peak forward surge current 8.3ms single half sine-wave(JEDEC method)	I_{FSM}	150						A
Operating junction temperature range	T_J	-55 to +125			-55 to +150			$^\circ\text{C}$
Storage temperature range	T_{STG}	-55 to +150						$^\circ\text{C}$

Maximum Electrical Characteristics (AT $T_A=25^\circ\text{C}$ unless otherwise noted)

PARAMETER	SYMBOLS	MBR2040CG-Q1	MBR2045CG-Q1	MBR2060CG-Q1	MBR20100CG-Q1	MBR20150CG-Q1	MBR20200CG-Q1	UNIT
Forward voltage per leg at $I_F=10\text{A}$	V_F	0.55		0.70	0.85	0.95		V
DC reverse current at $T_A=25^\circ\text{C}$ at rated DC blocking voltage at $T_A=100^\circ\text{C}$	I_R	0.5 50			0.05 10			mA

Thermal Characteristics

PARAMETER	SYMBOLS	MBR2040CG-Q1	MBR2045CG-Q1	MBR2060CG-Q1	MBR20100CG-Q1	MBR20150CG-Q1	MBR20200CG-Q1	UNIT
Typical thermal resistance junction to case per leg	$R_{\theta JC}$	3.5						$^\circ\text{C/W}$

Rating and characteristic curves (MBR2040CG-Q1 THRU MBR20200CG-Q1)

FIG.1-DERATING CURVE OUTPUT RECTIFIED CURRENT

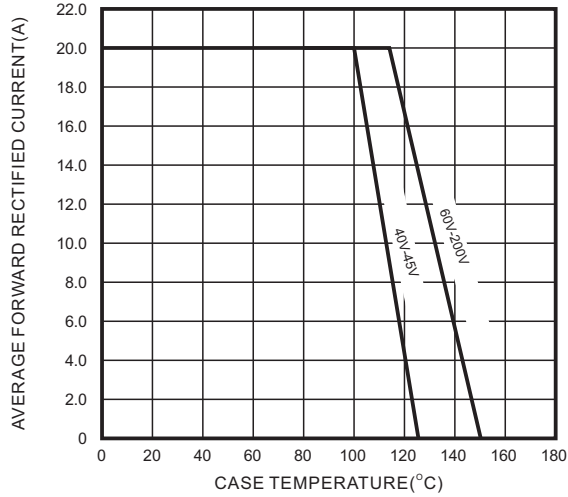


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

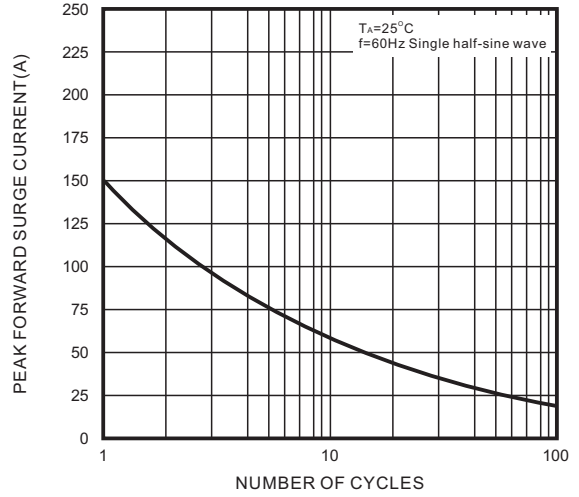


FIG.3-TYPICAL REVERSE LEAKAGE CHARACTERISTICS

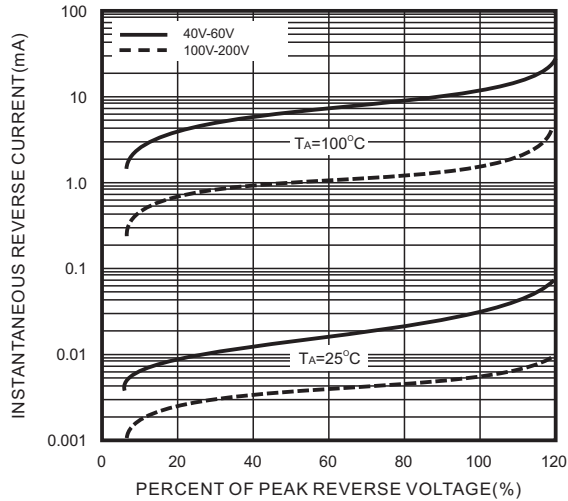
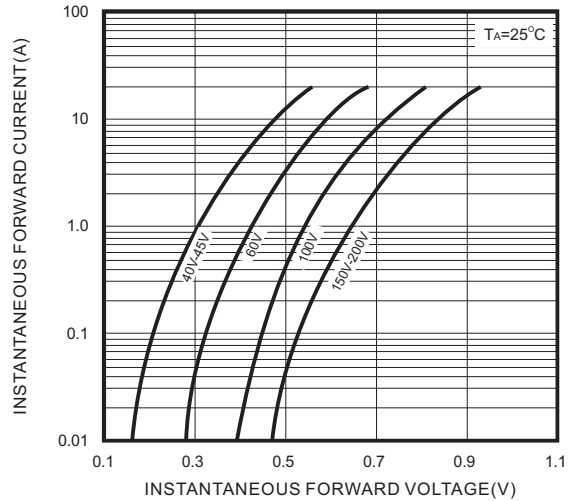
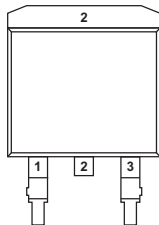
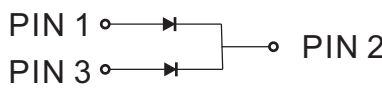


FIG.4-TYPICAL FORWARD VOLTAGE CHARACTERISTICS



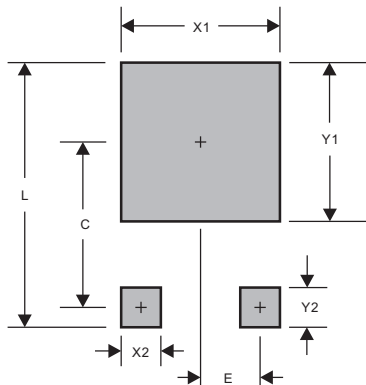
Pinning information

Pin	Simplified outline	Symbol
Pin1 anode Pin2 cathode Pin3 anode		

Marking

Type number	Marking code
MBR2040CG-Q1	MBR2040CT
MBR2045CG-Q1	MBR2045CT
MBR2060CG-Q1	MBR2060CT
MBR20100CG-Q1	MBR20100CT
MBR20150CG-Q1	MBR20150CT
MBR20200CG-Q1	MBR20200CT

Suggested solder pad layout



PACKAGE	TO-263AB/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)