MBR2040CD-Q1 THRU MBR20200CD-Q1

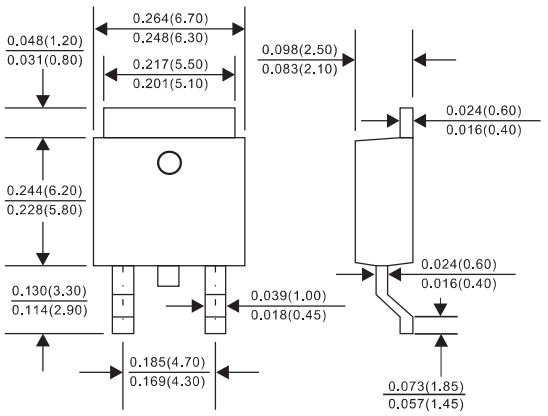
20.0A Surface Mount Schottky Barrier Rectifiers - 40V-200V

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-252AB/DPAK



Dimensions in inches and (millimeters)

Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, TO-252AB/DPAK
- 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			20.0	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	
Diode junction capacitance	f=1MHz and applied 4V DC reverse voltage	C_J		560		pF
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)
MBR2040CD-Q1	40	28	40	0.70	-55 to +150
MBR2045CD-Q1	45	31.5	45		
MBR2050CD-Q1	50	35	50	0.80	
MBR2060CD-Q1	60	42	60		
MBR2080CD-Q1	80	56	80	0.85	
MBR20100CD-Q1	100	70	100		
MBR20150CD-Q1	150	105	150	0.92	-55 to +175
MBR20200CD-Q1	200	140	200		

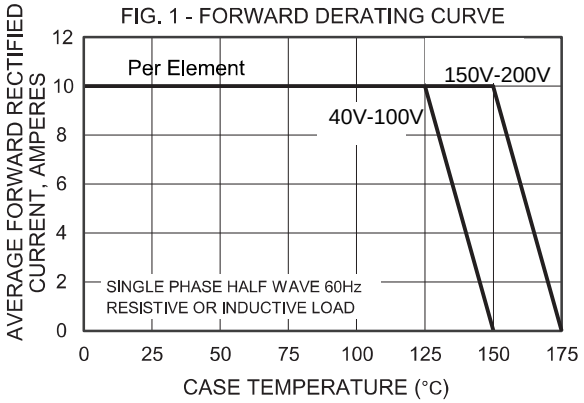
*1 Repetitive peak reverse voltage

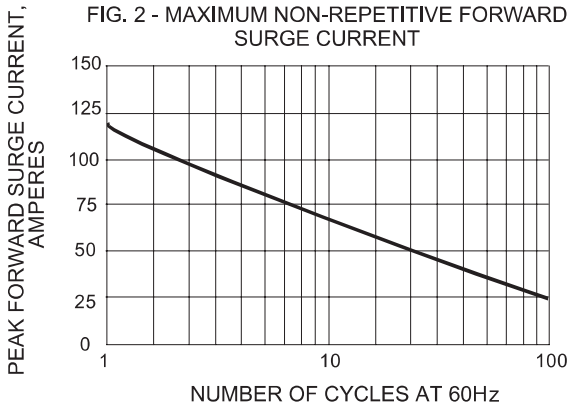
*2 RMS voltage

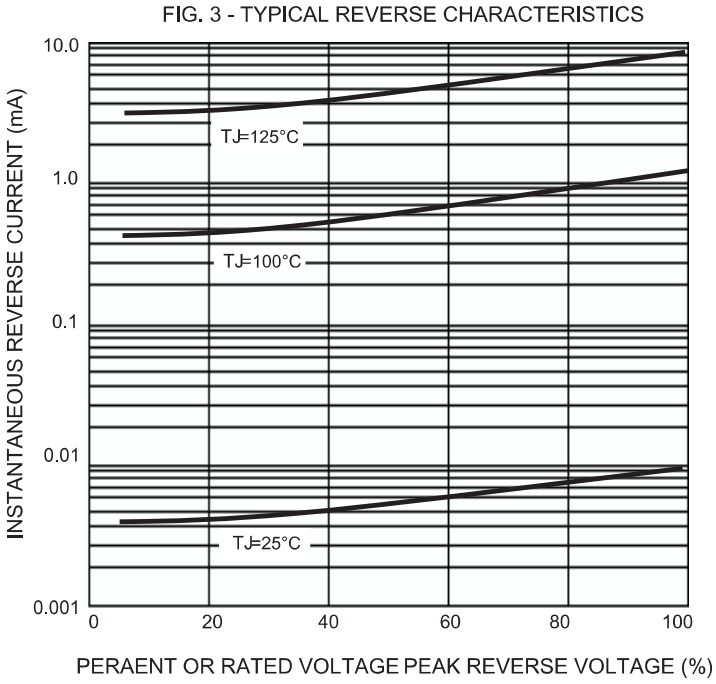
*3 Continuous reverse voltage

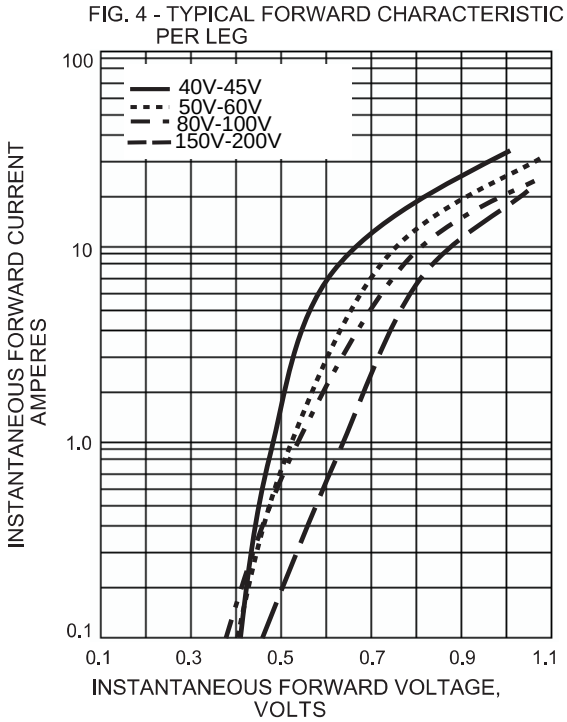
*4 Maximum forward voltage IF = 10.0A, 25°C

Rating and characteristic curves

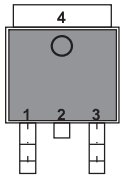
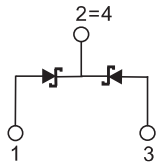








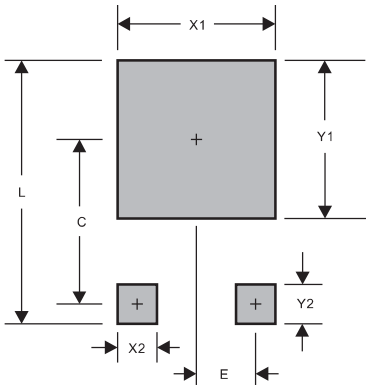
Pinning information

Pin	Simplified outline	Symbol
Pin1 anode Pin2=4 cathode Pin3 anode		

Marking

Type number	Marking code
MBR2040CD-Q1	SK2040
MBR2045CD-Q1	SK2045
MBR2050CD-Q1	SK2050
MBR2060CD-Q1	SK2060
MBR2080CD-Q1	SK2080
MBR20100CD-Q1	SK20100
MBR20150CD-Q1	SK20150
MBR20200CD-Q1	SK20200

Suggested solder pad layout



PACKAGE	DPAK
C	0.272(6.90)
E	0.091(2.30)
L	0.457(11.60)
X1	0.276(7.00)
X2	0.059(1.50)
Y1	0.276(7.00)
Y2	0.098(2.50)

Dimensions in inches and (millimeters)