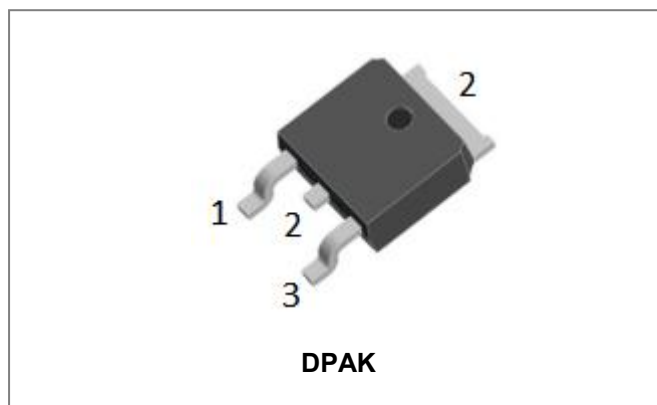


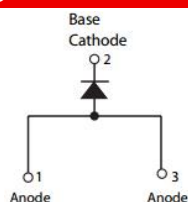
## MBRD320 SCHOTTKY RECTIFIER



### Features

- 150°C T<sub>J</sub> operation
- Center tap configuration
- Low forward voltage drop
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- This is a Pb – Free Device
- “-A” is an AEC-Q101 qualified device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

### Circuit Diagram



### Applications

- Disk drives
- Switching power supply
- Converters
- Free-Wheeling diodes
- Reverse battery protection
- Battery charging

### Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	-	20	V
Average Rectified Forward Current	I <sub>F(AV)</sub>	50% duty cycle @T <sub>c</sub> =125°C, rectangular wave form	3	A
Peak One Cycle Non-Repetitive Surge Current	I <sub>FSM</sub>	8.3ms, Half Sine pulse	75	A

### Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop*	V <sub>F1</sub>	@ 3A, Pulse, T <sub>J</sub> = 25 °C	0.40	0.60	V
		@ 6A, Pulse, T <sub>J</sub> = 25 °C	0.47	0.70	
Reverse Current *	I <sub>R1</sub>	@V <sub>R</sub> = rated V <sub>R</sub> , T <sub>J</sub> = 25 °C	0.05	0.2	mA
		@V <sub>R</sub> = rated V <sub>R</sub> , T <sub>J</sub> = 125 °C	35	50	
Junction Capacitance	C <sub>T</sub>	@V <sub>R</sub> = 5.0V, T <sub>C</sub> = 25 °C f <sub>SIG</sub> = 1MHz	230	300	pF
Typical Series Inductance	L <sub>S</sub>	Measured lead to lead 5 mm from package body	5.0	-	nH
Voltage Rate of Change	dv/dt	-	-	10,000	V/μs

\* Pulse width < 300 μs, duty cycle < 2%

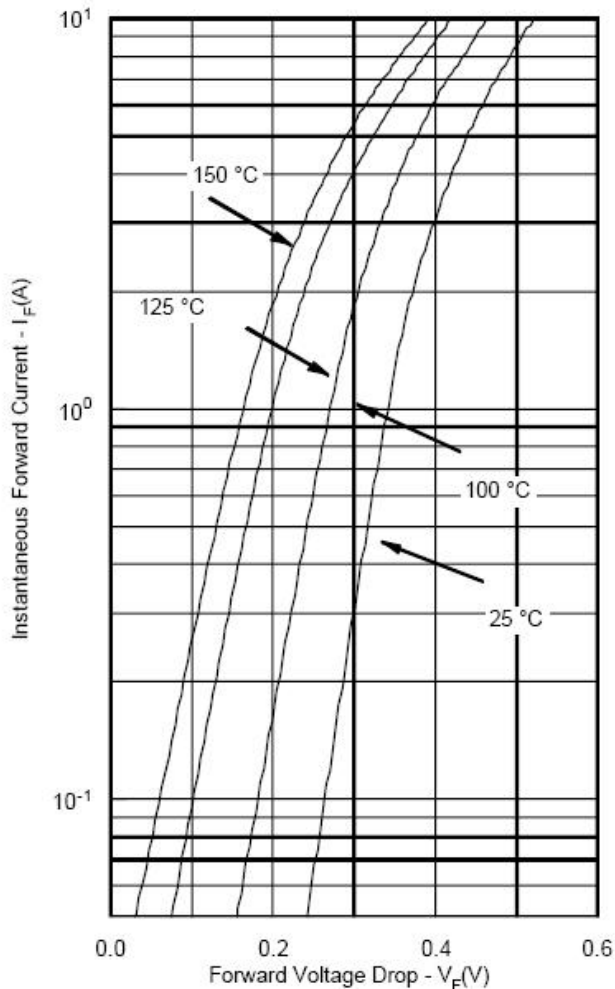
- China - Germany - Korea - Singapore - United States •
- <http://www.smc-diodes.com> - [sales@smc-diodes.com](mailto:sales@smc-diodes.com) •

**Thermal-Mechanical Specifications:**

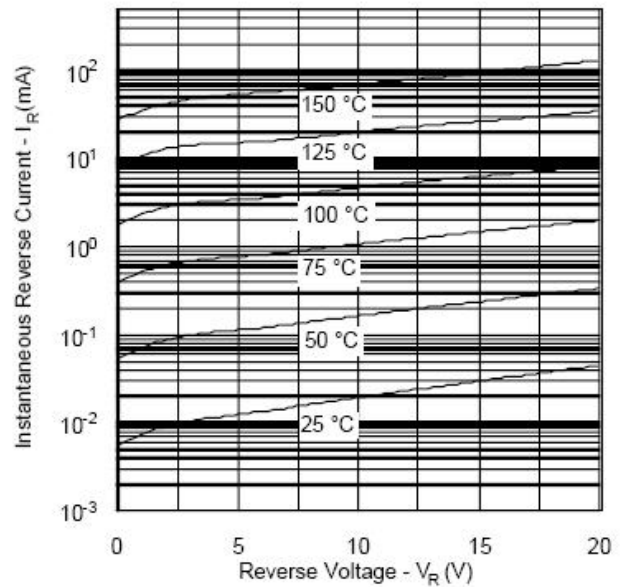
Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	$T_J$	-	-55 to +150	$^{\circ}\text{C}$
Storage Temperature	$T_{\text{stg}}$	-	-55 to +150	$^{\circ}\text{C}$
Typical Thermal Resistance Junction to Case	$R_{\theta\text{JC}}$	-	6	$^{\circ}\text{C/W}$
Approximate Weight	wt	-	0.39	g
Case Style	DPAK			

**Ratings and Characteristics Curves**

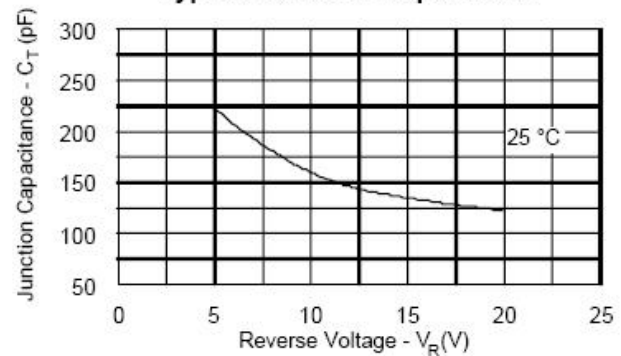
Typical Forward Characteristics

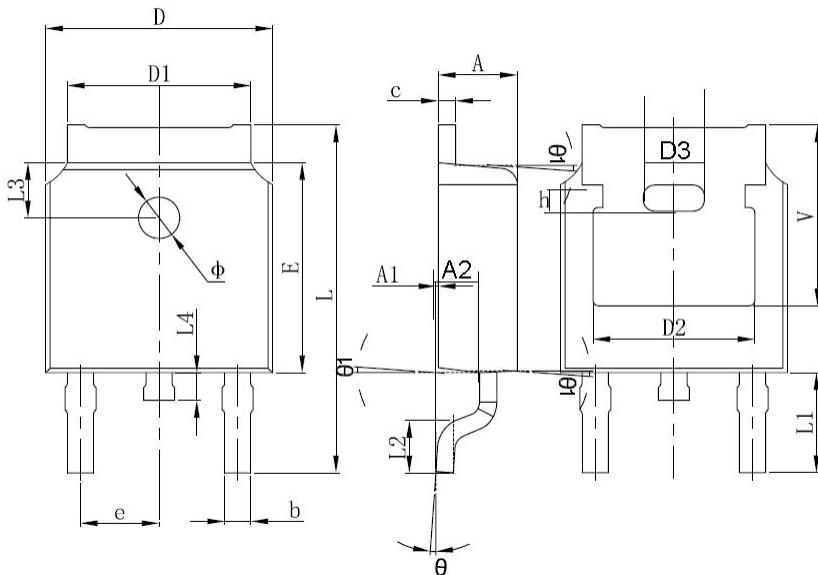


Typical Reverse Characteristics



Typical Junction Capacitance



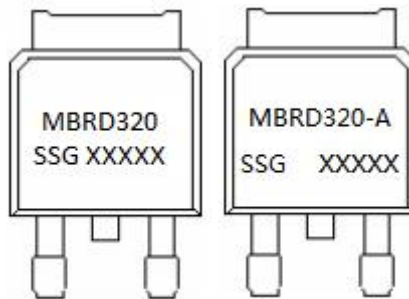
**Mechanical Dimensions DPAK**


SYMBOL	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.20	2.40	0.087	0.094
A1	0.00	0.127	0.000	0.005
b	0.66	0.86	0.026	0.034
c	0.46	0.60	0.018	0.024
D	6.50	6.70	0.256	0.264
D1	5.13	5.46	0.202	0.215
D2	4.83 REF.		0.190 REF.	
E	6.00	6.20	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.70	10.40	0.381	0.409
L1	2.90 REF.		0.144 REF.	
L2	1.40	1.70	0.055	0.067
L3	1.60 REF.		0.063 REF.	
L4	0.60	1.00	0.024	0.039
Φ	1.10	1.30	0.043	0.051
θ	0°	8°	0°	8°
V	5.35 REF.		0.211 REF.	

**Ordering Information**

Device	Package	Shipping
MBRD320	DPAK (Pb-Free)	2500pcs / reel

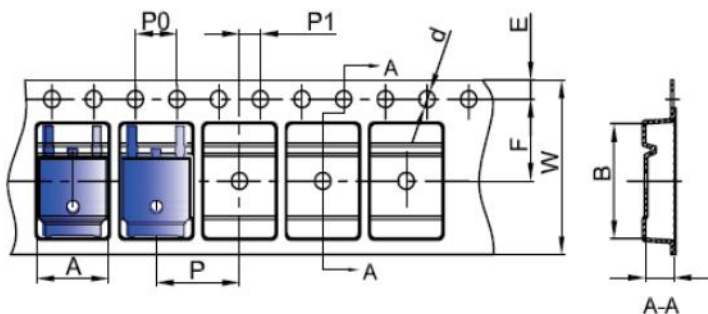
For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

**Marking Diagram**


Where XXXXX is YYWWL

MBRD320 = Part Name  
 -A = AEC-Q101  
 SSG = SSG  
 YY = Year  
 WW = Week  
 L = Lot Number

**Cautions:** Molding resin  
Epoxy resin UL:94V-0

**Carrier Tape & Reel Specification DPAK**


SYMBOL	Millimeters	
	Min.	Max.
A	6.80	7.00
B	10.40	10.60
C	2.60	2.80
d	Φ1.45	Φ1.65
E	1.65	1.85
F	7.40	7.60
P0	3.90	4.10
P	7.90	8.10
P1	1.90	2.10
W	15.90	16.30

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