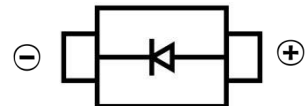


SCHOTTKY BARRIER DIODE
FEATURES

- Small Surface Mount device
- Low forward voltage drop
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability


SMB

APPLICATIONS

- Disk drives
- Switching power supplies, converters, free-wheeling diodes
- Battery charging and reverse battery protection

MECHANICAL DATA

- Case: SMB(DO-214AA)
- Case Material: Molded Plastic. UL flammability
- Classification Rating: 94V-0
- Weight: 0.088 grams (approximate)
- Marking:10BQ015

MAXIMUM RATINGS AND CHARACTERISTICS(T_A = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Repetitive peak reverse voltage	V _{RRM}	15	V
DC Reverse Voltage	V _R	15	V
Non-Repetitive Peak Forward Surge Current	t =5μs sine	140	A
	t =10ms sine	40	
Mean rectifying current	I _F	1	A
Repetitive Avalanche Current	I _{AR}	0.2	A
Non- Repetitive Avalanche Energy (I _{AS} = 0.2A, L = 4.2mH)	E _{AS}	5.0	mJ
Thermal Resistance From Junction To Ambient	R _{θJA}	140	°C/W
Thermal Resistance From Junction To Lead	R _{θJL}	36	°C/W
Junction and Storage Temperature	T _J ,T _{STG}	-55 ~+150	°C

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Forward voltage (Note1)	V _F			0.34	V	I _F =1A, T _J =25°C
				0.40		I _F =2A, T _J =25°C
				0.30		I _F =1A, T _J =75°C
				0.38		I _F =2A, T _J =75°C
Reverse current (Note1)	I _R			0.5	mA	V _R =15V, T _J =25°C
				12		V _R =15V, T _J =100°C
Junction capacitance	C _J		390		pF	V _R =5V _{DC} , f=100kHz~1MHz
Typical Series Inductance	L _S		2.0		nH	
Volatge Rate of Charge	dv/dt			6000	V/μs	

Notes: 1. Pulse with <300 μs, Duty Cycle<2%

SCHOTTKY BARRIER DIODE

Typical Characteristics

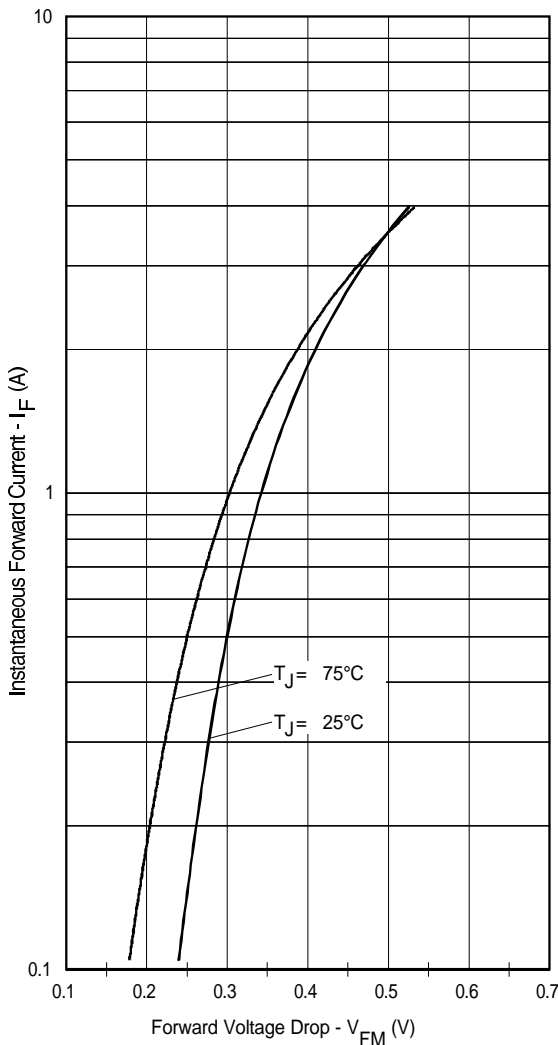


Fig. 1 Max. Forward Voltage Drop Characteristics

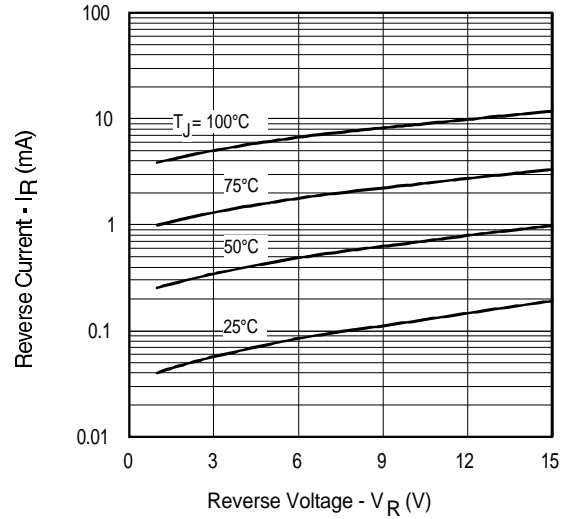


Fig. 2 Typical Values of Reverse Current Vs. Reverse Voltage

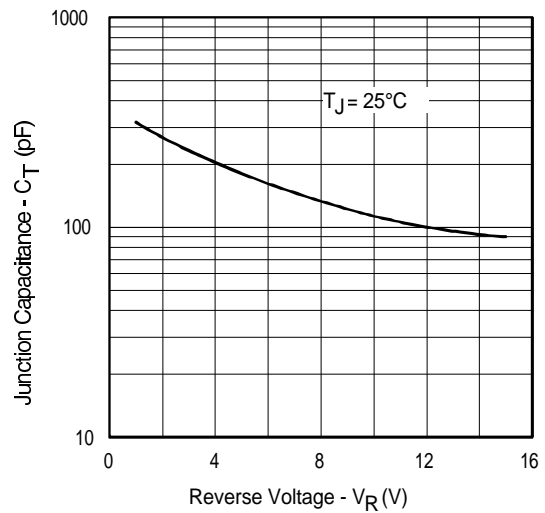


Fig. 3 Typical Junction Capacitance Vs. Reverse Voltage

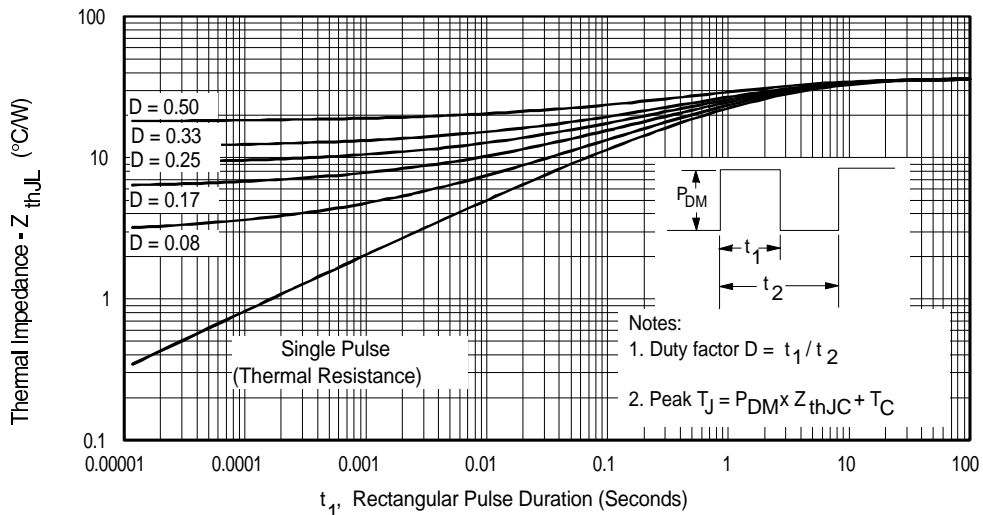


Fig. 4 Max. Thermal Impedance Z_{thJL} Characteristics

SCHOTTKY BARRIER DIODE

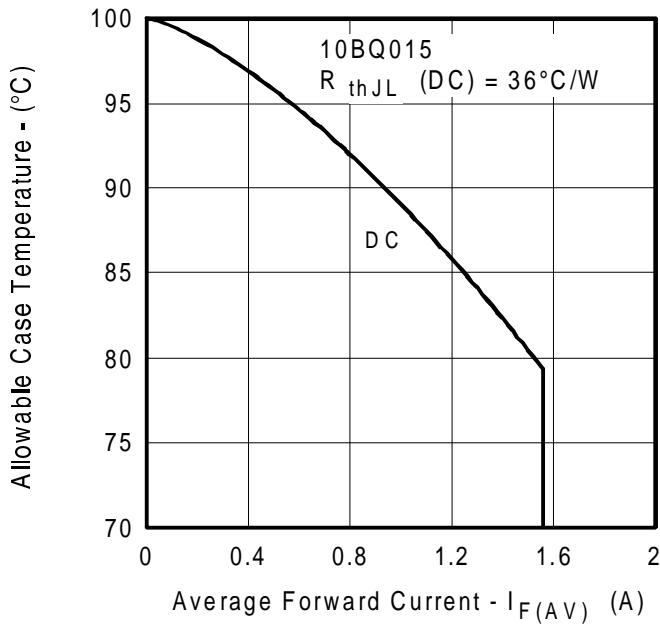


Fig. 5 Max. Allowable Case Temperature Vs. Average Forward Current

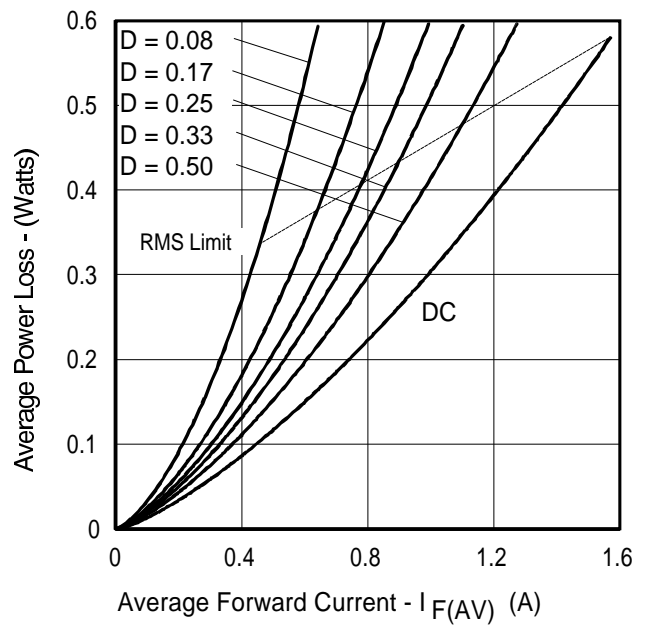


Fig. 6 Forward Power Loss Characteristics

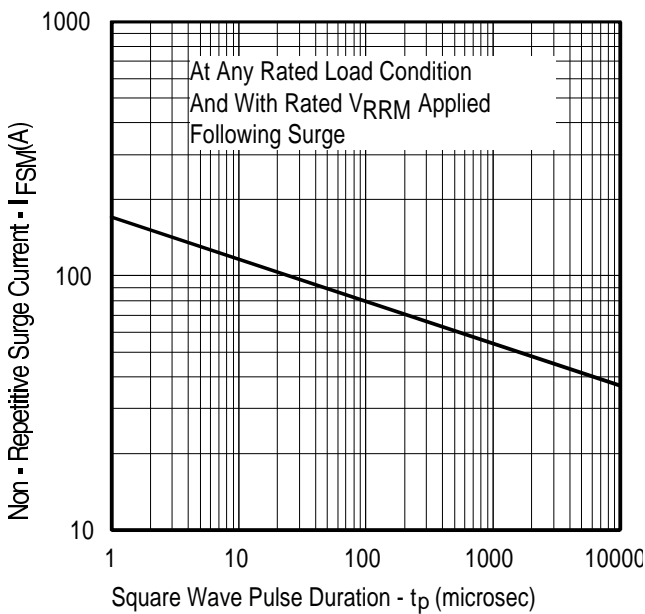


Fig.7 Max. Non-Repetitive Surge Current

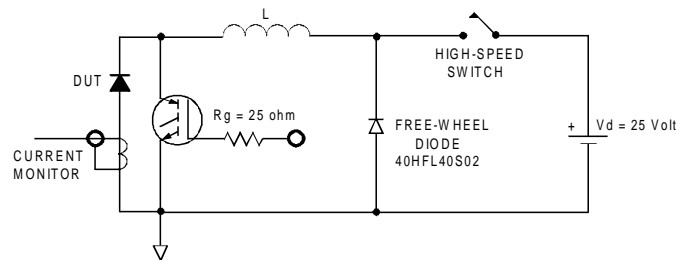
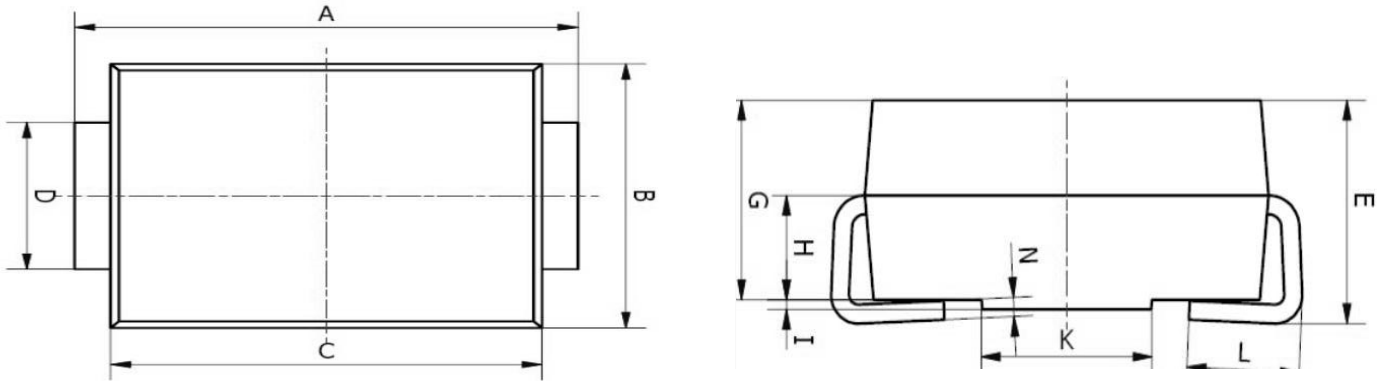
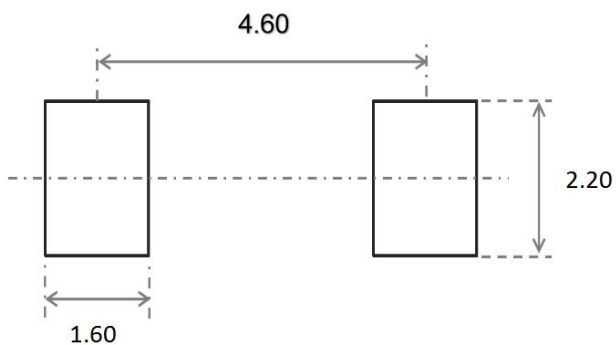


Fig. 8 Unclamped Inductive Test Circuit

SCHOTTKY BARRIER DIODE
SMB Package Outline Dimensions


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	5.00	5.45	0.197	0.215
B	3.20	4.00	0.126	0.157
C	4.30	4.70	0.169	0.185
D	1.80	2.20	0.071	0.087
E	2.20	2.50	0.087	0.098
G	1.90	2.30	0.075	0.090
H	0.95	1.25	0.037	0.049
I	0.05	0.15	0.002	0.006
K	1.70	2.10	0.067	0.083
L	0.90	1.60	0.035	0.063
N	0.10	0.30	0.004	0.012

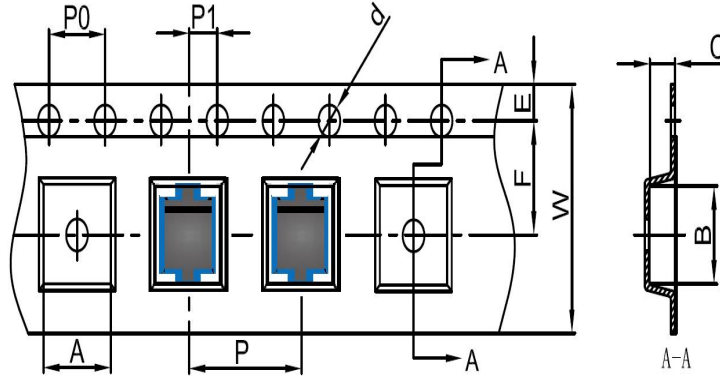
SMB Suggested Pad Layout

Note:

1. Controlling dimension: in millimeters
2. General tolerance: $\pm 0.05\text{mm}$
3. The pad layout is for reference purposes only

SCHOTTKY BARRIER DIODE

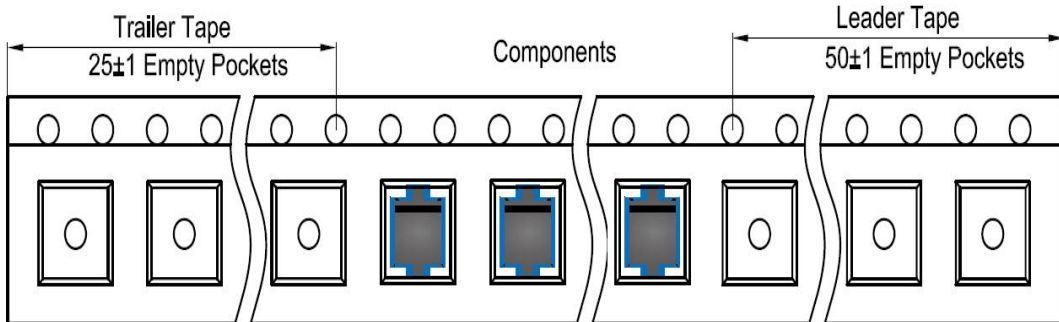
SMB Tape and Reel

SMB Embossed Carrier Tape

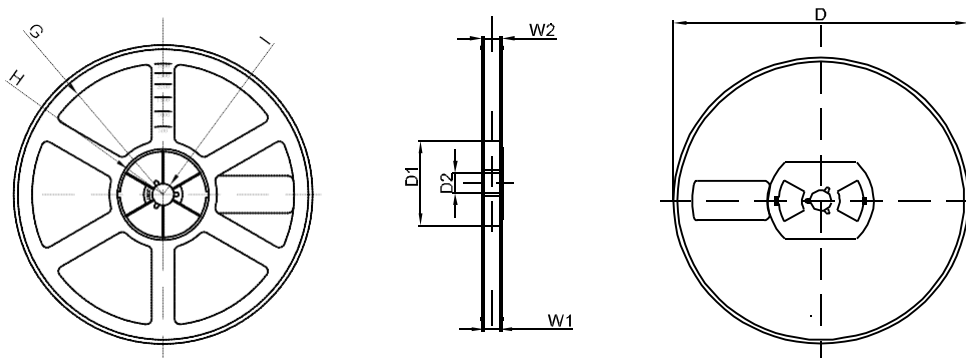


DIMENSIONS ARE IN MILLIMETER										
TYPE	A	B	C	d	E	F	P0	P	P1	W
SMB	4.10	5.50	2.58	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

SMB Tape Leader and Trailer



SMB Reel



DIMENSIONS ARE IN MILLIMETER								
REEL OPTION	D	D1	D2	G	H	I	W1	W2
13" DIA	Ø330	75.0	13.00	R165	R37.50	R6.50	12.40	17.60
TOLERANCE	±2	±1	±1	±1	±1	±1	±1	±1