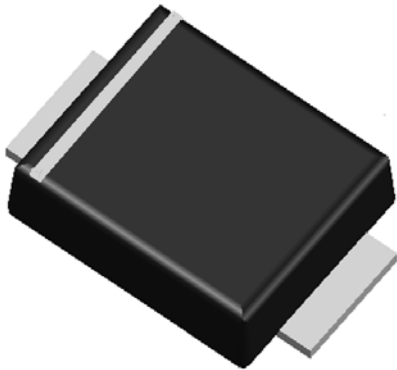


## Surface Mount Super Fast Recovery Rectifier

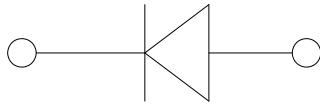


### Features

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- High forward surge capability
- Super Fast reverse recovery time
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C

### Typical Applications

For use in high frequency rectification of power supplies, inverters, converters, and freewheeling diodes for consumer, and telecommunication.



### Mechanical Data

- **Package:** SMBF  
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** Cathode line denotes the cathode end

### ■ Maximum Ratings (T<sub>a</sub>=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	MURS320BF	MURS340BF	MURS360BF
Device marking code			MURS320BF	MURS340BF	MURS360BF
Maximum Repetitive Peak Reverse Voltage	V <sub>RRM</sub>	V	200	400	600
Maximum RMS Voltage	V <sub>RMS</sub>	V	140	280	420
Maximum DC blocking Voltage	V <sub>DC</sub>	V	200	400	600
Average rectified output current @60Hz sine wave, resistance load, TL (Fig.1)	I <sub>O</sub>	A	3.0		
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave, 1 cycle, T <sub>J</sub> =25°C	I <sub>FSM</sub>	A	100		
Forward Surge Current (Non-repetitive) @1ms, square wave, 1 cycle, T <sub>J</sub> =25°C			200		
Current squared time @1ms≤t≤8.3ms T <sub>J</sub> =25°C, Rating of per diode	I <sup>2</sup> t	A <sup>2</sup> s	41.5		
Typical junction capacitance @Measured at 1MHz and Applied Reverse Voltage of 4.0 V.D.C	C <sub>J</sub>	pF	63	55	50
Storage temperature	T <sub>stg</sub>	°C	-55 ~ +150		
Junction temperature	T <sub>J</sub>	°C	-55 ~ +150		



# MURS320BF THRU MURS360BF

## ■ Electrical Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	MURS320BF	MURS340BF	MURS360BF
Maximum instantaneous forward voltage drop per diode	V <sub>F</sub>	V	I <sub>FM</sub> =3.0A	0.92	1.25	
Maximum reverse recovery time	t <sub>rr</sub>	ns	I <sub>F</sub> =0.5A, I <sub>R</sub> =1.0A, I <sub>r</sub> =0.25A	35	50	
Maximum DC reverse current at rated DC blocking voltage per diode	I <sub>R</sub>	μA	T <sub>j</sub> =25°C	5		
			T <sub>j</sub> =125°C	50		

## ■ Dynamic Characteristics

### ◆ MURS320BF

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS		Min	Typ	Max
Reverse Recovery Time	T <sub>RR</sub>	ns	T <sub>j</sub> =25°C	I <sub>F</sub> =1A, di/dt=-50A/us V <sub>RM</sub> =30V	-	30	-
			T <sub>j</sub> =25°C	I <sub>F</sub> =3A di/dt=-200A/us V <sub>RM</sub> =100V	-	29	-
			T <sub>j</sub> =125°C		-	35	-
Peak recovery current	I <sub>RRM</sub>	A	T <sub>j</sub> =25°C	I <sub>F</sub> =3A di/dt=-200A/us V <sub>RM</sub> =100V	-	3.8	-
			T <sub>j</sub> =125°C		-	6.5	-
Reverse recovery charge	Q <sub>rr</sub>	nC	T <sub>j</sub> =25°C	I <sub>F</sub> =3A di/dt=-200A/us V <sub>RM</sub> =100V	-	39.9	-
			T <sub>j</sub> =125°C		-	113.2	-
Non-repetitive avalanche energy	E <sub>AS</sub>	mJ	T <sub>j</sub> =25°C	I <sub>R</sub> =3.6 A, L=15 mH	116.6	-	-

### ◆ MURS340BF

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS		Min	Typ	Max
Reverse Recovery Time	T <sub>RR</sub>	ns	T <sub>j</sub> =25°C	I <sub>F</sub> =1A, di/dt=-50A/us V <sub>RM</sub> =30V	-	40	-
			T <sub>j</sub> =25°C	I <sub>F</sub> =3A di/dt=-200A/us V <sub>RM</sub> =200V	-	32	-
			T <sub>j</sub> =125°C		-	52	-
Peak recovery current	I <sub>RRM</sub>	A	T <sub>j</sub> =25°C	I <sub>F</sub> =3A di/dt=-200A/us V <sub>RM</sub> =200V	-	4.8	-
			T <sub>j</sub> =125°C		-	7.5	-
Reverse recovery charge	Q <sub>rr</sub>	nC	T <sub>j</sub> =25°C	I <sub>F</sub> =3A di/dt=-200A/us V <sub>RM</sub> =200V	-	76.5	-
			T <sub>j</sub> =125°C		-	196.6	-
Non-repetitive avalanche energy	E <sub>AS</sub>	mJ	T <sub>j</sub> =25°C	I <sub>R</sub> =0.8 A, L=15 mH	4.8	-	-

### ◆ MURS360BF

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS		Min	Typ	Max
Reverse Recovery Time	T <sub>RR</sub>	ns	T <sub>j</sub> =25°C	I <sub>F</sub> =1A, di/dt=-50A/us V <sub>RM</sub> =30V	-	48	-
			T <sub>j</sub> =25°C	I <sub>F</sub> =3A di/dt=-200A/us V <sub>RM</sub> =400V	-	47	-
			T <sub>j</sub> =125°C		-	71	-
Peak recovery current	I <sub>RRM</sub>	A	T <sub>j</sub> =25°C	I <sub>F</sub> =3A di/dt=-200A/us V <sub>RM</sub> =400V	-	5.9	-
			T <sub>j</sub> =125°C		-	9.0	-
Reverse recovery charge	Q <sub>rr</sub>	nC	T <sub>j</sub> =25°C	I <sub>F</sub> =3A di/dt=-200A/us V <sub>RM</sub> =400V	-	138.1	-
			T <sub>j</sub> =125°C		-	319.6	-
Non-repetitive avalanche energy	E <sub>AS</sub>	mJ	T <sub>j</sub> =25°C	I <sub>R</sub> =0.8 A, L=15 mH	4.8	-	-



# MURS320BF THRU MURS360BF

## ■ Thermal Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	MURS320BF	MURS340BF	MURS360BF
Typical Thermal resistance	R <sub>θJ-A</sub> <sup>(1)</sup>	°C/W	60		
	R <sub>θJ-L</sub> <sup>(1)</sup>		20		
	R <sub>θJ-C</sub> <sup>(1)</sup>		15		

Note:  
 (1) Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.3" x 0.3" (8.0 mm x 8.0 mm) copper pad areas

## ■ Characteristics (Typical)

FIG.1: I<sub>o</sub>-T<sub>L</sub> Curve

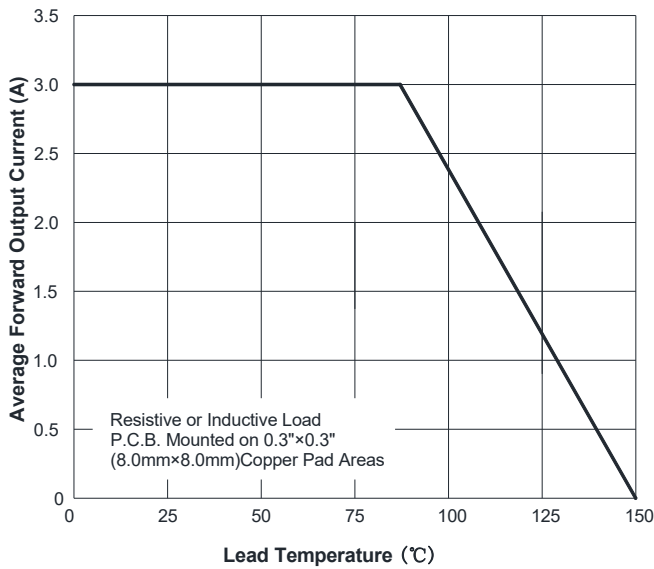


FIG.2: Forward Surge Current Capability

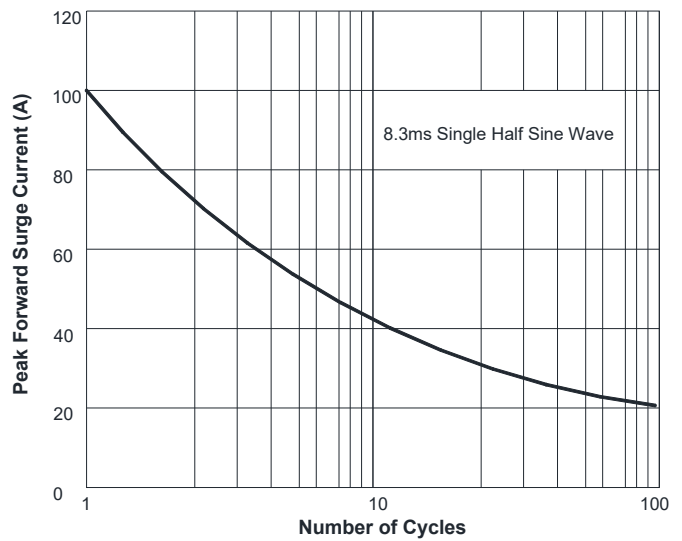


FIG.3: Typical Forward Voltage

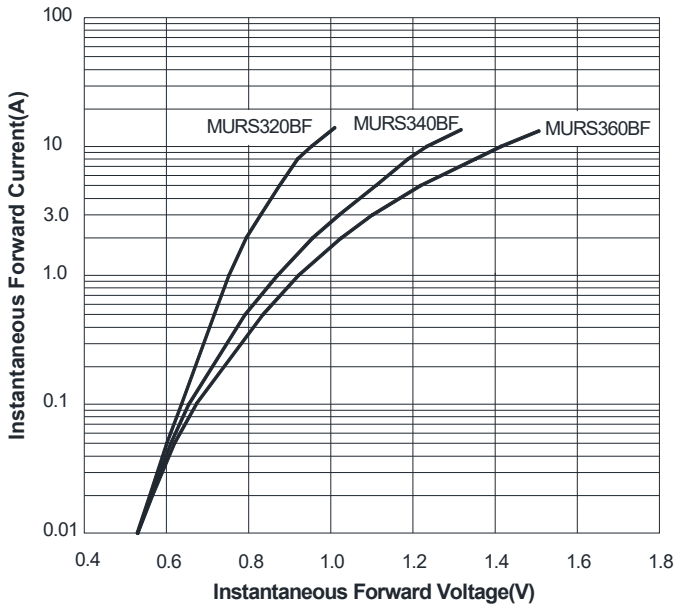
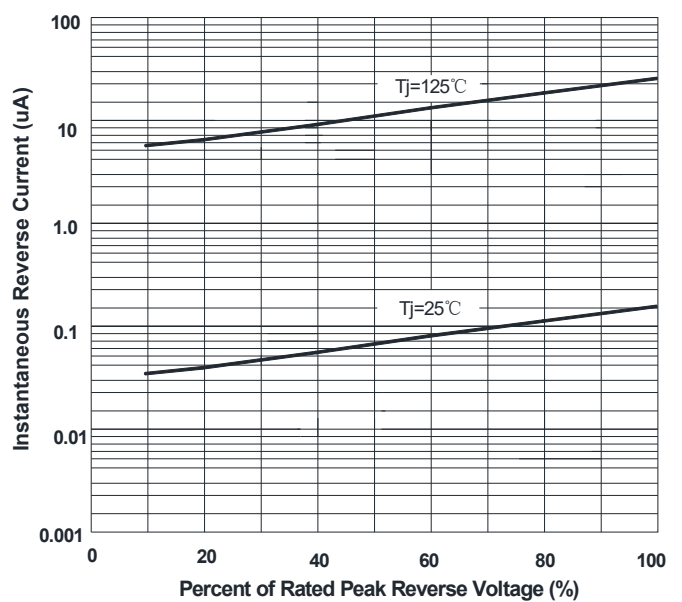


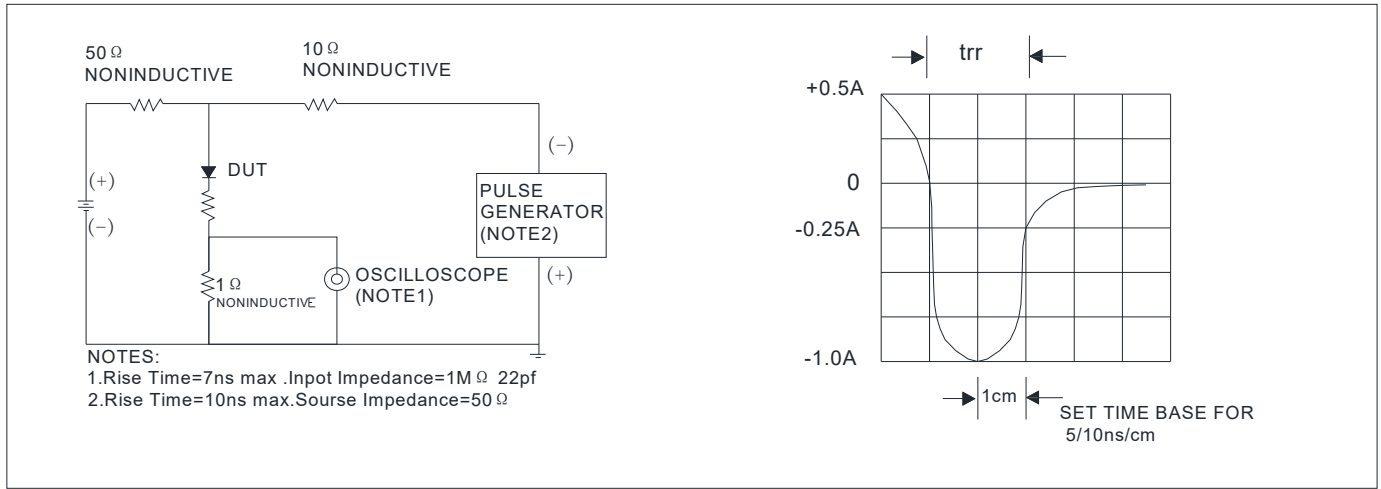
FIG.4: Typical Reverse Characteristics





# MURS320BF THRU MURS360BF

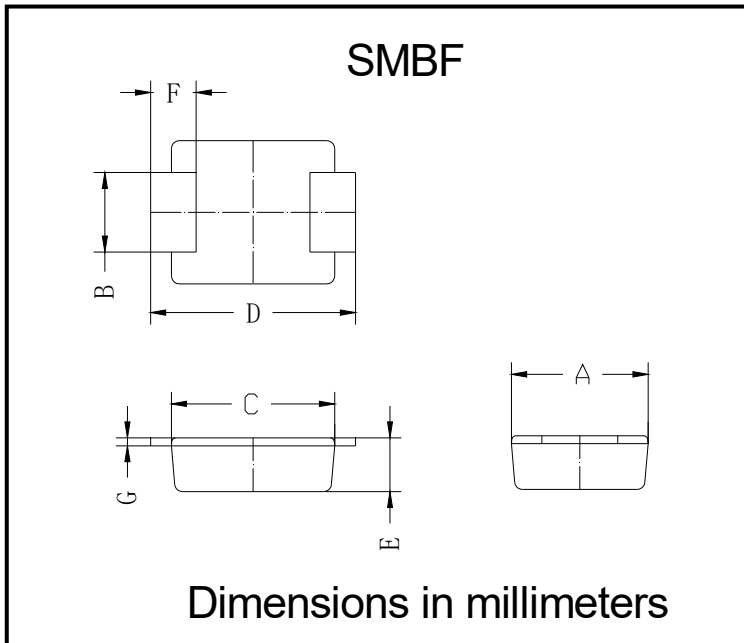
FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



## Ordering Information (Example)

PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MURS320BF – MURS360BF	F1	Approximate 0.065	5000	/	80000	13" reel

## Outline Dimensions

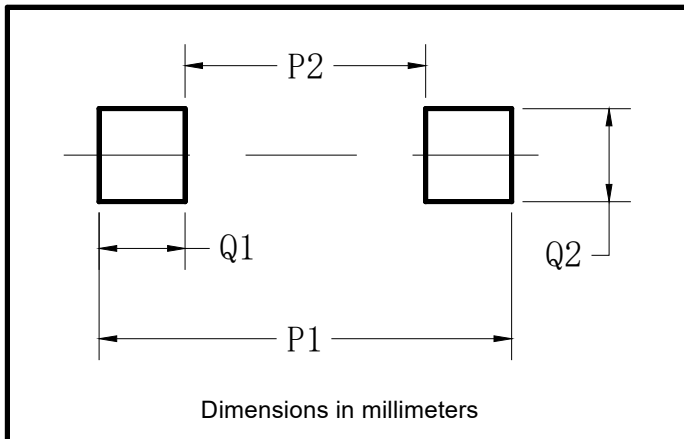


SMBF		
Dim	Min	Max
A	3.40	3.80
B	1.90	2.10
C	4.15	4.45
D	5.10	5.60
E	1.05	1.55
F	0.70	1.35
G	0.15	0.25



## MURS320BF THRU MURS360BF

### ■ Suggested pad layout



Dim	Millimeters
P1	6.20
P2	2.40
Q1	1.90
Q2	2.20



## MURS320BF THRU MURS360BF

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