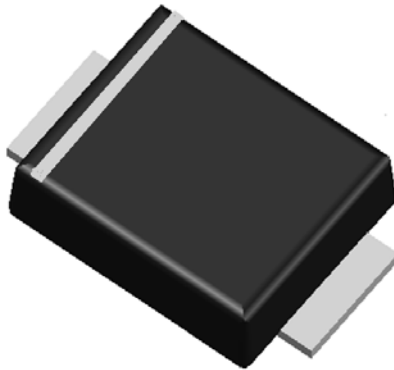


Surface Mount Super Fast Recovery Rectifier

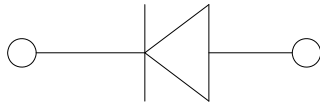


Features

- 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 (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	MURS220BF	MURS240BF	MURS260BF
Device marking code			MURS220BF	MURS240BF	MURS260BF
Maximum Repetitive Peak Reverse Voltage	VRRM	V	200	400	600
Maximum RMS Voltage	VRMS	V	140	280	420
Maximum DC blocking Voltage	VDC	V	200	400	600
Average rectified output current @60Hz sine wave, resistance load, TL (Fig.1)	IO	A	2.0		
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave, 1 cycle, Tj=25°C	IFSM	A	50		
Forward Surge Current (Non-repetitive) @1ms, square wave, 1 cycle, Tj=25°C			100		
Current squared time @1ms≤t≤8.3ms Tj=25°C	I ² t	A ² s	10.375		
Storage temperature	Tstg	°C	-55 ~ +150		
Junction temperature	Tj	°C	-55 ~ +150		



MURS220BF THRU MURS260BF

■Electrical Characteristics (T_a=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	MURS220BF	MURS240BF	MURS260BF
Maximum instantaneous forward voltage	V _F	V	I _{FM} =2.0A	0.92	1.25	
Maximum reverse recovery time	t _{rr}	ns	I _F =0.5A, I _R =1.0A, I _{rr} =0.25A	25	50	
Maximum DC reverse current at rated DC blocking voltage	I _R	μA	T _j =25°C	5.0		
			T _j =125°C	50		
Typical junction capacitance	C _j	pF	Measured at 1MHz and Applied Reverse Voltage of 4.0 V.D.C	25	25	24

■Dynamic Characteristics

◆ MURS220BF

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS		Min	Typ	Max
Reverse Recovery Time	T _{RR}	ns	T _j =25°C	I _F =1A, di/dt=-50A/us V _{RM} =30V	-	26	-
			T _j =25°C	I _F =2A di/dt=-200A/us V _{RM} =100V	-	23	-
			T _j =125°C		-	30	-
Peak recovery current	I _{RRM}	A	T _j =25°C		-	3.1	-
			T _j =125°C		-	5.0	-
Reverse recovery charge	Q _{rr}	nC	T _j =25°C		-	35.4	-
			T _j =125°C		-	73.8	-
Non-repetitive avalanche energy	E _{AS}	mJ	T _j =25°C	I _R =1.8 A, L=15 mH	24.3	-	-

◆ MURS240BF

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS		Min	Typ	Max
Reverse Recovery Time	T _{RR}	ns	T _j =25°C	I _F =1A, di/dt=-50A/us V _{RM} =30V	-	35	-
			T _j =25°C	I _F =2A di/dt=-200A/us V _{RM} =200V	-	30	-
			T _j =125°C		-	45	-
Peak recovery current	I _{RRM}	A	T _j =25°C		-	3.7	-
			T _j =125°C		-	5.8	-
Reverse recovery charge	Q _{rr}	nC	T _j =25°C		-	55.4	-
			T _j =125°C		-	130.6	-
Non-repetitive avalanche energy	E _{AS}	mJ	T _j =25°C	I _R =0.5A, L=15 mH	1.9	-	-

◆ MURS260BF

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS		Min	Typ	Max
Reverse Recovery Time	T _{RR}	ns	T _j =25°C	I _F =1A, di/dt=-50A/us V _{RM} =30V	-	50	-
			T _j =25°C	I _F =2A di/dt=-200A/us V _{RM} =400V	-	43	-
			T _j =125°C		-	66	-
Peak recovery current	I _{RRM}	A	T _j =25°C		-	5.0	-
			T _j =125°C		-	7.4	-
Reverse recovery charge	Q _{rr}	nC	T _j =25°C		-	105.9	-
			T _j =125°C		-	243.8	-
Non-repetitive avalanche energy	E _{AS}	mJ	T _j =25°C	I _R =0.5A, L=15 mH	1.9	-	-



MURS220BF THRU MURS260BF

■ Thermal Characteristics (T_a=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	MURS220BF	MURS240BF	MURS260BF
Typical Thermal resistance	R _{θJ-A} ⁽¹⁾	°C/W	60		
	R _{θJ-L} ⁽¹⁾		20		
	R _{θJ-C} ⁽¹⁾		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_o-T_L Curve

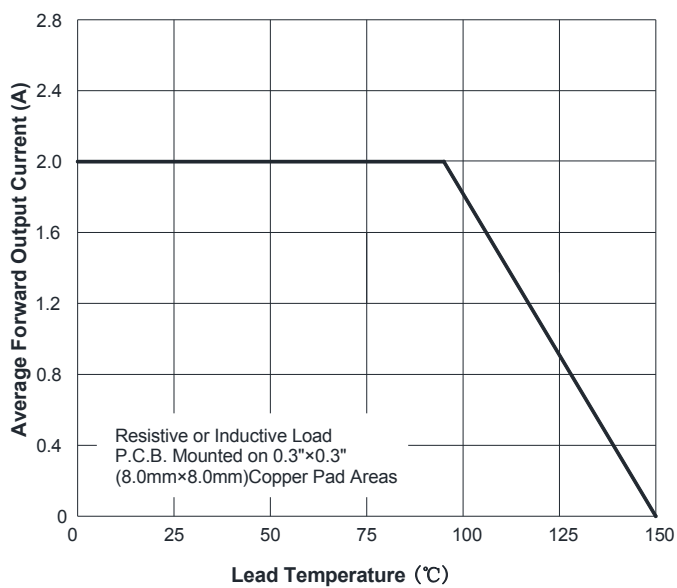


FIG.2: Forward Surge Current Capability

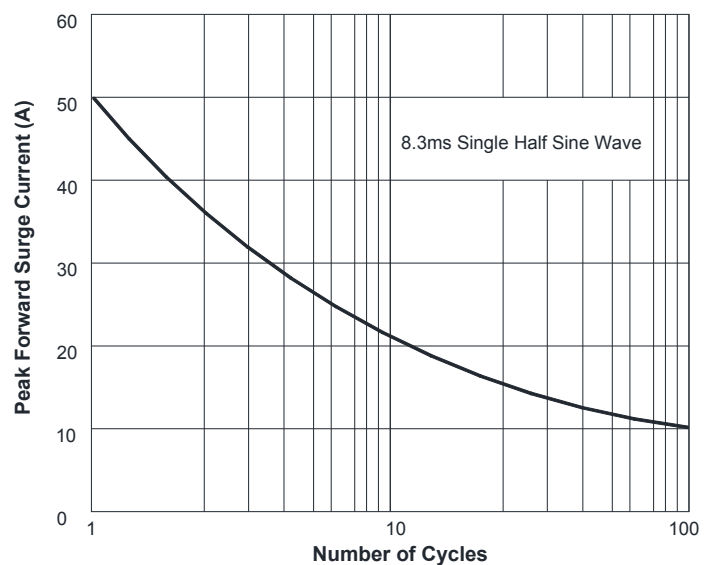


FIG.3: Typical Forward Voltage

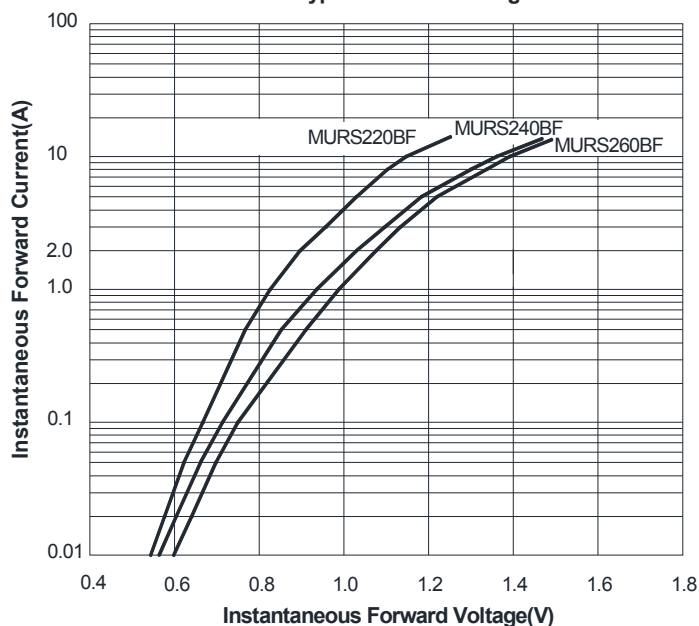
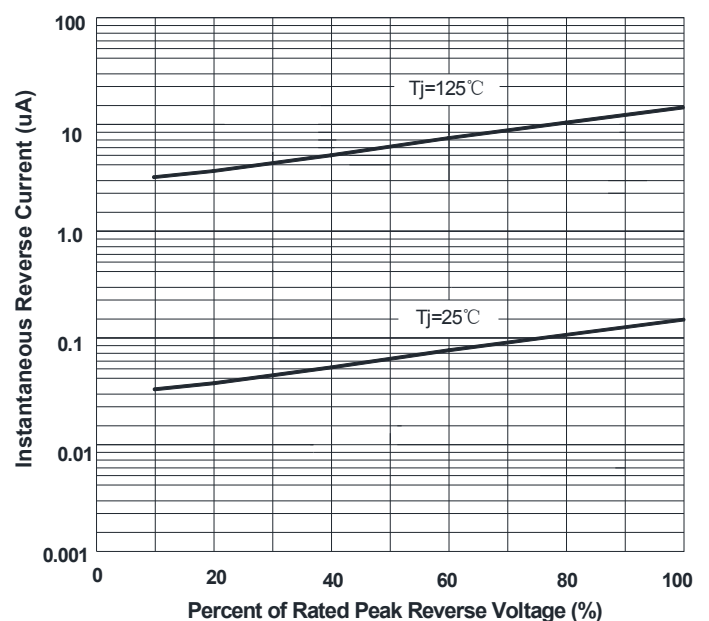


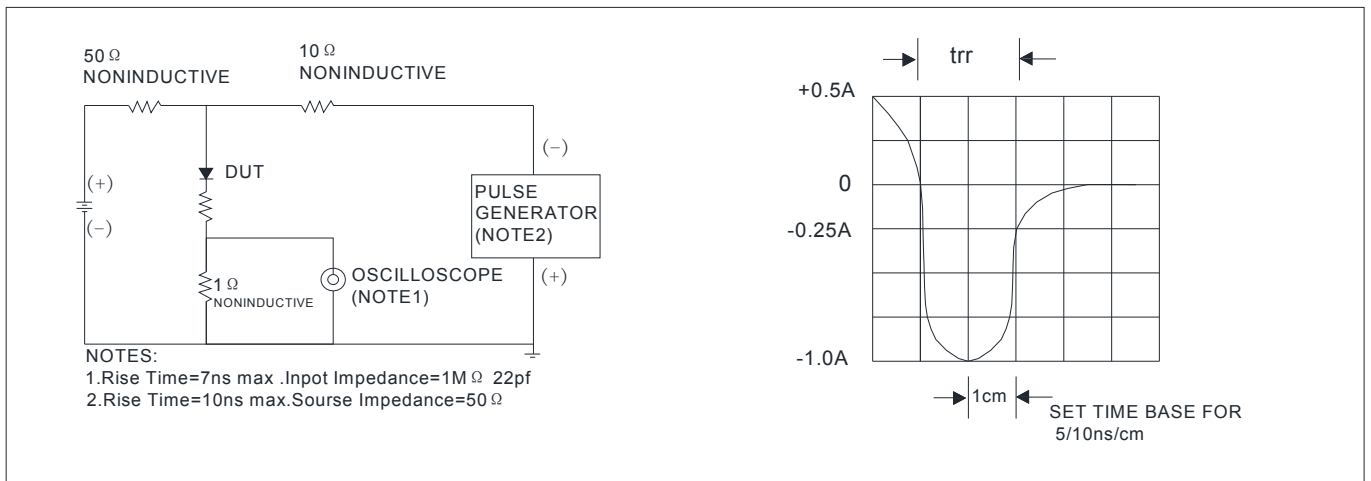
FIG.4: Typical Reverse Characteristics





MURS220BF THRU MURS260BF

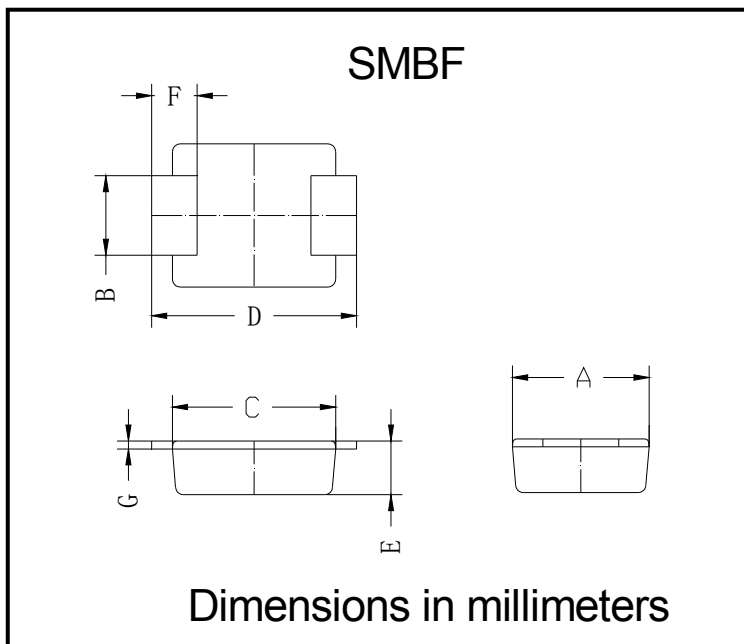
FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



■ Ordering Information (Example)

PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MURS220BF - MURS260BF	F1	Approximate 0.065	5000	/	80000	13" reel

■ Outline Dimensions

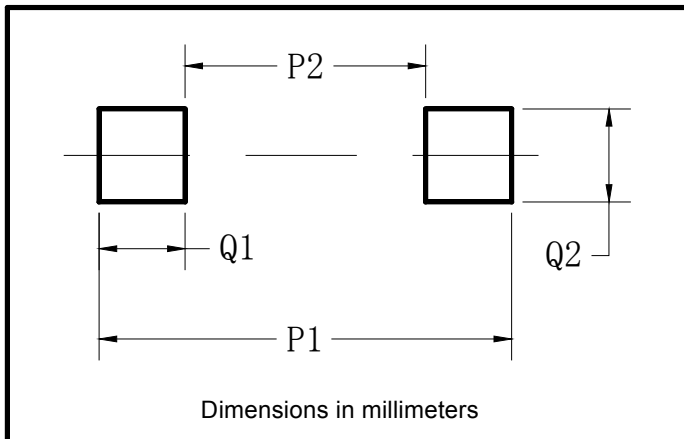


SMBF		
Dim	Min	Max
A	3.40	3.80
B	1.90	2.10
C	4.15	4.45
D	5.10	5.60
E	1.05	1.55
F	0.70	1.35
G	0.15	0.25



MURS220BF THRU MURS260BF

■ Suggested pad layout



Dim	Milimeters
P1	6.20
P2	2.40
Q1	1.90
Q2	2.20



MURS220BF THRU MURS260BF

Disclaimer

The information presented in this document is for reference only. Yangzhou Yangjie Electronic Technology Co., Ltd. reserves the right to make changes without notice for the specification of the products displayed herein to improve reliability, function or design or otherwise.

The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), Yangjie or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale.

This publication supersedes & replaces all information previously supplied. For additional information, please visit our website [http:// www.21yangjie.com](http://www.21yangjie.com) , or consult your nearest Yangjie's sales office for further assistance.