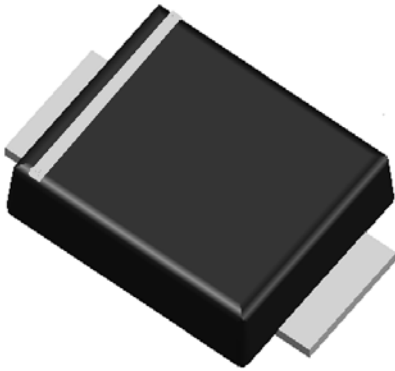


Surface Mount Super Fast Recovery Rectifier

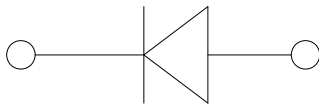


Features

- 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_a=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	MURSA460BF
Device marking code			A460BF
Maximum Repetitive Peak Reverse Voltage	V _{RRM}	V	600
Maximum RMS Voltage	V _{RMS}	V	420
Maximum DC blocking Voltage	V _{DC}	V	600
Average rectified output current @60Hz half-sine wave, resistance load, TC (Fig.1)	I _O	A	4.0
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave, 1 cycle, T _j =25°C	I _{FSM}	A	100
Forward Surge Current (Non-repetitive) @1ms, square wave, 1 cycle, T _j =25°C			200
Current squared time @1ms≤t≤8.3ms T _j =25°C	I ² t	A ² s	41.5
Storage temperature	T _{stg}	°C	-55 ~ +150
Junction temperature	T _j	°C	-55 ~ +150

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

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	MURSA460BF
Maximum instantaneous forward voltage	V _F	V	I _{FM} =4.0A	1.28
Maximum reverse recovery time	t _{rr}	ns	I _F =0.5A, I _R =1.0A, I _R =0.25A	50
Maximum DC reverse current at rated DC blocking voltage	I _R	μA	T _j =25°C	5
			T _j =125°C	50
Typical junction capacitance	C _j	pF	Measured at 1MHz and Applied Reverse Voltage of 4.0 V.D.C	28



MURSA460BF

Dynamic Characteristics

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS		Min	Typ	Max
Reverse Recovery Time	T_{RR}	ns	$T_j=25^{\circ}\text{C}$	$I_F=1\text{A}$, $di/dt=-50\text{A}/\mu\text{s}$ $V_{RM}=30\text{V}$	-	50	-
			$T_j=25^{\circ}\text{C}$	$I_F=4\text{A}$ $di/dt=-200\text{A}/\mu\text{s}$ $V_{RM}=400\text{V}$	-	44	-
			$T_j=125^{\circ}\text{C}$		-	74	-
Peak recovery current	I_{RRM}	A	$T_j=25^{\circ}\text{C}$		-	6.6	-
			$T_j=125^{\circ}\text{C}$		-	10.0	-
Reverse recovery charge	Q_{rr}	nC	$T_j=25^{\circ}\text{C}$		-	141	-
			$T_j=125^{\circ}\text{C}$		-	368	-
Non-repetitive avalanche energy	E_{AS}	mJ	$T_j=25^{\circ}\text{C}$	$I_R=2.7\text{A}$, $L=15\text{mH}$	57.1	-	-

Thermal Characteristics ($T_a=25^{\circ}\text{C}$ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	MURSA460BF
Typical Thermal resistance	$R_{\theta JA}^{(1)}$	$^{\circ}\text{C}/\text{W}$	60
	$R_{\theta JL}^{(1)}$		20
	$R_{\theta JC}^{(1)}$		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_c Curve

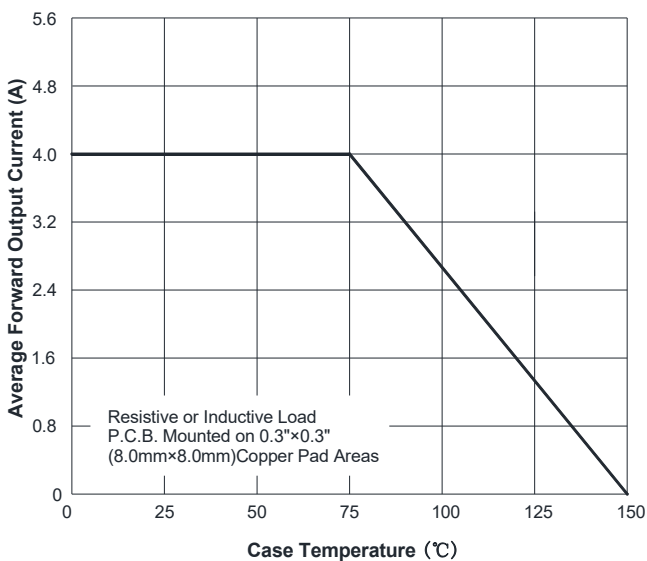
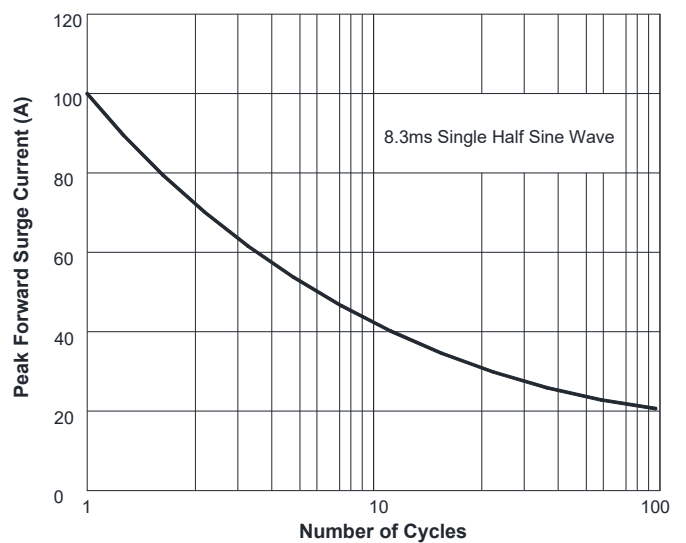


FIG.2: Forward Surge Current Capability





MURSA460BF

FIG.3: Typical Forward Voltage

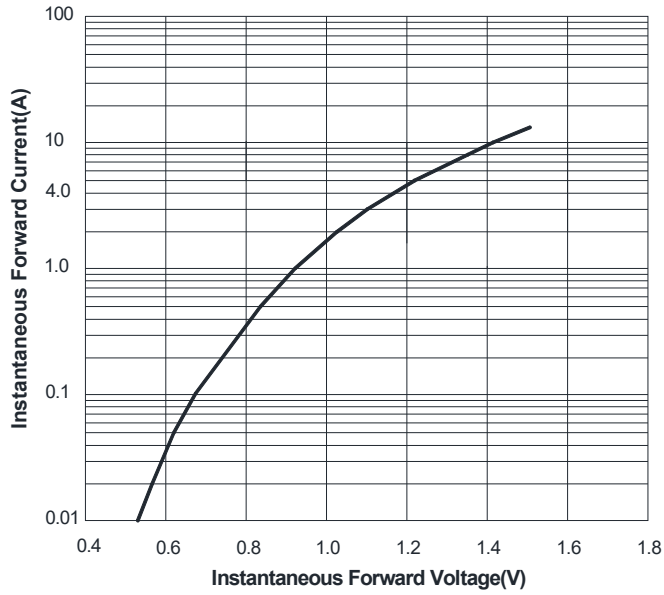


FIG.4: Typical Reverse Characteristics

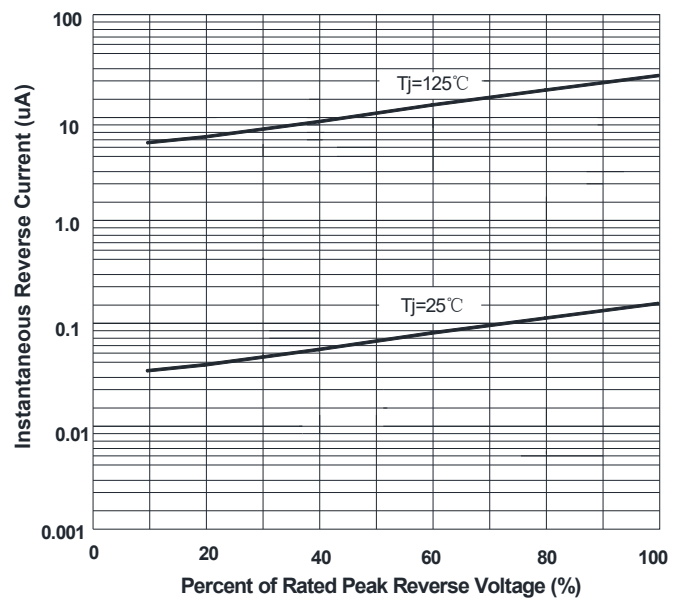
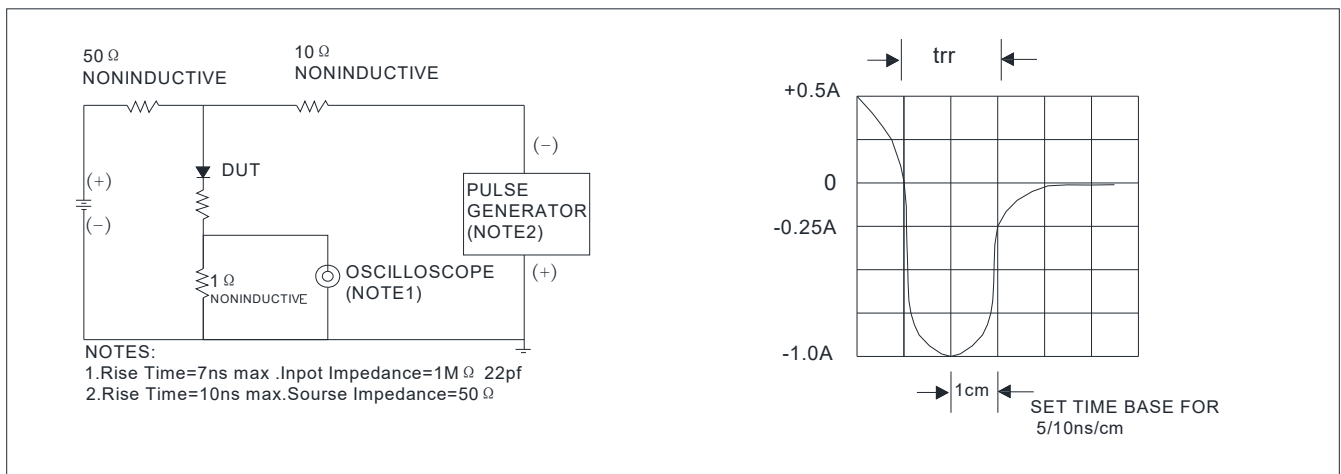


FIG.5: Diagram of circuit and Testing wave form of reverse recovery time

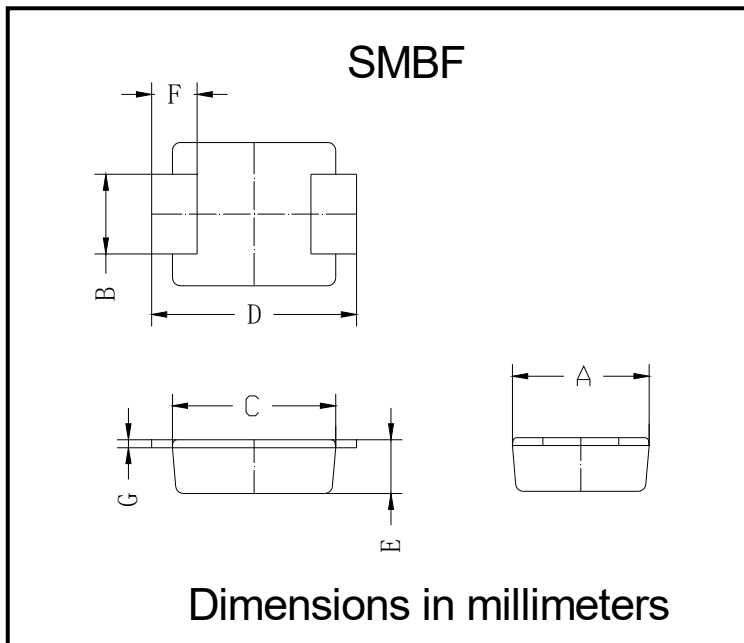


Ordering Information (Example)

PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MURSA460BF	F1	Approximate 0.065	5000	/	80000	13" reel

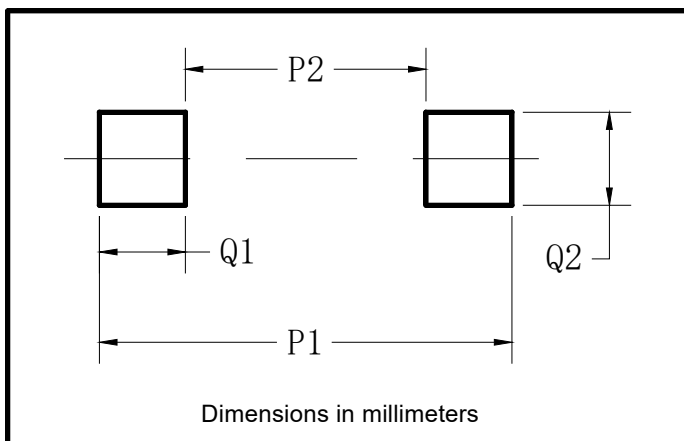


■ Outline Dimensions



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

■ Suggested pad layout



Dim	Milimeters
P1	6.20
P2	2.40
Q1	1.90
Q2	2.20



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