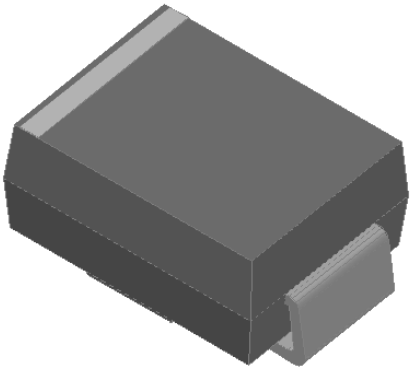
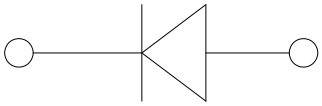
Surface Mount Super Fast Recovery Rectifier





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**: DO-214AA (SMB)
  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℃ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	MURS320B	MURS340B	MURS360B
Device marking code			MURS320B	MURS340B	MURS360B
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	V	200	400	600
Maximum RMS Voltage	V_{RMS}	V	140	280	420
Maximum DC blocking Voltage	V_{DC}	V	200	400	600
Average rectified output current @60Hz sine wave, resistance load, TL (Fig.1)	I_O	A	3.0		
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave,1 cycle, Tj=25℃	I_{FSM}	A	100		
Forward Surge Current (Non-repetitive) @1ms, square wave, 1 cycle, Tj=25℃			200		
Current squared time @1ms≤t≤8.3ms Tj=25℃	I^2t	A^2s	41.5		
Storage temperature	T_{stg}	℃	-55 ~ +150		
Junction temperature	Tj	℃	-55 ~ +150		

■Electrical Characteristics（T_a=25℃ Unless otherwise specified）

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	MURS320B	MURS340B	MURS360B
Maximum instantaneous forward voltage	V_F	V	I_{FM}=3.0A	0.92	1.25	
Maximum reverse recovery time	t_{rr}	ns	I_F=0.5A,I_R=1.0A, I_{rr}=0.25A	35	50	
Maximum DC reverse current at rated DC blocking voltage	I_R	μA	Tj =25℃	5		
			Tj =125℃	50		
Typical junction capacitance	Cj	pF	Measured at 1MHz and Applied Reverse Voltage of 4.0 V.D.C	63	55	50

■Dynamic Characteristics

◆ MURS320B

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS		Min	Typ	Max
Reverse Recovery Time	T_{RR}	ns	Tj=25℃	I_F=1A，di/dt=-50A/us V_{RM}=30V	-	30	-
			Tj=25℃	I_F=3A di/dt=-200A/us V_{RM}=100V	-	29	-
			Tj=125℃		-	35	-
Peak recovery current	I_{RRM}	A	Tj=25℃		-	3.8	-
			Tj=125℃		-	6.5	-
Reverse recovery charge	Qrr	nC	Tj=25℃		-	39.9	-
			Tj=125℃		-	113.2	-
Non-repetitive avalanche energy	E_{AS}	mJ	Tj=25℃	I_R=3.6 A，L=15 mH	116.6	-	-

◆ MURS340B

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS		Min	Typ	Max
Reverse Recovery Time	T_{RR}	ns	Tj=25℃	I_F=1A，di/dt=-50A/us V_{RM}=30V	-	40	-
			Tj=25℃	I_F=3A di/dt=-200A/us V_{RM}=200V	-	32	-
			Tj=125℃		-	52	-
Peak recovery current	I_{RRM}	A	Tj=25℃		-	4.8	-
			Tj=125℃		-	7.5	-
Reverse recovery charge	Qrr	nC	Tj=25℃		-	76.5	-
			Tj=125℃		-	196.6	-
Non-repetitive avalanche energy	E_{AS}	mJ	Tj=25℃	I_R=0.8 A，L=15 mH	4.8	-	-

◆ MURS360B

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS		Min	Typ	Max
Reverse Recovery Time	T_{RR}	ns	Tj=25℃	I_F=1A，di/dt=-50A/us V_{RM}=30V	-	48	-
			Tj=25℃	I_F=3A di/dt=-200A/us V_{RM}=400V	-	47	-
			Tj=125℃		-	71	-
Peak recovery current	I_{RRM}	A	Tj=25℃		-	5.9	-
			Tj=125℃		-	9.0	-
Reverse recovery charge	Qrr	nC	Tj=25℃		-	138.1	-
			Tj=125℃		-	319.6	-
Non-repetitive avalanche energy	E_{AS}	mJ	Tj=25℃	I_R=0.8 A，L=15 mH	4.8	-	-

■Thermal Characteristics （T_a=25℃ Unless otherwise specified）

PARAMETER	SYMBOL	UNIT	MURS320B	MURS340B	MURS360B
Typical Thermal resistance	$R_{\theta J-A}$(1)	℃/W	60		
	$R_{\theta J-L}$(1)		20		
	$R_{\theta J-C}$(1)		18		

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: Io-TL Curve

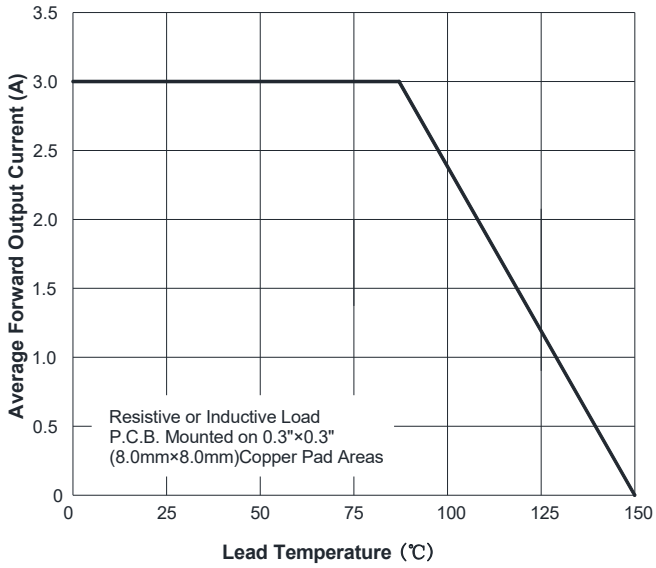


FIG.2: Forward Surge Current Capadility

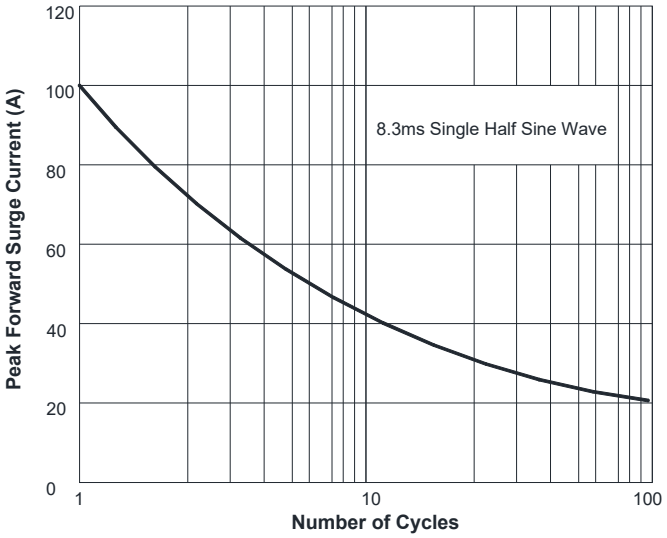


FIG.3: Typical Forward Voltage

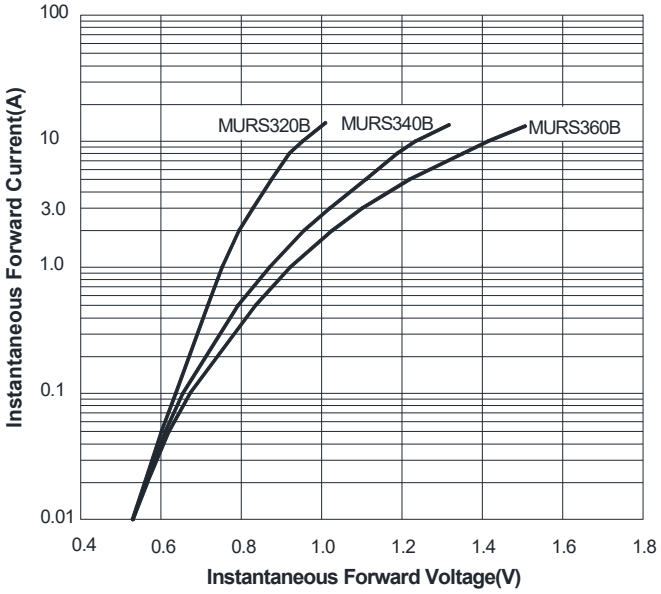


FIG.4: Typical Reverse Characteristics

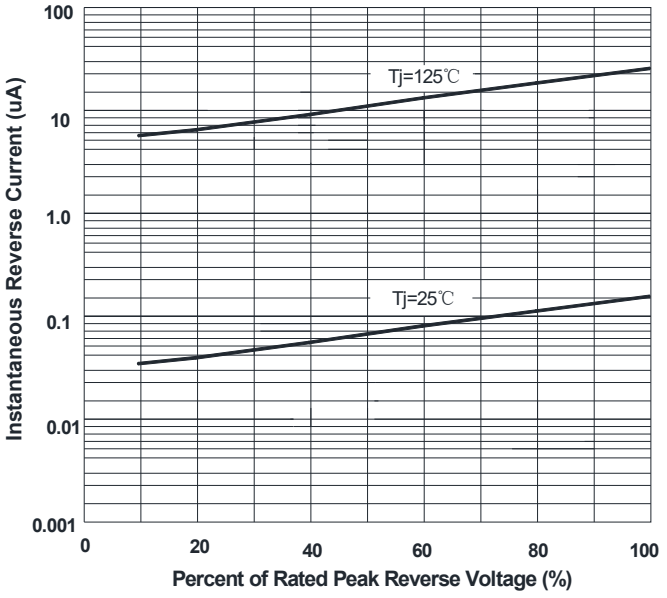
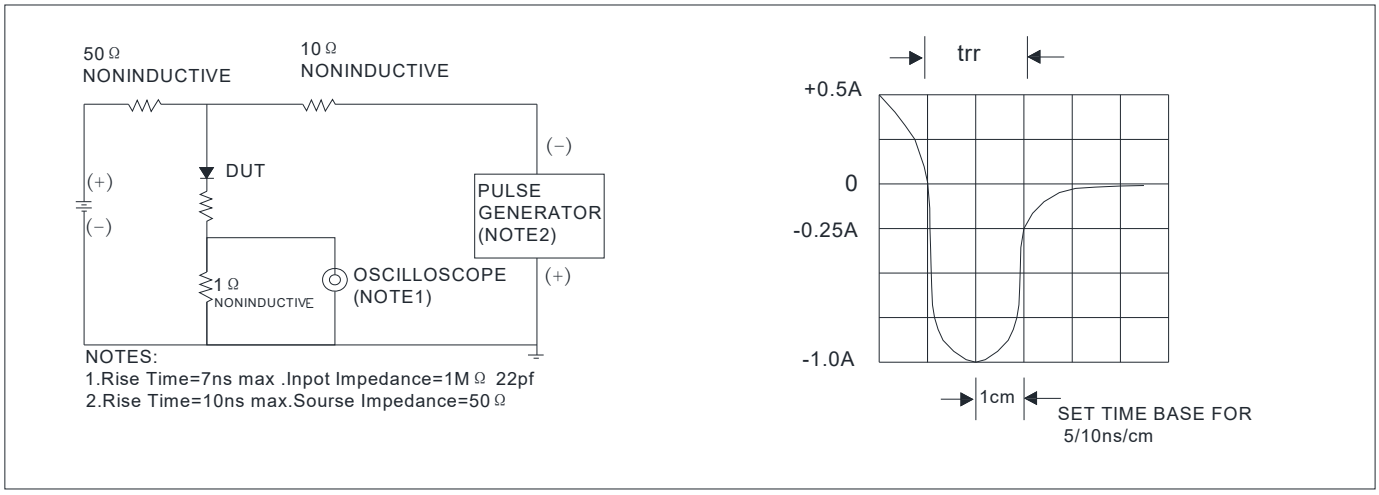


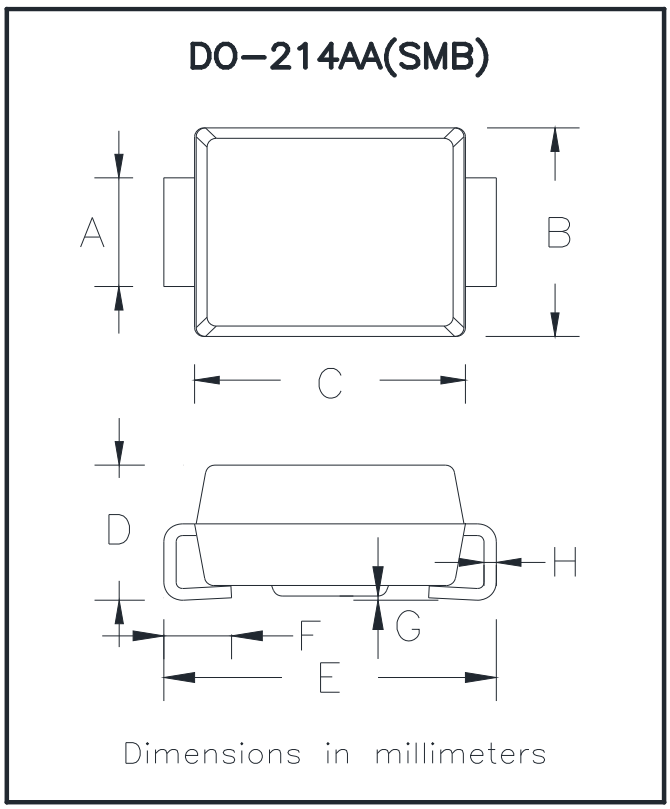
FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



■Ordering Information (Example)

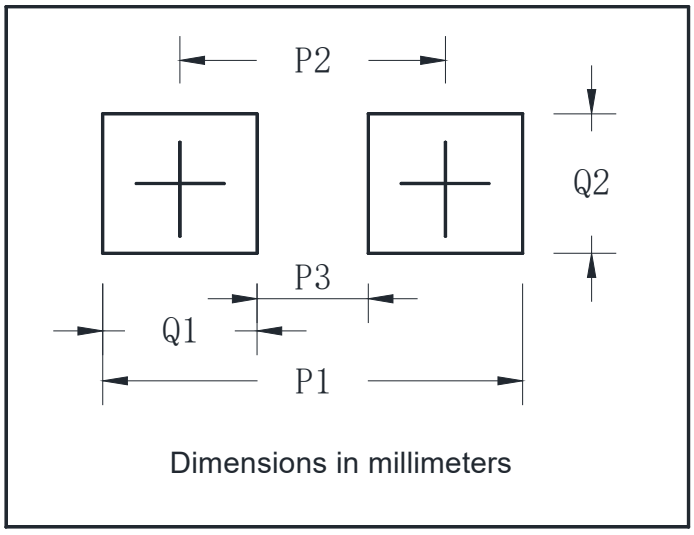
PREFERED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MURS320B-MURS360B	F1	Approximate 0.096	3000	/	48000	13” reel
MURS320B-MURS360B	F2	Approximate 0.096	750	6000	24000	7” reel
MURS320B-MURS360B	F3	Approximate 0.096	500	4000	16000	7” reel

■ Outline Dimensions



DO-214AA(SMB)		
Dim	Min	Max
A	1.85	2.15
B	3.30	3.94
C	4.05	4.75
D	1.99	2.61
E	5.21	5.59
F	0.90	1.41
G	0.05	0.20
H	0.15	0.31

■ Suggested pad layout



DO-214AA(SMB)	
Dim	Millimeters
P1	6.8
P2	4.3
P3	1.8
Q1	2.5
Q2	2.3

Notice

All products, product specifications and data are subject to change without notice to improve reliability, function or design or otherwise.
Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in STARSEA's terms and conditions of sale for such products, STARSEA assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of STARSEA products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.