

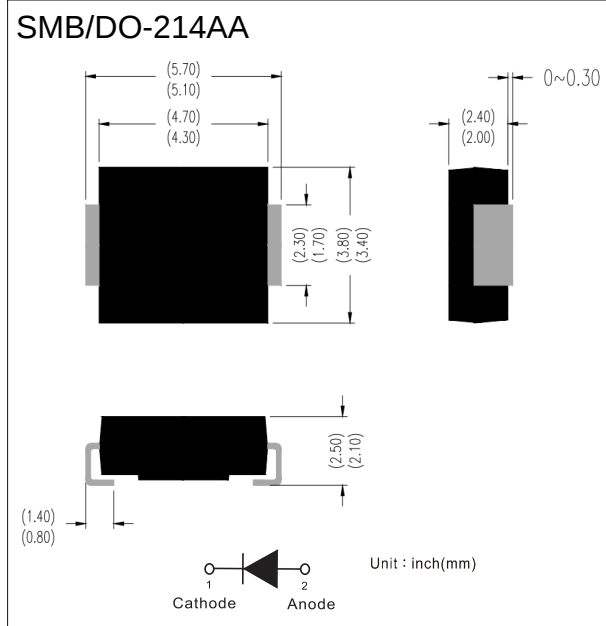
1A, 200V - 600V Surface Mount Super Fast Recovery Rectifier

Features

- Glass passivated junction chip
- Ideal for automated placement
- Super Fast reverse recovery time
- Comply with RoHS standard, halogen-free

Mechanical Data

- package:SMB/DO-214AA
- Polarity: Indicated by cathode band
- Epoxy: UL 94V-0 rate flame retardant
- Mounting Position : Any



Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Unit	MURS120B	MURS140B	MURS160B
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	1.0		
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave, 1 cycle, $T_j=25^\circ\text{C}$	IFSM	A	30		
Forward Surge Current (Non-repetitive) @1ms, square wave, 1 cycle, $T_j=25^\circ\text{C}$			60		
Current squared time @1ms≤t≤8.3ms $T_j=25^\circ\text{C}$	I ² t	A ² s	3.735		
Storage temperature	Tstg	°C	-55 ~ +150		
Junction temperature	Tj	°C	-55 ~ +150		

Thermal Performance ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Unit	MURS120B	MURS140B	MURS160B
Typical Thermal resistance	$R_{\theta J-A}^{(1)}$	$^{\circ}\text{C/W}$	65		
	$R_{\theta J-L}^{(1)}$		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

Electrical Specifications ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Unit	Test Conditions	MURS120B	MURS140B	MURS160B
Maximum instantaneous forward voltage	V _F	V	I _{FM} =1.0A	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	17	15	14

Characteristics MURS120B ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Unit	Test Conditions		Min	Typ	Max
Reverse Recovery Time	T_{RR}	ns	$T_J=25^{\circ}\text{C}$	$I_F=1\text{A}, di/dt=-50\text{A/us}$ $V_{RM}=30\text{V}$	-	26	-
			$T_J=25^{\circ}\text{C}$	$I_F=1\text{A}$ $di/dt=-200\text{A/us}$ $V_{RM}=100\text{V}$	-	18	-
			$T_J=125^{\circ}\text{C}$		-	23	-
Peak recovery current	I_{RRM}	A	$T_J=25^{\circ}\text{C}$		-	2.3	-
			$T_J=125^{\circ}\text{C}$		-	3.8	-
Reverse recovery charge	Q_{rr}	nC	$T_J=25^{\circ}\text{C}$		-	20.2	-
			$T_J=125^{\circ}\text{C}$		-	43.7	-
Non-repetitive avalanche energy	E_{AS}	mJ	$T_J=25^{\circ}\text{C}$	$I_R=1.5\text{A}, L=15\text{mH}$	16.9	-	-

MURS140B

Parameter	Symbol	Unit	Test Conditions		Min	Typ	Max
Reverse Recovery Time	T_{RR}	ns	$T_j=25^{\circ}\text{C}$	$I_F=1\text{A}$, $di/dt=-50\text{A/us}$ $V_{RM}=30\text{V}$	-	26	-
			$T_j=25^{\circ}\text{C}$	$I_F=1\text{A}$ $di/dt=-200\text{A/us}$ $V_{RM}=200\text{V}$	-	22	-
			$T_j=125^{\circ}\text{C}$		-	31	-
Peak recovery current	I_{RRM}	A	$T_j=25^{\circ}\text{C}$		-	1.9	-
			$T_j=125^{\circ}\text{C}$		-	3.5	-
Reverse recovery charge	Q_{rr}	nC	$T_j=25^{\circ}\text{C}$		-	21.1	-
			$T_j=125^{\circ}\text{C}$		-	54.9	-
Non-repetitive avalanche energy	E_{AS}	mJ	$T_j=25^{\circ}\text{C}$	$I_R=0.4\text{A}$, $L=15\text{ mH}$	1.2	-	-

MURS160B

Parameter	Symbol	Unit	Test Conditions		Min	Typ	Max
Reverse Recovery Time	T_{RR}	ns	$T_j=25^{\circ}\text{C}$	$I_F=1\text{A}$, $di/dt=-50\text{A/us}$ $V_{RM}=30\text{V}$	-	49	-
			$T_j=25^{\circ}\text{C}$	$I_F=1\text{A}$ $di/dt=-200\text{A/us}$ $V_{RM}=400\text{V}$	-	38	-
			$T_j=125^{\circ}\text{C}$		-	59	-
Peak recovery current	I_{RRM}	A	$T_j=25^{\circ}\text{C}$		-	3.5	-
			$T_j=125^{\circ}\text{C}$		-	5.5	-
Reverse recovery charge	Q_{rr}	nC	$T_j=25^{\circ}\text{C}$		-	67.4	-
			$T_j=125^{\circ}\text{C}$		-	160.5	-
Non-repetitive avalanche energy	E_{AS}	mJ	$T_j=25^{\circ}\text{C}$	$I_R=0.5\text{A}$, $L=15\text{ mH}$	1.9	-	-



Characteristics Curves ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

FIG.1: I_o - T_L Curve

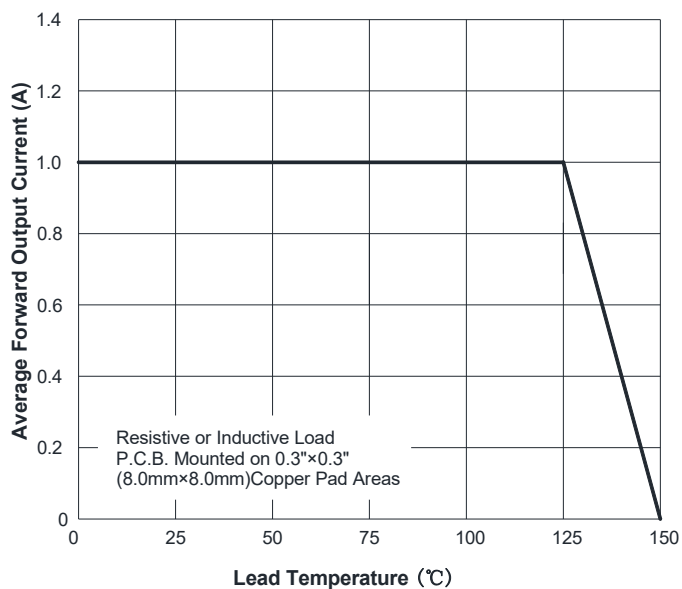


FIG.2: Forward Surge Current Capability

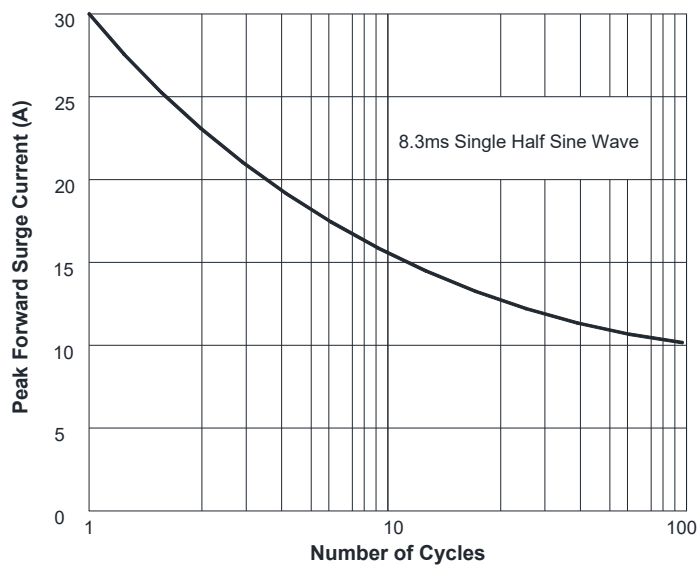


FIG.3: Typical Forward Voltage

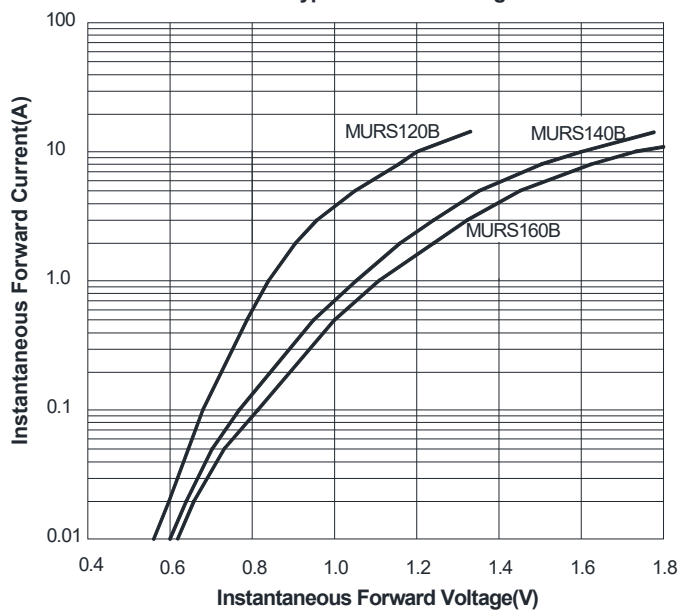


FIG.4: Typical Reverse Characteristics

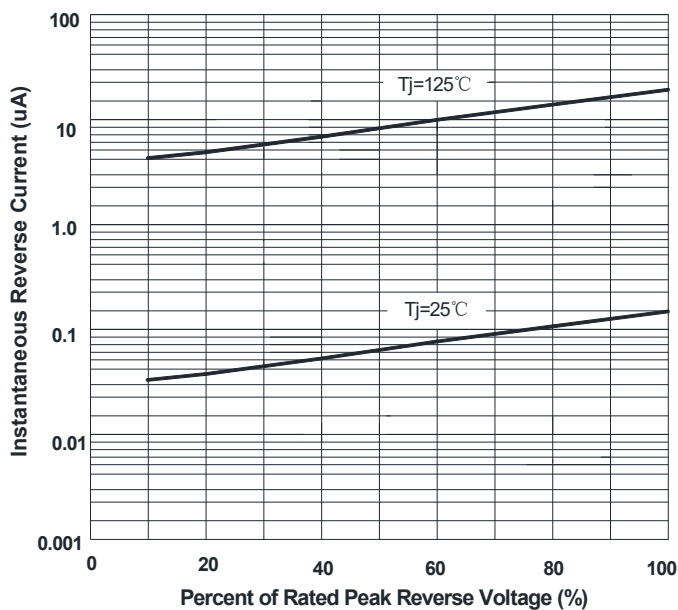




FIG.5: Diagram of circuit and Testing wave form of reverse recovery time

