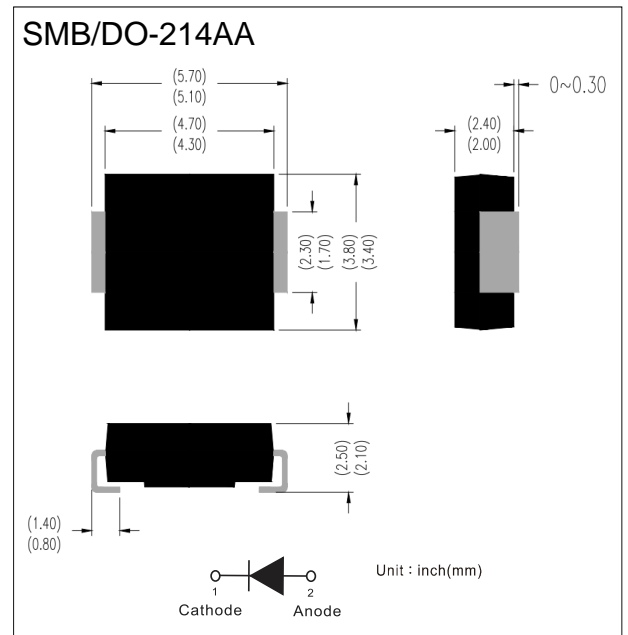


■ **Features**

- 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	MURS120	MURS140	MURS160
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)	$I_O$	A	1.0		
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave, 1 cycle, $T_j=25^\circ\text{C}$	$I_{FSM}$	A	30		
Forward Surge Current (Non-repetitive) @1ms, square wave, 1 cycle, $T_j=25^\circ\text{C}$			60		
Current squared time @ $1\text{ms} \leq t \leq 8.3\text{ms}$ $T_j=25^\circ\text{C}$	$I^2t$	$\text{A}^2\text{s}$	3.735		
Storage temperature	$T_{stg}$	$^\circ\text{C}$	-55 ~ +150		
Junction temperature	$T_j$	$^\circ\text{C}$	-55 ~ +150		

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

PARAMETER	SYMBOL	UNIT	MURS120	MURS140	MURS160
Typical Thermal resistance	$R_{\theta J-A}^{(1)}$	$^{\circ}\text{C}/\text{W}$	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	MURS120	MURS140	MURS160
Maximum instantaneous forward voltage	$V_F$	V	$I_{FM}=1.0\text{A}$	0.92	1.25	
Maximum reverse recovery time	$t_{rr}$	ns	$I_F=0.5\text{A}, I_R=1.0\text{A}, I_{rr}=0.25\text{A}$	25	50	
Maximum DC reverse current at rated DC blocking voltage	$I_R$	$\mu\text{A}$	$T_j=25^{\circ}\text{C}$	5.0		
			$T_j=125^{\circ}\text{C}$	50		
Typical junction capacitance	$C_j$	pF	Measured at 1MHz and Applied Reverse Voltage of 4.0 V.D.C	17	15	14

**■ Characteristics**
**■ MURS120**

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS		Min	Typ	Max
Reverse Recovery Time	$T_{RR}$	ns	$T_j=25^{\circ}\text{C}$	$I_F=1\text{A}, di/dt=-50\text{A}/\mu\text{s}$ $V_{RM}=30\text{V}$	-	26	-
			$T_j=25^{\circ}\text{C}$	$I_F=1\text{A}$ $di/dt=-200\text{A}/\mu\text{s}$ $V_{RM}=100\text{V}$	-	18	-
			$T_j=125^{\circ}\text{C}$		-	23	-
Peak recovery current	$I_{RRM}$	A	$T_j=25^{\circ}\text{C}$	$I_F=1\text{A}$ $di/dt=-200\text{A}/\mu\text{s}$ $V_{RM}=100\text{V}$	-	2.3	-
			$T_j=125^{\circ}\text{C}$		-	3.8	-
Reverse recovery charge	$Q_{rr}$	nC	$T_j=25^{\circ}\text{C}$	$I_F=1\text{A}$ $di/dt=-200\text{A}/\mu\text{s}$ $V_{RM}=100\text{V}$	-	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	-	-

**▪ MURS140**

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	$T_j=25^\circ\text{C}$	$I_F=1\text{A}$ $di/dt=-200\text{A/us}$ $V_{RM}=200\text{V}$	-	1.9	-
			$T_j=125^\circ\text{C}$		-	3.5	-
Reverse recovery charge	Qrr	nC	$T_j=25^\circ\text{C}$	$I_F=1\text{A}$ $di/dt=-200\text{A/us}$ $V_{RM}=200\text{V}$	-	21.1	-
			$T_j=125^\circ\text{C}$		-	54.9	-
Non-repetitive avalanche energy	EAS	mJ	$T_j=25^\circ\text{C}$	$I_R=0.4\text{A}$ , $L=15\text{mH}$	1.2	-	-

**▪ MURS160**

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	$T_j=25^\circ\text{C}$	$I_F=1\text{A}$ $di/dt=-200\text{A/us}$ $V_{RM}=400\text{V}$	-	3.5	-
			$T_j=125^\circ\text{C}$		-	5.5	-
Reverse recovery charge	Qrr	nC	$T_j=25^\circ\text{C}$	$I_F=1\text{A}$ $di/dt=-200\text{A/us}$ $V_{RM}=400\text{V}$	-	67.4	-
			$T_j=125^\circ\text{C}$		-	160.5	-
Non-repetitive avalanche energy	EAS	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:  $I_o$ -TL Curve

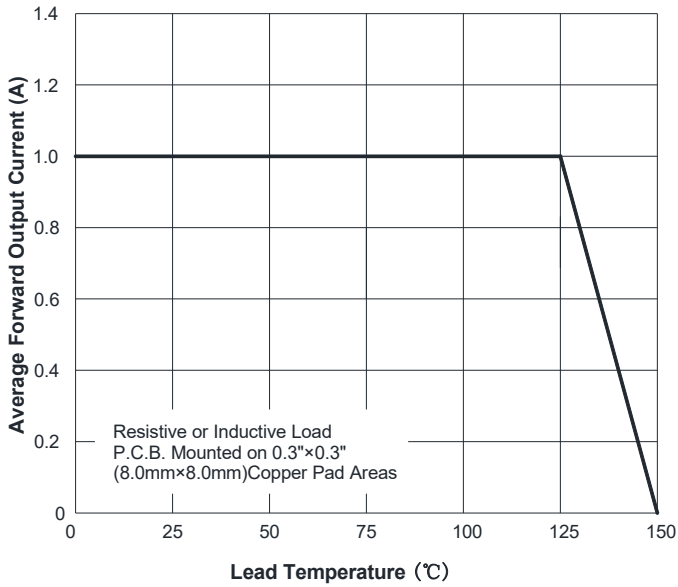


FIG.2: Forward Surge Current Capacity

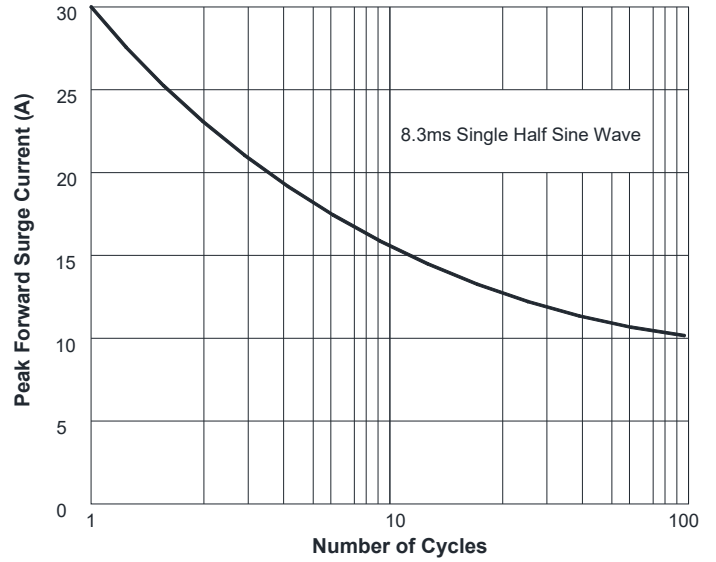


FIG.3: Typical Forward Voltage

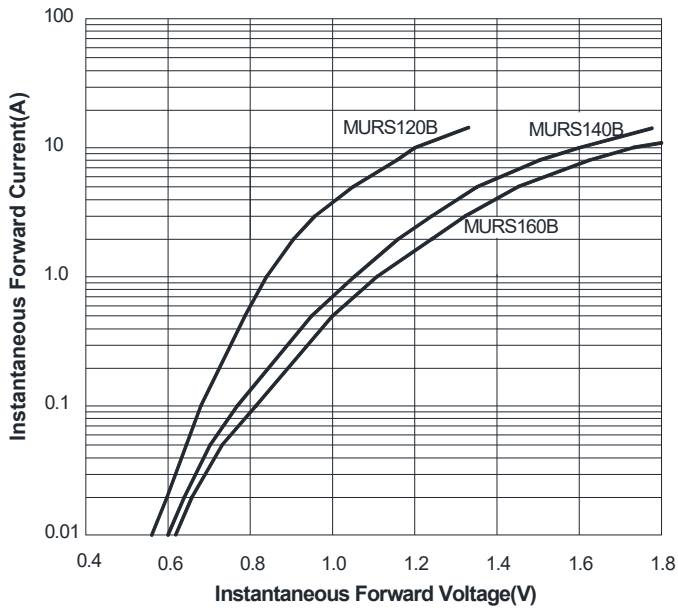


FIG.4: Typical Reverse Characteristics

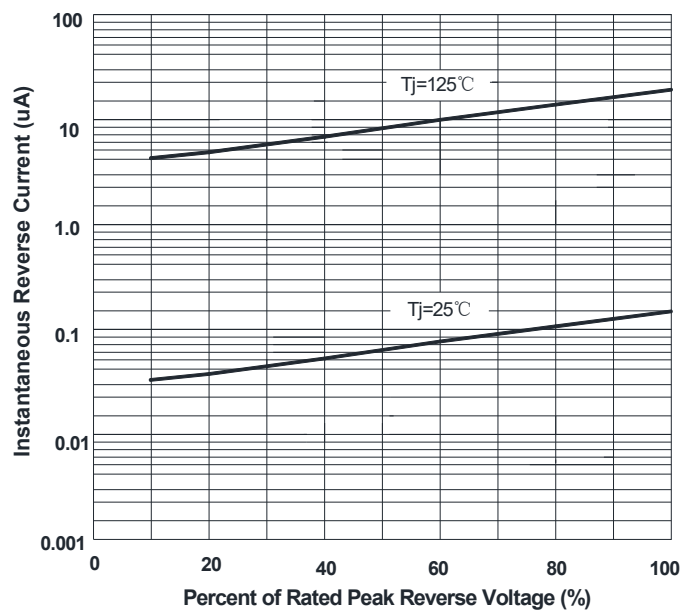




FIG.5: Diagram of circuit and Testing wave form of reverse recovery time

