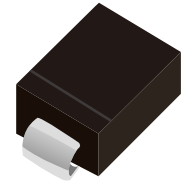
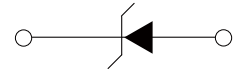


## FEATURES

- | Low profile package
- | Ideal for automated placement
- | Glass passivated chip junction
- | High forward surge capability
- | Super Fast reverse recovery time



DO-214AA(SMB)



Schematic Symbol

## APPLICATIONS

- | For use in high frequency rectification of power supplies, inverters, converters, and freewheeling diodes for consumer, and telecommunication

## APPROVALS

<b>RoHS</b>	Compliance with 2011/65/EU
<b>HF</b>	Compliance with IEC61249-2-21:2003

## MAXIMUM RATINGS AND CHARACTERISTICS (T<sub>A</sub>=25°C)

Parameter	Symbol	MURS220	MURS240	MURS260	Unit
Marking		MURS220	MURS240	MURS260	
Maximum Repetitive Peak Reverse Voltage	V <sub>RRM</sub>	200	400	600	V
Maximum RMS Voltage	V <sub>RMS</sub>	140	280	420	
Maximum DC Blocking Voltage	V <sub>DC</sub>	200	400	600	
Average Rectified Output Current @60Hz Sine Wave, Resistance Load, TL (Fig.1)	I <sub>o</sub>	2.0			A
Forward Surge Current (Non-Repetitive) @60Hz Half-sine Wave, 1 Cycle, T <sub>j</sub> =25°C	I <sub>FSM</sub>	50			
Forward Surge Current (Non-Repetitive) @1ms, Square Wave, 1 Cycle, T <sub>j</sub> =25°C		100			
Current Squared Time @1ms ≤ t ≤ 8.3ms T <sub>j</sub> =25°C	I <sup>2</sup> t	10.375			A <sup>2</sup> s
Maximum Instantaneous Forward Voltage I <sub>FM</sub> =2.0A	V <sub>F</sub>	0.92	1.25		V
Maximum Reverse Recovery Time I <sub>F</sub> =0.5A, I <sub>R</sub> =1.0A, I <sub>RR</sub> =0.25A	t <sub>rr</sub>	25	50		ns
Typical Junction Capacitance Measured at 1MHz And Applied Reverse Voltage of 4.0 V.D.C	C <sub>J</sub>	25		24	pF
Maximum DC Reverse Current at Rated DC Blocking Voltage	T <sub>j</sub> =25°C	I <sub>R</sub>			μA
	T <sub>j</sub> =125°C	50			
Typical Thermal resistance	R <sub>θJ-A(1)</sub>	60			°C/W
	R <sub>θJ-L(1)</sub>	20			
	R <sub>θJ-C(1)</sub>	15			
Operating Junction And Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150			°C

## ELECTRICAL CHARACTERISTICS ( $T_A=25^\circ\text{C}$ )

### MURS220

Parameter	Test Condition		Symbol	Min.	Typ.	Max.	Unit
Reverse Recovery Time	$T_J=25^\circ\text{C}$	$I_F=1\text{A}, di/dt=-50\text{A}/\mu\text{s}, V_{RM}=30\text{V}$	$T_{RR}$	-	26	-	ns
	$T_J=25^\circ\text{C}$			-	23	-	
	$T_J=125^\circ\text{C}$			-	30	-	
Peak recovery current	$T_J=25^\circ\text{C}$	$I_F=2\text{A}, di/dt=-200\text{A}/\mu\text{s}, V_{RM}=100\text{V}$	$I_{RRM}$	-	3.1	-	A
	$T_J=125^\circ\text{C}$			-	5.0	-	
Reverse recovery charge	$T_J=25^\circ\text{C}$		$Q_{rr}$	-	35.4	-	nC
	$T_J=125^\circ\text{C}$			-	73.8	-	
Non-repetitive avalanche energy	$T_J=25^\circ\text{C}$	$I_R=1.8\text{A}, L=15\text{mH}$	$E_{AS}$	24.3	-	-	mJ

### MURS240

Parameter	Test Condition		Symbol	Min.	Typ.	Max.	Unit
Reverse Recovery Time	$T_J=25^\circ\text{C}$	$I_F=1\text{A}, di/dt=-50\text{A}/\mu\text{s}, V_{RM}=30\text{V}$	$T_{RR}$	-	35	-	ns
	$T_J=25^\circ\text{C}$			-	30	-	
	$T_J=125^\circ\text{C}$			-	45	-	
Peak recovery current	$T_J=25^\circ\text{C}$	$I_F=2\text{A}, di/dt=-200\text{A}/\mu\text{s}, V_{RM}=200\text{V}$	$I_{RRM}$	-	3.7	-	A
	$T_J=125^\circ\text{C}$			-	5.8	-	
Reverse recovery charge	$T_J=25^\circ\text{C}$		$Q_{rr}$	-	55.4	-	nC
	$T_J=125^\circ\text{C}$			-	130.6	-	
Non-repetitive avalanche energy	$T_J=25^\circ\text{C}$	$I_R=0.5\text{A}, L=15\text{mH}$	$E_{AS}$	1.9	-	-	mJ

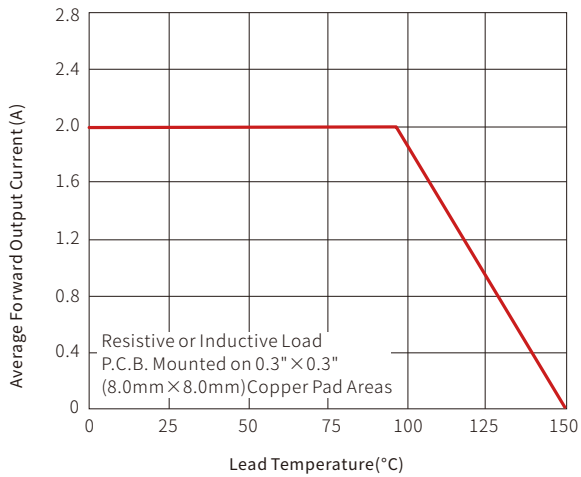
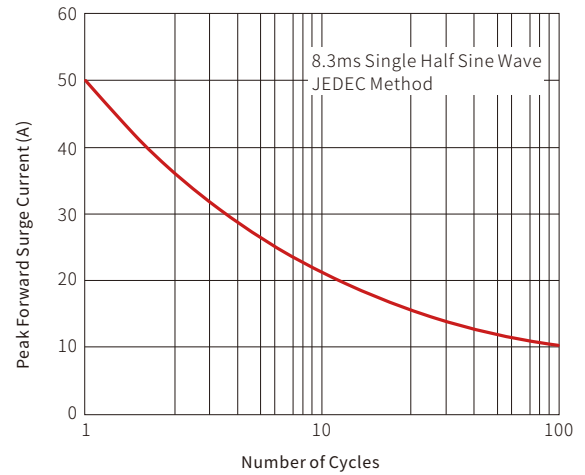
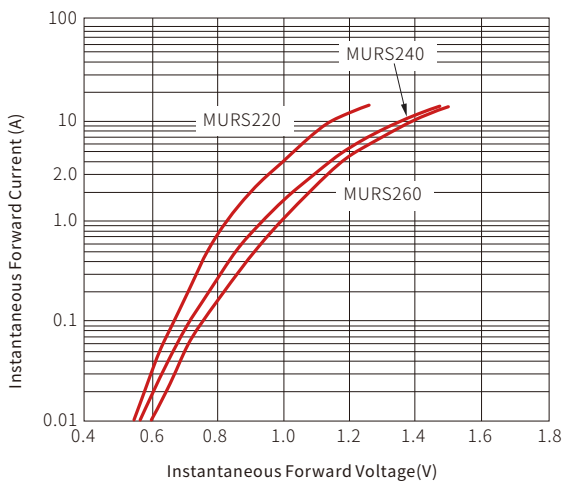
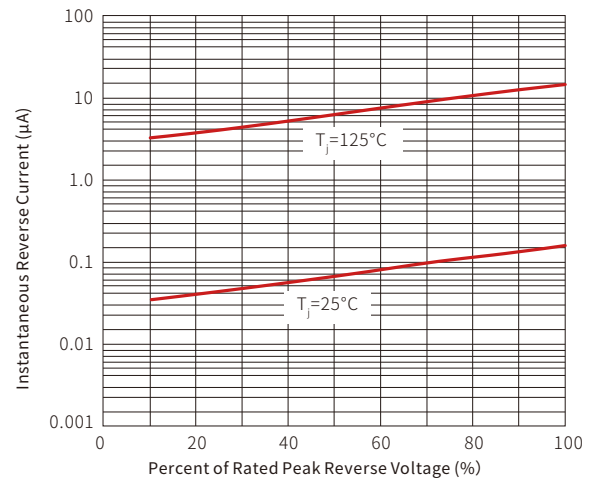
### MURS260

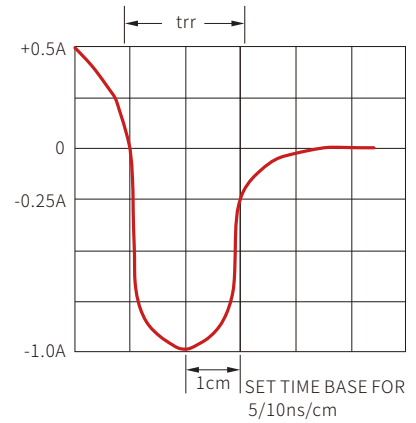
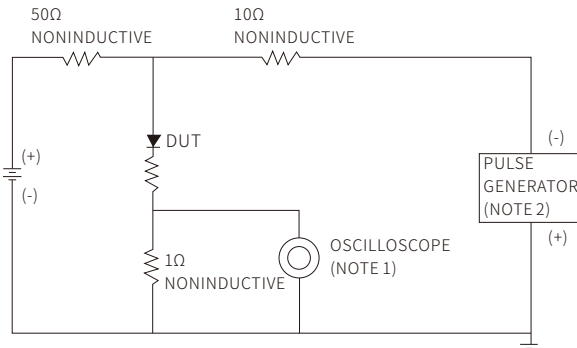
Parameter	Test Condition		Symbol	Min.	Typ.	Max.	Unit
Reverse Recovery Time	$T_J=25^\circ\text{C}$	$I_F=1\text{A}, di/dt=-50\text{A}/\mu\text{s}, V_{RM}=30\text{V}$	$T_{RR}$	-	50	-	ns
	$T_J=25^\circ\text{C}$			-	43	-	
	$T_J=125^\circ\text{C}$			-	66	-	
Peak recovery current	$T_J=25^\circ\text{C}$	$I_F=2\text{A}, di/dt=-200\text{A}/\mu\text{s}, V_{RM}=400\text{V}$	$I_{RRM}$	-	5.0	-	A
	$T_J=125^\circ\text{C}$			-	7.4	-	
Reverse recovery charge	$T_J=25^\circ\text{C}$		$Q_{rr}$	-	105.9	-	nC
	$T_J=125^\circ\text{C}$			-	243.8	-	
Non-repetitive avalanche energy	$T_J=25^\circ\text{C}$	$I_R=0.5\text{A}, L=15\text{mH}$	$E_{AS}$	1.9	-	-	mJ

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

# CHARACTERISTIC CURVES

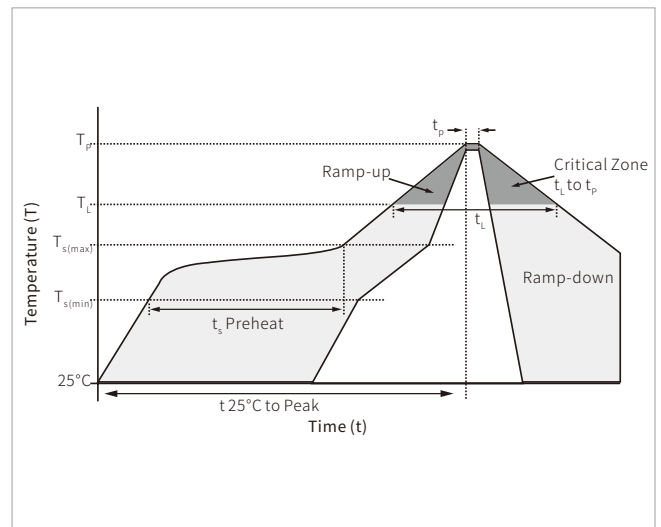
**FIG.1: I<sub>o</sub>-T<sub>L</sub> Curve**

**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**


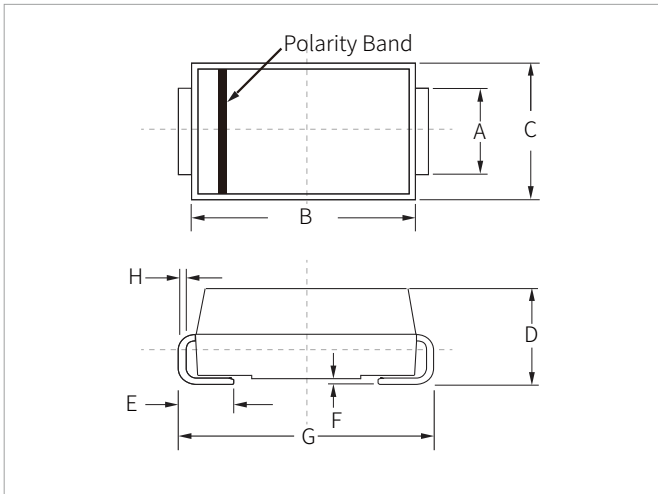
Notes: 1. Rise Time=7ns max. Input Impedance=1MΩ 22pf  
 2. Rise Time=10ns max. Source Impedance=50Ω

## SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Max ( $T_{s(min)}$ )	150°C
	Temperature Max ( $T_{s(max)}$ )	200°C
	Time (min to max) ( $t_s$ )	60 – 180 secs
Average ramp up rate (Liquidus Temp ( $T_L$ ) to peak)		3°C/second max
$T_{s(max)}$ to $T_L$ - Ramp-up Rate		3°C/second max
Reflow	Temperature ( $T_L$ ) (Liquidus)	217°C
	Time (min to max) ( $t_L$ )	60 – 150 seconds
Peak Temperature ( $T_p$ )		260°C
Time within 5°C of actual peak Temperature ( $t_p$ )		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature ( $T_p$ )		8 minutes max.
Do not exceed		260°C

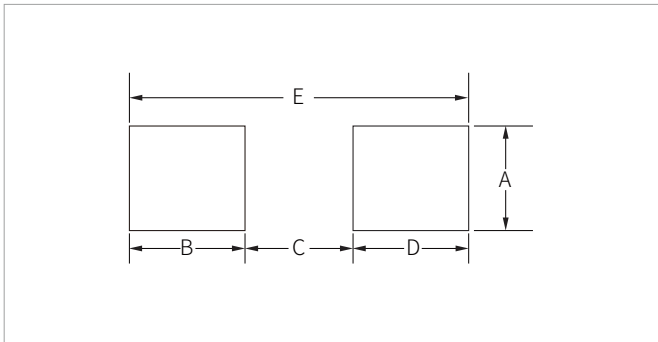


## DO-214AA(SMB) PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.80	2.20	0.071	0.087
B	4.30	4.70	0.170	0.185
C	3.40	3.90	0.134	0.153
D	2.15	2.75	0.085	0.108
E	1.00	1.50	0.039	0.059
F	0.02	0.20	0.001	0.008
G	5.10	5.50	0.200	0.216
H	0.15	0.30	0.006	0.012

## RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.20	-	0.087	-
B	1.45	-	0.057	-
C	-	2.55	-	0.010
D	1.45	-	0.057	-
E	5.60REF		0.220REF	

## ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
MURS220-MURS260	DO-214AA(SMB)	3000PCS	13"

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