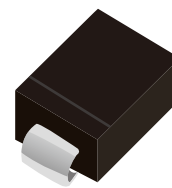


FEATURES

- | Ideal for automated placement
- | Glass passivated chip junction
- | High forward surge capability
- | Super Fast reverse recovery time
- | Meet AEC-Q101 Requirements



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

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

MAXIMUM RATINGS AND CHARACTERISTICS (T_A=25°C)

Parameter		Symbol	MURS220Q	MURS240Q	MURS260Q	Unit
Marking			MURS220	MURS240	MURS260	
Maximum Repetitive Peak Reverse Voltage		V _{RRM}	200	400	600	V
Maximum RMS Voltage		V _{RMS}	140	280	420	
Maximum DC Blocking Voltage		V _{DC}	200	400	600	
Average Rectified Output Current @60Hz Sine Wave, Resistance Load, TL (Fig.1)		I _o	2.0			A
Forward Surge Current (Non-Repetitive) @60Hz Half-sine Wave,1 Cycle, Tj=25°C		I _{FSM}	50			
Forward Surge Current (Non-Repetitive) @1ms, Square Wave, 1 Cycle, Tj=25°C			100			
Current Squared Time @1ms≤t≤8.3ms Tj=25°C		I²t	10.375			A²s
Maximum Instantaneous Forward Voltage I _{FM} =2.0A		V _F	0.92	1.25		V
Maximum Reverse Recovery Time I _F =0.5A, I _R =1.0A, I _{RR} =0.25A		t _{rr}	25	50		ns
Typical Junction Capacitance Measured at 1MHz And Applied Reverse Voltage of 4.0 V.D.C		C _J	25		24	pF
Maximum DC Reverse Current at Rated DC Blocking Voltage	Tj=25°C	I _R	5.0			μA
	Tj=125°C		50			
Typical Thermal resistance		R _{θJ-A(1)}	60			°C/W
		R _{θJ-L(1)}	20			
		R _{θJ-C(1)}	15			
Operating Junction And Storage Temperature Range		T _J ,T _{STG}	-55 to +150			°C

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

MURS220Q

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

MURS240Q

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

MURS260Q

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: Io-TL Curve

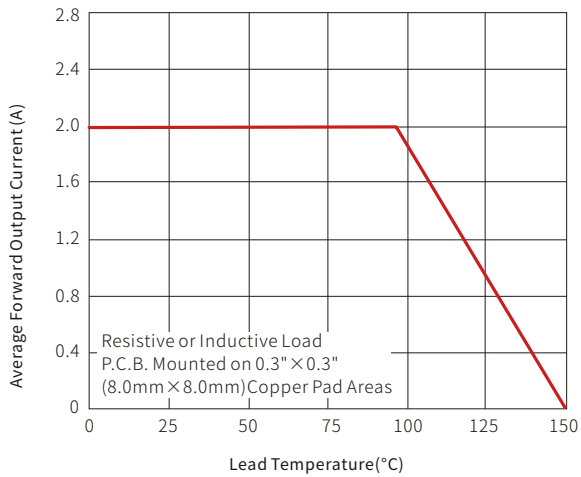


FIG.2: Forward Surge Current Capability

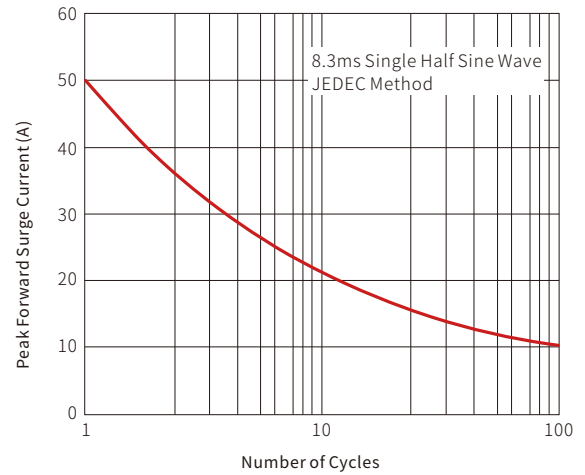


FIG.3: Typical Forward Voltage

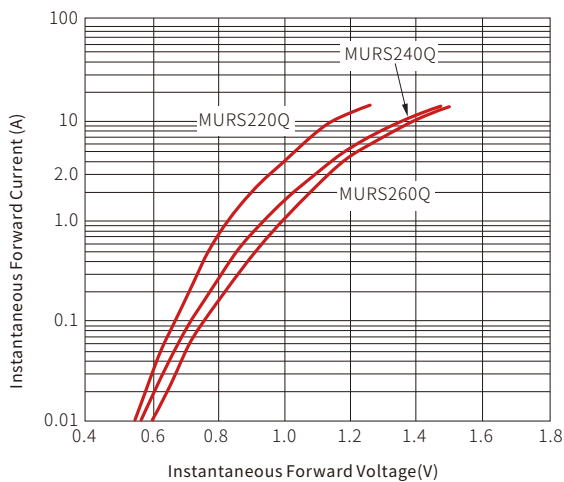


FIG.4: Typical Reverse Characteristics

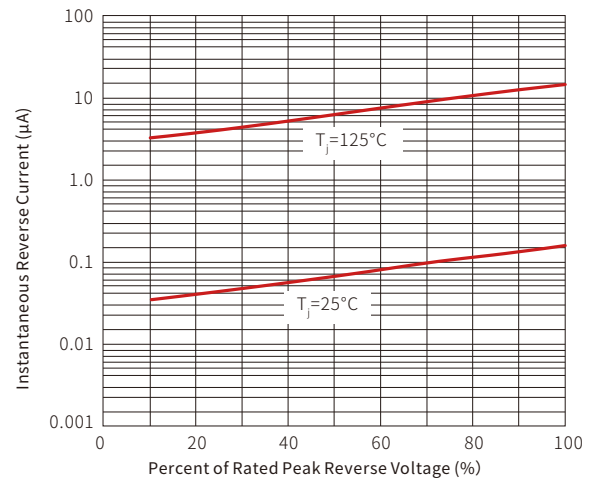
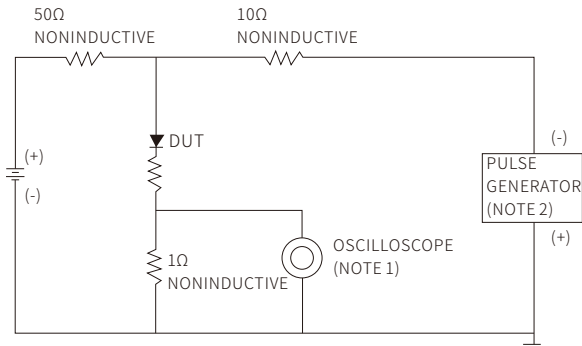
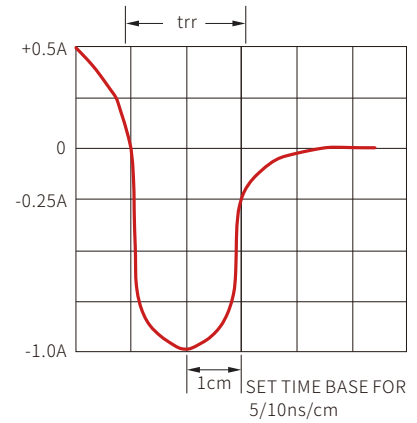


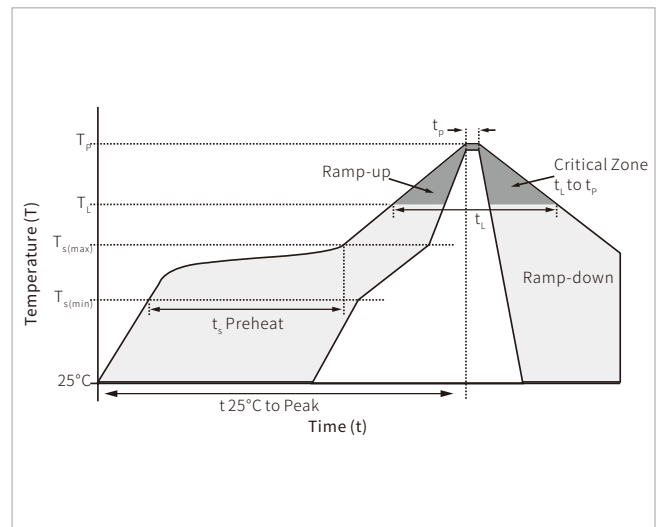
Fig. 5-Diagram of circuit and Testing wave form of reverse recovery time


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

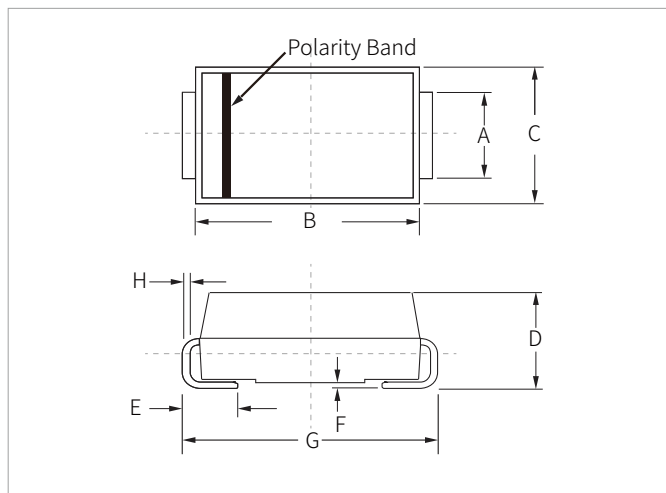


SOLDERING PARAMETERS

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

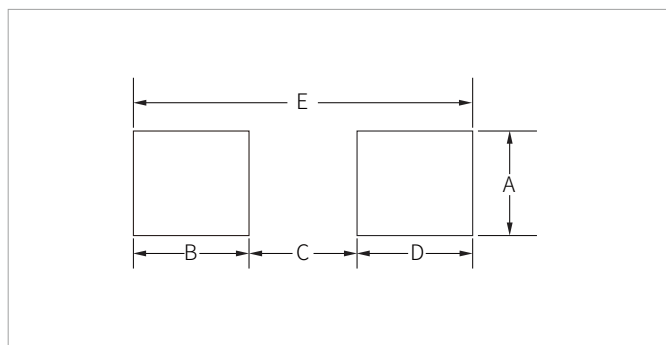


DO-214AA(SMB) PACKAGE INFORMATION



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
MURS220Q-MURS260Q	DO-214AA(SMB)	3000PCS	13"

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