

Features

- Low profile package
- Idea for automated placement
- Glass passivated chip junction
- High forward surge current capability
- Fast reverse recovery time
- Compliant to Halogen-free
- Suffix "-Q1" for AEC-Q101

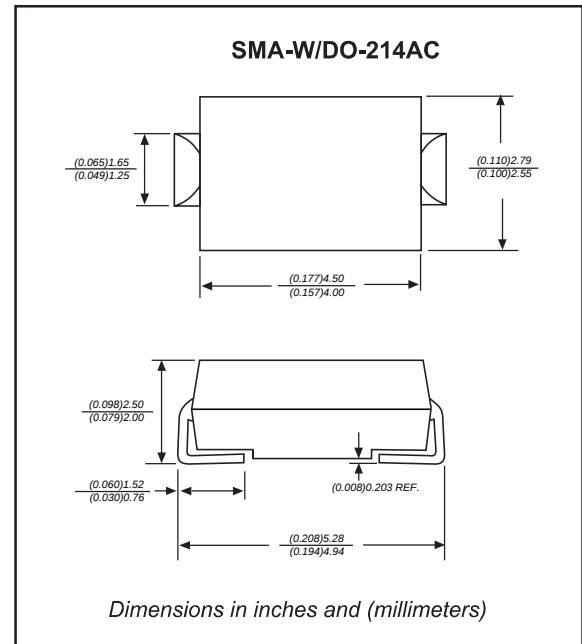
Application

- Rectification of power supplies
- Inverters
- Converters
- Freewheeling diodes

Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : SMA-W
- Terminals : Tin plated leads, solderable per J-STD-002 and JESD22-B102
- Polarity : Cathode line denotes the cathode end

Package outline



Maximum ratings and Electrical Characteristics (AT $T_A=25^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Average Forward current	half-sine wave, resistance load	I_O			1.0	A
Forward surge current	60HZ sine wave, 1 cycle	I_{FSM}			20	A
	1ms, square wave, 1 cycle				40	
Reverse current	$V_R = V_{RRM} \quad T_J = 25^{\circ}\text{C}$	I_R			5.0	μA
	$V_R = V_{RRM} \quad T_J = 125^{\circ}\text{C}$				100	
Current squared time	$1\text{ms} \leq t \leq 8.3\text{ms}$	I^2t		1.7		A^2s
Diode junction capacitance	$f=1\text{MHz}$ and applied 4V DC reverse voltage	C_J		15		pF
Thermal resistance, note 1	Junction to ambient	$R_{\theta JA}$		50		$^{\circ}\text{C/W}$
Storage temperature		T_{STG}	-55		+150	$^{\circ}\text{C}$

SYMBOLS	V_{RRM}^{*1} (V)	V_{RMS}^{*2} (V)	V_R^{*3} (V)	V_F^{*4} (V)	t_{rr}^{*5} (ns)	Operating temperature $T_J, (^{\circ}\text{C})$
US1Z-W-Q1	3000	2100	3000	3	100	-55~150

Note: 1.Measured at 1MHz and applied reverse voltage of 4.0V D.C.
 2. Reverse recovery time test condition, $I_F=0.5\text{A}$, $I_R=1.0\text{A}$, $I_{RR}=0.25\text{A}$

- *1 Repetitive peak reverse voltage
- *2 Maximum RMS voltage
- *3 Continuous reverse voltage
- *4 Maximum forward voltage@ $I_F=1.0\text{A}$
- *5 Maximum Reverse recovery time, note 2

Rating and characteristic curves ($T_A=25^\circ\text{C}$ unless otherwise noted)

Fig. 1 - Forward Current Derating Curve

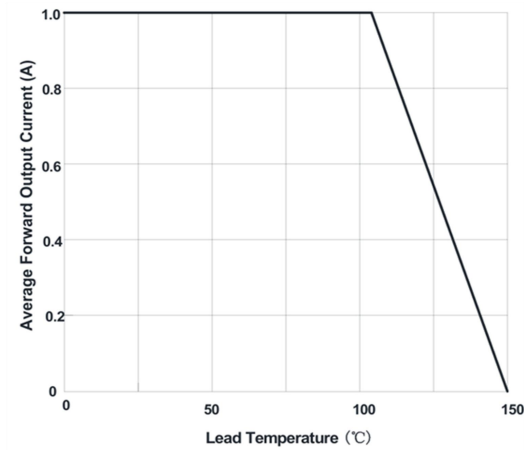


Fig. 2 - Surge Forward Current Capability

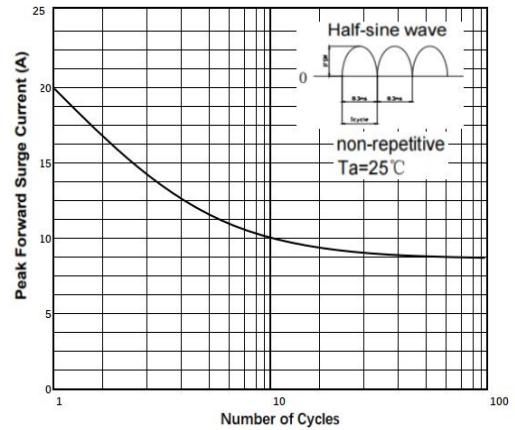


Fig. 3 - Instantaneous Forward Voltage

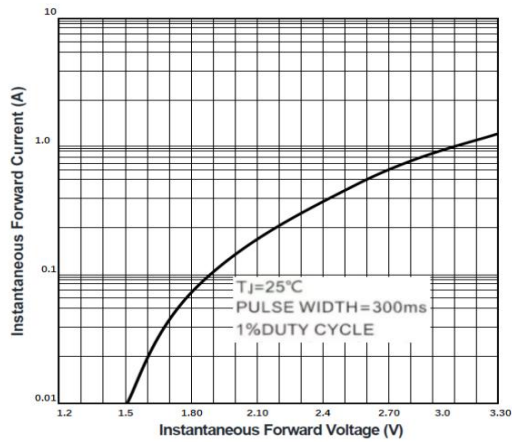
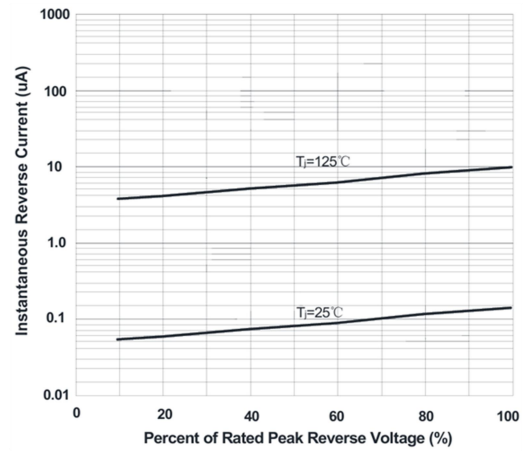


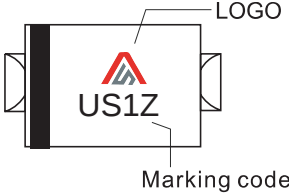
Fig. 4 - Typical Reverse Characteristics



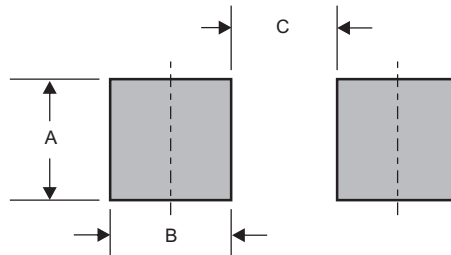
Pinning information

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

Marking

Type number	Marking code	Example
US1Z-W-Q1	US1Z	

Suggested solder pad layout



Dimensions in inches and (millimeters)

PACKAGE	A	B	C
SMA-W	0.067 (1.70)	0.098 (2.50)	0.059 (1.50)