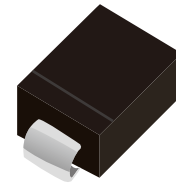


FEATURES

- | Low Power Loss, High Efficiency
- | Ideal For Automated Placement
- | Glass Passivated Junction Chip
- | Fast Switching For High Efficiency
- | 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	ES 2AQ	ES 2BQ	ES 2CQ	ES 2DQ	ES 2FQ	ES 2GQ	ES 2HQ	ES 2JQ	ES 2KQ	Unit
Marking		ES 2AQ	ES 2BQ	ES 2CQ	ES 2DQ	ES 2FQ	ES 2GQ	ES 2HQ	ES 2JQ	ES 2KQ	
Repetitive Peak Reverse Voltage	V _{RRM}	50	100	150	200	300	400	500	600	800	V
Reverse Voltage, Total RMS Value	V _{RMS}	35	70	105	140	210	280	350	420	560	
Maximum DC Blocking Voltage	V _{DC}	50	100	150	200	300	400	500	600	800	
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, T _J =25°C	I _{FSM}	50									A
Forward Surge Current (Non-repetitive) @1ms, Square Wave, 1 Cycle, T _J =25°C		100									
Maximum Instantaneous Forward Voltage I _{FM} =2.0A	V _F	0.95			1.3		1.7		1.85		V
Reverse Current @ Rated V _r Per Diode ⁽²⁾	T _J =25°C	5									μA
	T _J =125°C	100									
Maximum Reverse Recovery Time I _F =0.5A, I _R =1.0A, I _{FF} =0.25A	T _{rr}	35									ns
Typical Junction Capacitance Measured at 1MHz And Applied Reverse Voltage Of 4.0 V.D.C	C _J	31			17		12		12		pF
Current Squared Time @1ms ≤ t ≤ 8.3ms T _J =25°C	I ² t	10.375									A ² s
Operating Junction and Storage Temperature Range	T _J , T _{STG}	-55 to +150									°C

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

Parameter	Symbol	ES 2AQ	ES 2BQ	ES 2CQ	ES 2DQ	ES 2FQ	ES 2GQ	ES 2HQ	ES 2JQ	ES 2KQ	Unit	
Typical Thermal Resistance	$R_{\theta J-A}^{(1)}$	60										$^{\circ}\text{C}/\text{W}$
	$R_{\theta J-L}^{(1)}$	22										
	$R_{\theta J-C}^{(1)}$	16										

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_o - TL Curve

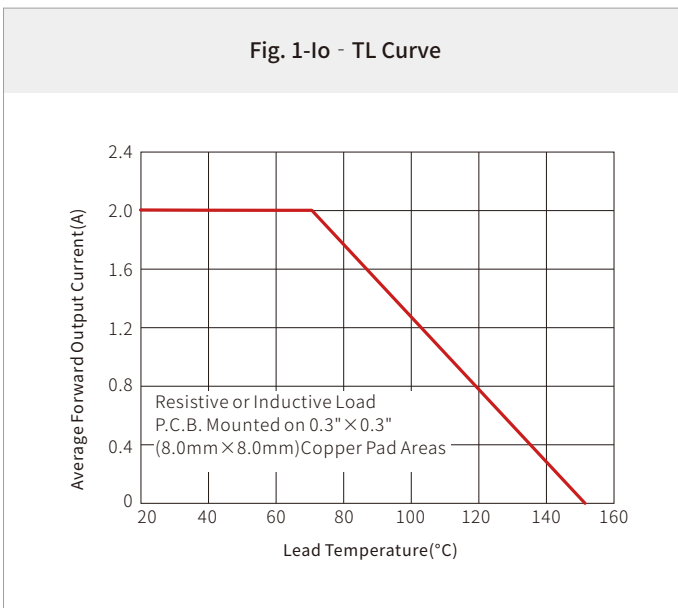


Fig. 2-Surge Forward Current Capability

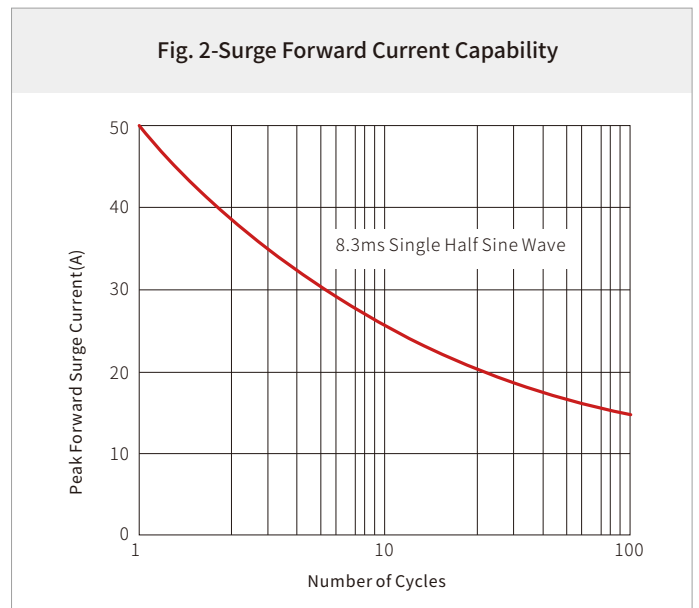
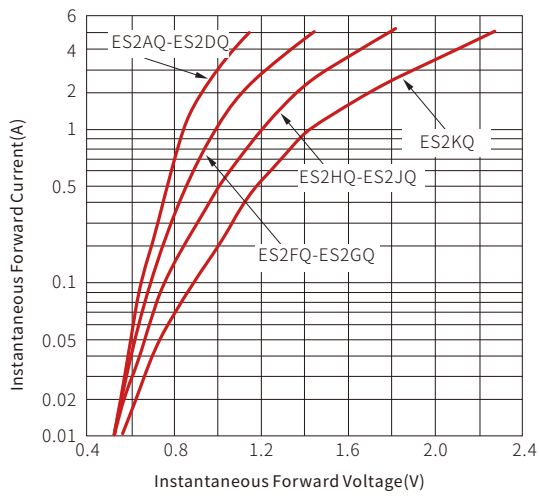
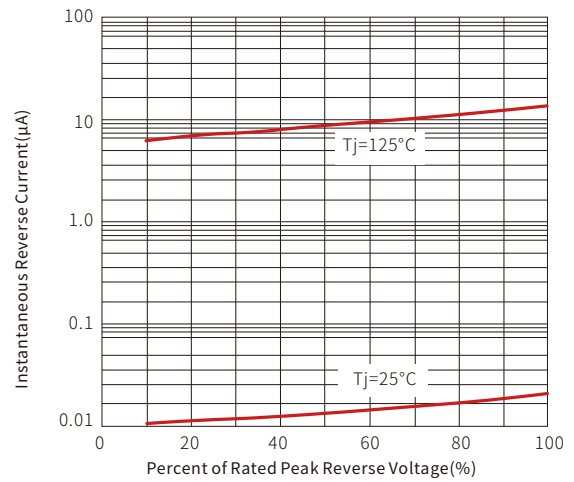
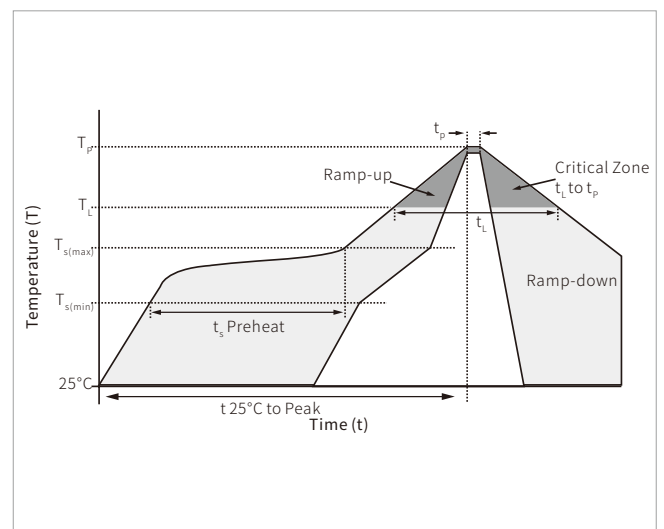


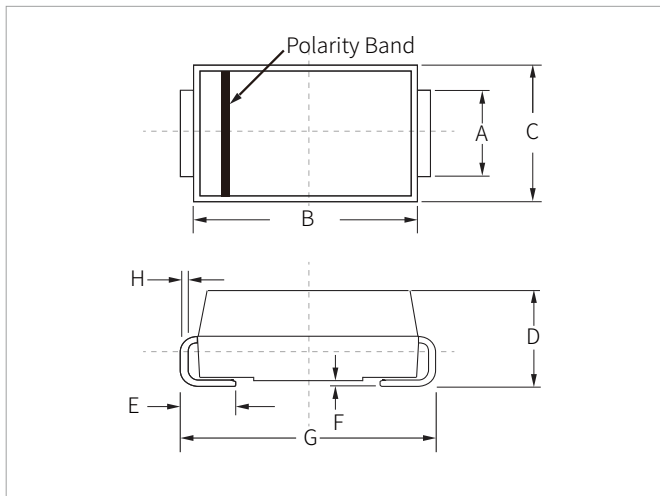
Fig. 3-Typical Forward Voltage

Fig. 4-Typical Reverse Characteristics


SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Max ($T_{s(\text{min})}$)	150°C
	Temperature Max ($T_{s(\text{max})}$)	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
$T_{s(\text{max})}$ 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

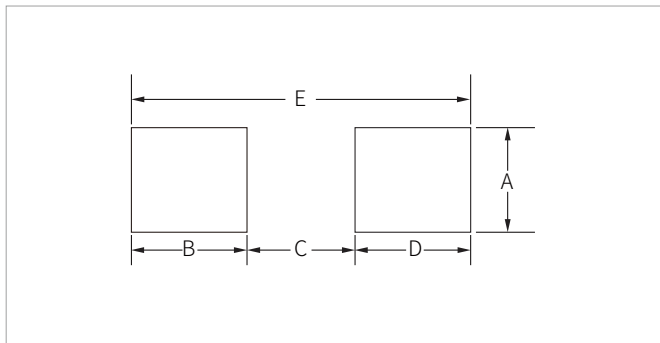


DO-214AA(SMB) PACKAGE INFORMATION



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
ES2AQ-ES2KQ	DO-214AA(SMB)	3000PCS	13"

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