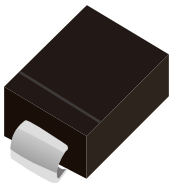
ES2AB-ES2KB

Ultra-Fast Recovery Rectifier Diode

FEATURES

- Low Power Loss, High Efficiency
- Ideal For Automated Placement
- Glass Passivated Junction Chip
- Fast Switching For High Efficiency



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 2AB	ES 2BB	ES 2CB	ES 2DB	ES 2FB	ES 2GB	ES 2HB	ES 2JB	ES 2KB	Unit
Marking		ES2A	ES2B	ES2C	ES2D	ES2F	ES2G	ES2H	ES2J	ES2K	
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, Tj=25°C	I_{FSM}	50									A
Forward Surge Current (Non-repetitive) @1ms, Square Wave, 1 Cycle, Tj=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	I_R	5									μA
Reverse Current @ Rated V_R Per Diode(2) 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 Tj=25°C	I^2t	10.375									A^2s
Operating Junction and Storage Temperature Range	T_J,T_{STG}	-55 to +150									°C

THERMAL CHARACTERISTICS (T_A=25°C)

Parameter	Symbol	ES 2AB	ES 2BB	ES 2CB	ES 2DB	ES 2FB	ES 2GB	ES 2HB	ES 2JB	ES 2KB	Unit
Typical Thermal Resistance	$R_{\theta J\text{-}A}$ (1)	60									°C/W
	$R_{\theta J\text{-}L}$ (1)	22									
	$R_{\theta J\text{-}C}$ (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-Io - TL Curve

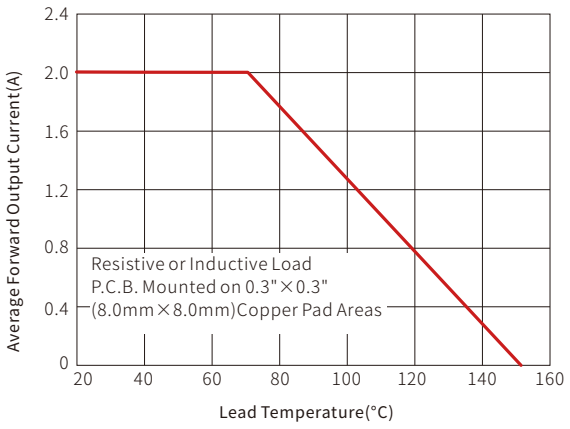


Fig. 2-Surge Forward Current Capability

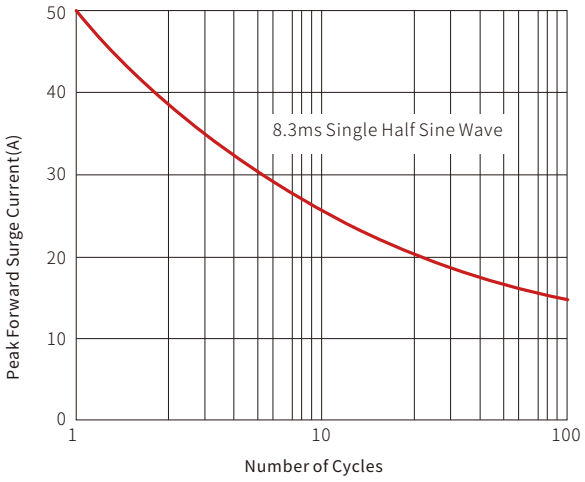


Fig. 3-Typical Forward Voltage

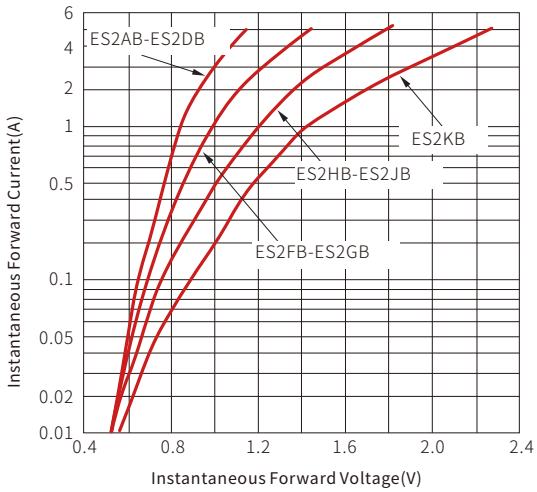
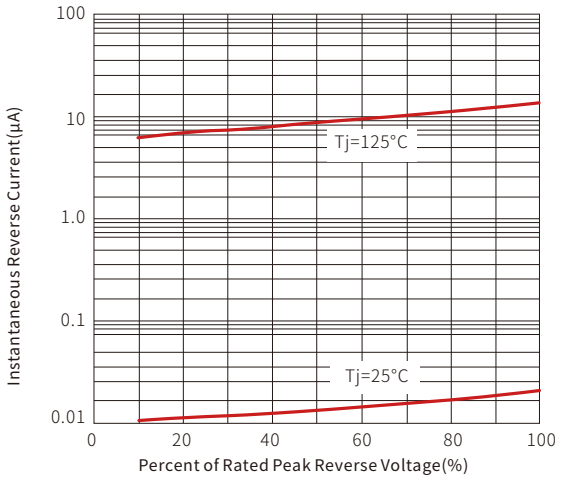
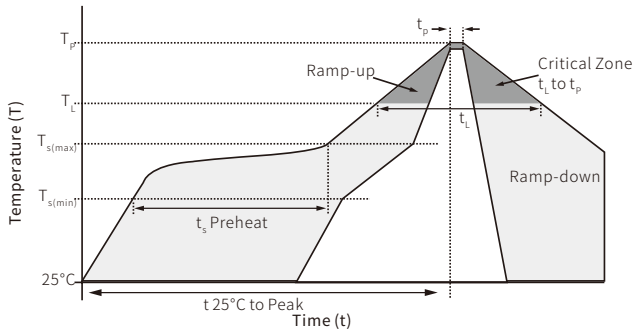


Fig. 4-Typical Reverse Characteristics

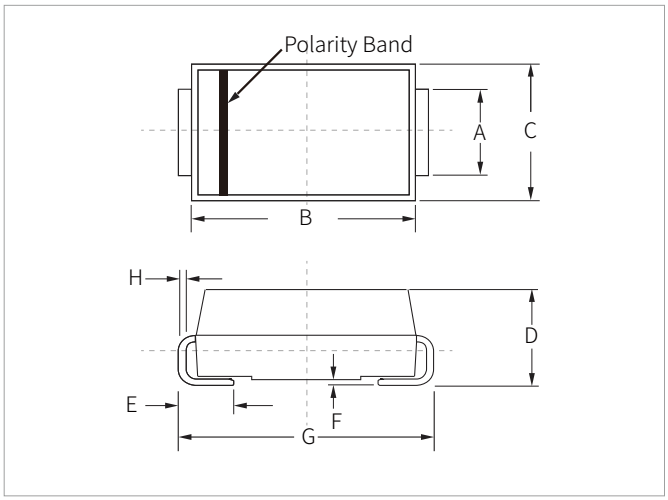


SOLDERING PARAMETERS

Reflow Condition		Lead–free assembly
Pre Heat	Temperature Max ($T_{s(min)}$)	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

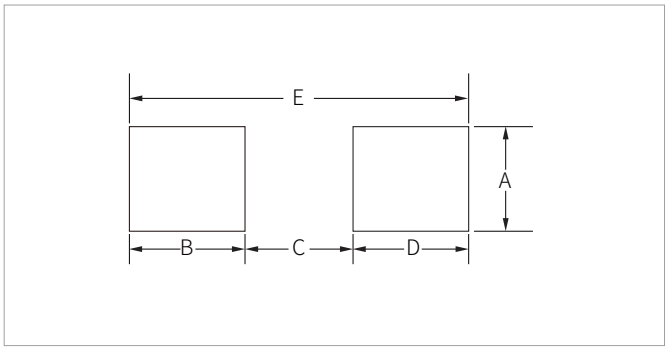


DO-214AA(SMB) PACKAGE INFORMATION



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
ES2AB-ES2KB	DO-214AA(SMB)	3000PCS	13"

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