

ES2A-ES2J

Fast Recovery
Rectifier Diode

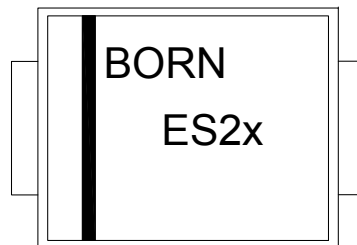
Features

- Super fast switching time for high efficiency
- Low forward voltage drop
- High current capability
- High reliability
- High surge current capability
- Epitaxial construction

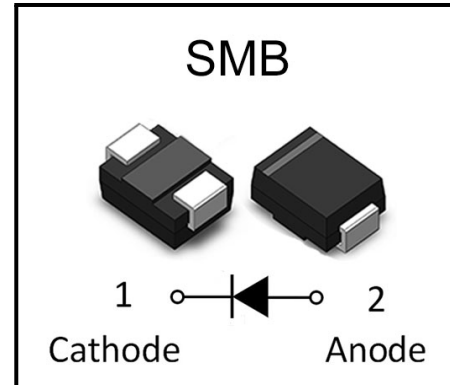
Description

- Case: molded plastic
- Polarity: Color band denotes cathode
- Package: SMB Plastic Package

Making Code



Package



Ordering information

Part Number	ES2A	ES2B	ES2C	ES2D	ES2E	ES2G	ES2J
Marking	ES2A	ES2B	ES2C	ES2D	ES2E	ES2G	ES2J
Base qty	3K	3K	3K	3K	3K	3K	3K



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Maximum Ratings (@T_A=25°C unless otherwise noted)

Symbol	Parameter	ES2A	ES2B	ES2C	ES2D	ES2E	ES2G	ES2J	Unit
V _{RRM}	Maximum Repetitive Peak Reverse Voltage	50	100	150	200	300	400	600	V
V _{RMS}	Maximum RMS Voltage	35	70	105	140	210	280	420	V
V _{DC}	Maximum DC Blocking Voltage	50	100	150	200	300	400	600	V
I _(AV)	Maximum Average Forward Rectified Current at T _L = 110°C	2.0							A
I _{FSM}	Peak Forward Surge Current 8.3ms Single half sine-wave Superimposed on Rated Load(JEDEC Method)	50							A
V _F	Maximum Instantaneous Forward Voltage at 2.0A	0.95				1.25		1.7	V
I _R	Maximum DC Reverse Current at Rated T _A = 25°C DC Blocking Voltage Per Element T _A = 125°C	5.0 200							uA
T _{RR}	Maximum Reverse Recovery Time(Note1)	35							nS
C _J	Typical Junction Capacitance(Note2)	40							pF
R _{θJA}	Typical Thermal Resistance(Note1)	75							°C/W
R _{θJL}		17							
T _J	Operating Temperature Range	-55 to +150							°C
T _{STG}	Storage Temperature Range	-55 to +150							°C

Notes:(1)Measured with I_F=0.5A,I_R=1A,I_{RR}=0.25A

(2)Measured at 1.0 MHz and applied reverse voltage of 4.0V DC



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Typical Performance Characteristics($T_J = 25^\circ\text{C}$, unless otherwise noted)

Figure 1: Typical Forward Current Derating Curve

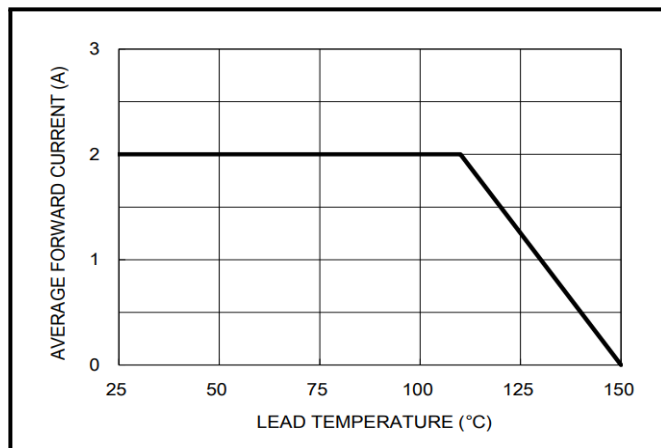


Figure 2: Maximum Non-Repetitive Peak Forward Surge Current

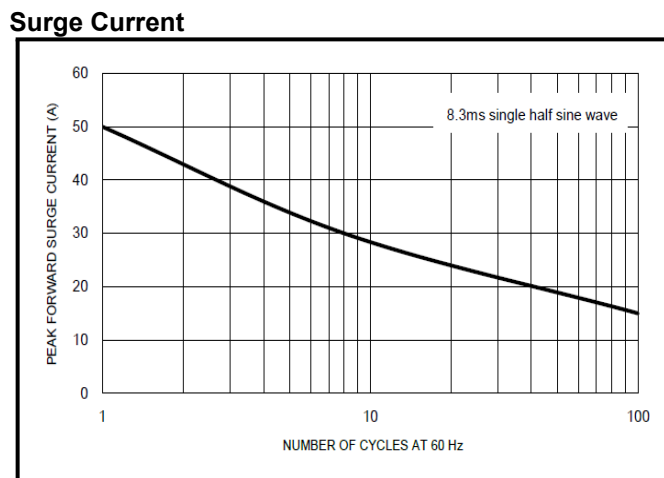


Figure 3: Typical Instantaneous Forward Characteristics

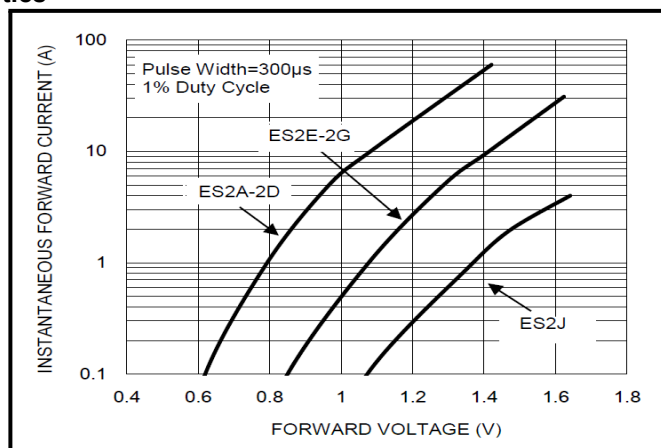


Figure 4: Typical Reverse Characteristics

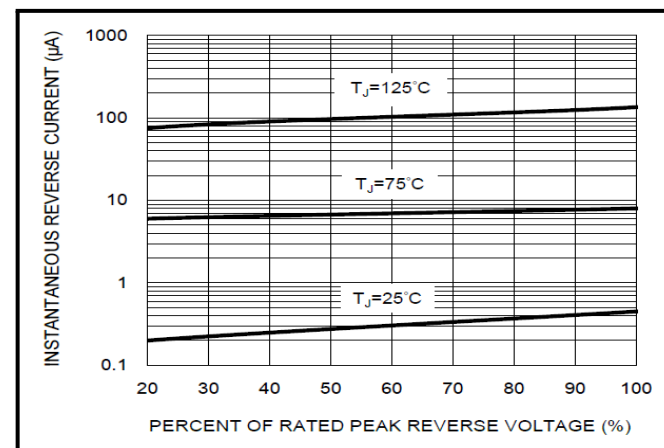


Figure 5: Typical Junction Capacitance

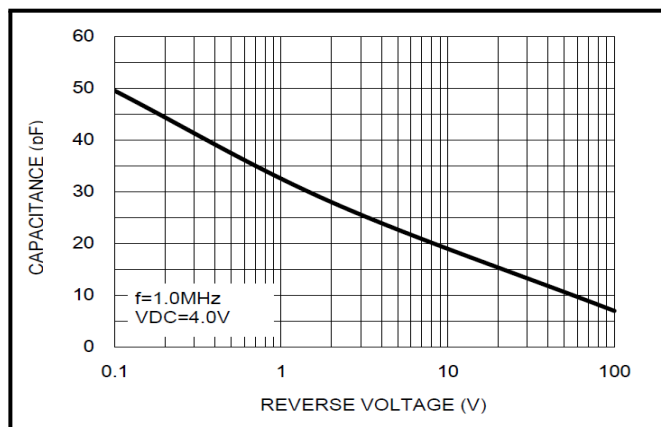
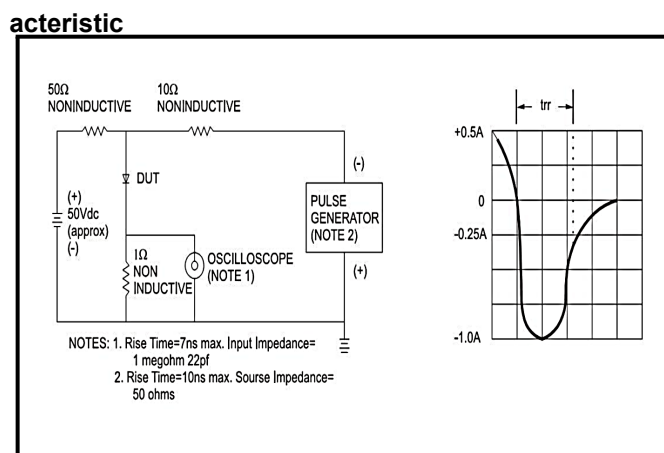
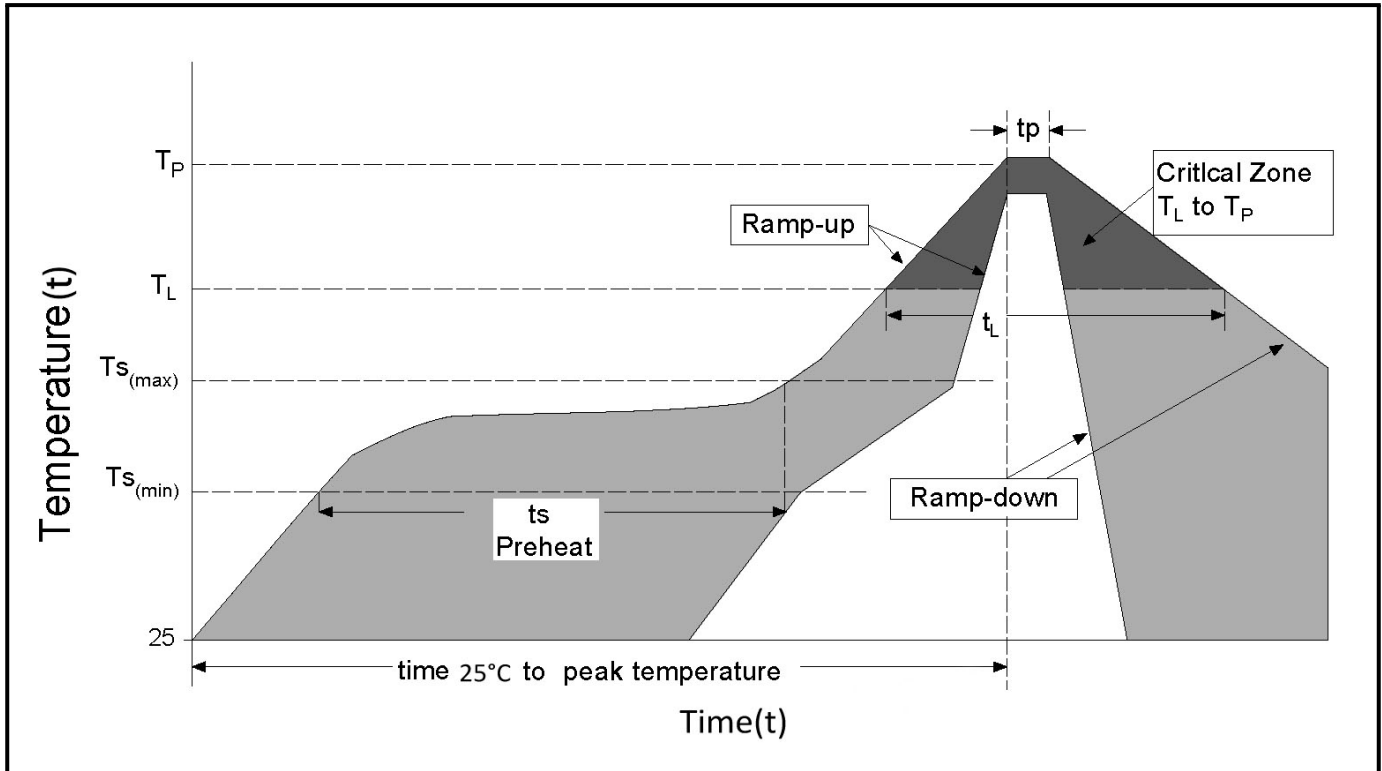


Figure 6: Test Circuit Diagram And Recover Time Characteristic



Soldering Parameters



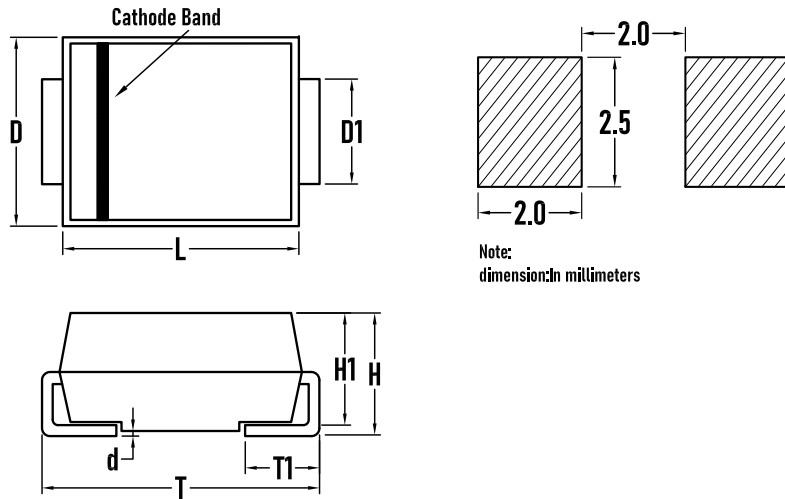
Reflow Condition		Lead-free assembly
Pre Heat	- Temperature Min ($T_{S(min)}$)	150°C
	- Temperature Max ($T_{S(max)}$)	200°C
	- Time (min to max) (t_s)	60 - 180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/second max
$T_{S(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	- Temperature (T_L) (Liquidus)	217°C
	- Time (t_L)	60 - 150 secs
Peak Temperature (T_P)		260 ^{+0/-5} °C
Time within 5°C of actual peak Temperature (t_p)		20 - 40 secs
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (t)		8 minutes Max.
Do not exceed		260°C



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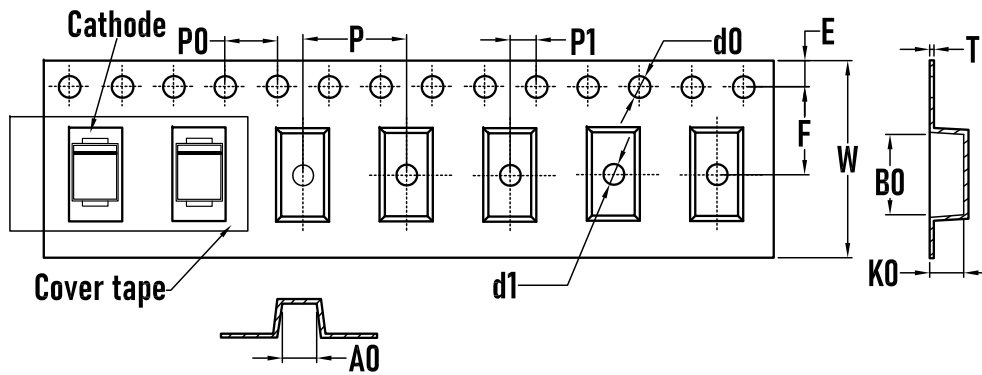
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Outline Drawing - SMB



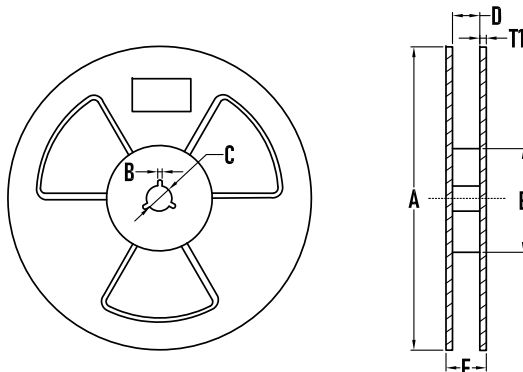
SYMBOL	MILLIMETER		Inches	
	MIN.	MAX.	MIN.	MAX.
D	3.3	3.9	0.130	0.154
D1	1.7	2.3	0.067	0.091
T	5.1	5.7	0.201	0.224
T1	0.8	1.6	0.031	0.063
d	—	0.3	—	0.012
H1	2.0	2.4	0.079	0.094
H	2.1	2.5	0.083	0.098
L	4.0	4.7	0.157	0.185

Packaging Tape - SMB



SYMBOL	MILLIMETER
A0	3.60±0.1
B0	5.45±0.1
d0	1.50±0.1
d1	1.50±0.1
E	1.75±0.1
F	5.50±0.1
K0	2.30±0.1
P	8.00±0.1
P0	4.00±0.1
P1	2.00±0.1
W	12.00±0.1
T	0.22±0.02

Packaging Reel



SYMBOL	MILLIMETER
A	323±2
B	3.0±0.2
C	15.0±0.5
D	13±2
E	73±2
T1	2.2±0.2
Quantity	3000PCS

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Specifications are subject to change without notice.

Please refer to <http://www.born-tw.com> for current information.

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