

Features

- Glass passivated junction chip
- Ideal for automated placement
- Low profile package
- Super fast recovery time for high efficiency
- Compliant to RoHS directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21



DO-214AA (SMB)

Applications

- Switching mode power supply (SMPS)
- Adapters
- Lighting application
- Converter

Mechanical Data

- Case: DO-214AA (SMB)
- Molding compound meets UL 94V-0 flammability rating
- Moisture sensitivity level: level 1, per J-STD-020
- Terminal: Matte tin plated leads, solderable per J-STD -002
- Meet JESD 201 class 2 whisker test
- Polarity: As marked

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

Parameter	Symbol	ES3 AB	ES3 BB	ES3 CB	ES3 DB	ES3 FB	ES3 GB	ES3 HB	ES3 JB	Unit
Repetitive Peak Reverse Voltage	V _{RRM}	50	100	150	200	300	400	500	600	V
Reverse Voltage, Total RMS Value	V _{R(RMS)}	30	70	105	140	210	280	350	420	V
Forward Current	I _{F(AV)}	3								A
Surge Peak Forward Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load Per Diode	I _{FSM}	100								A
Thermal Resistance Junction to Lead ¹	R _{θJL}	24								°C/W
Thermal Resistance Junction to Ambient ¹	R _{θJA}	84								
Thermal Resistance Junction to Case ¹	R _{θJC}	26								
Junction Temperature	T _J	-55 to +150								°C
Storage Temperature	T _{STG}	-55 to +150								°C

Electrical Characteristics (T_A=25°C unless otherwise noted)

Parameter	Symbol	Condition	Typ.	Max.	Unit		
Forward Voltage Per Diode ²	ES3AB ES3BB ES3CB ES3DB ES3FB ES3GB ES3HB ES3JB	I _F =1.5A, T _J =25°C	0.80	0.92	V		
			0.90	1.04			
			1.11	1.30			
	ES3AB ES3BB ES3CB ES3DB ES3FB ES3GB ES3HB ES3JB	I _F =3.0A, T _J =25°C	0.86	1.00			
			0.98	1.13			
			1.24	1.45			
	ES3AB ES3BB ES3CB ES3DB ES3FB ES3GB ES3HB ES3JB	I _F =1.5A, T _J =125°C	0.66	0.75			
			0.73	0.85			
			0.85	0.98			
			ES3AB ES3BB ES3CB ES3DB ES3FB ES3GB ES3HB ES3JB	I _F =3.0A, T _J =125°C		0.73	0.84
						0.83	0.95
						0.99	1.13
Reverse Current @ Rated V _R Per Diode ³	I _R	T _J =25°C	-	10	µA		
		T _J =125°C	-	100			
Junction Capacitance	C _J	1 MHz, V _R =4.0V	46	-	pF		
			41	-			
			34	-			
Reverse Recovery Time	t _{rr}	I _F =0.5A, I _R =1.0A, I _{RR} =0.25A	-	35	ns		

Note:

- Units mounted on recommended PCB (10mm x 10mm Cu pad test board).
- Pulse test with PW=0.3ms.
- Pulse test with PW=30ms.

Characteristics Curves ($T_A=25^\circ\text{C}$ unless otherwise noted)

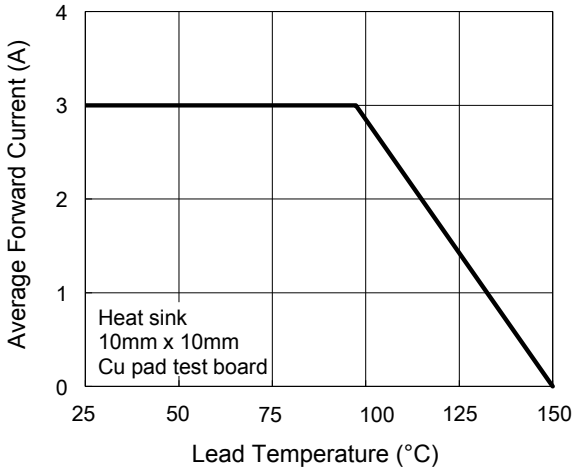


Figure 1. Forward Current Derating Curve

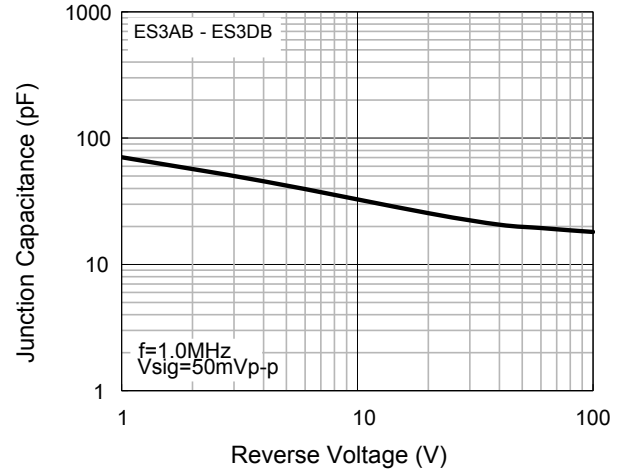


Figure 2. Typical Junction Capacitance

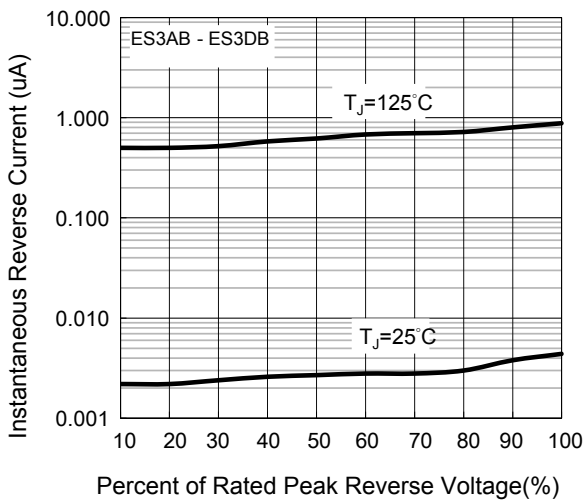


Figure 3. Typical Reverse Characteristics

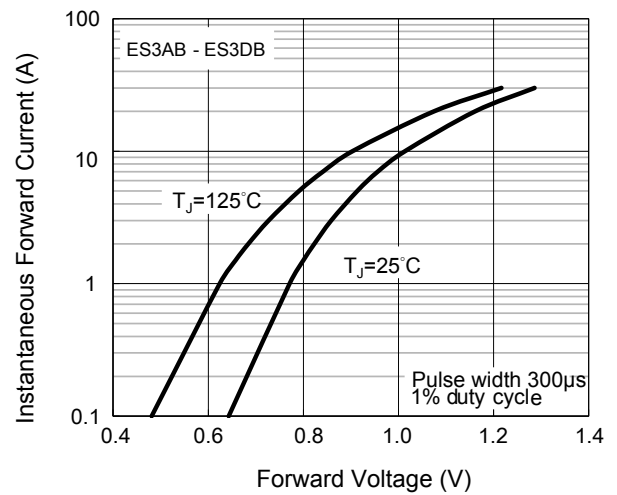


Figure 4. Typical Forward Characteristics

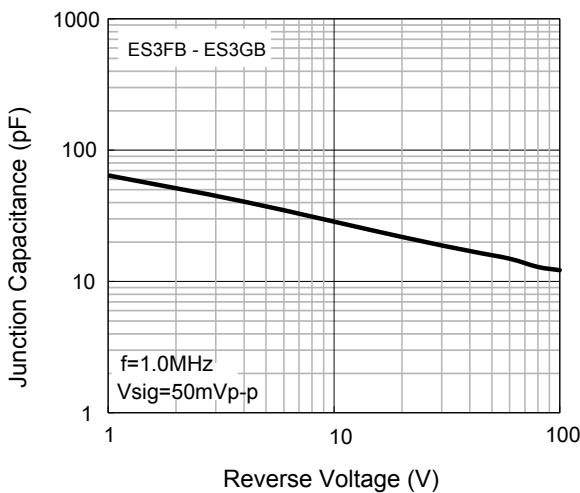


Figure 5. Typical Junction Capacitance

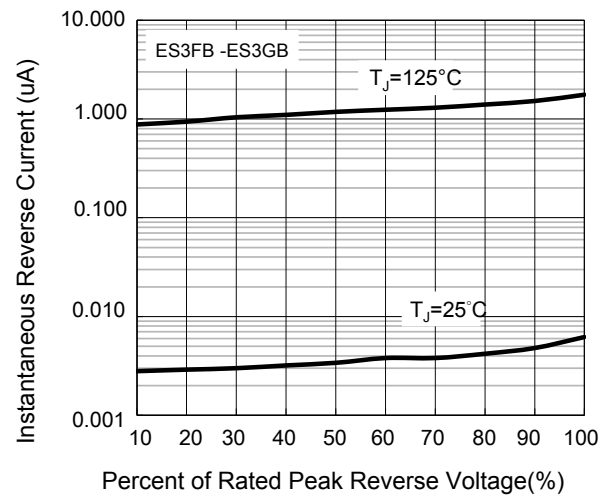


Figure 6. Typical Reverse Characteristics

Characteristics Curves ($T_A=25^\circ\text{C}$ unless otherwise noted)

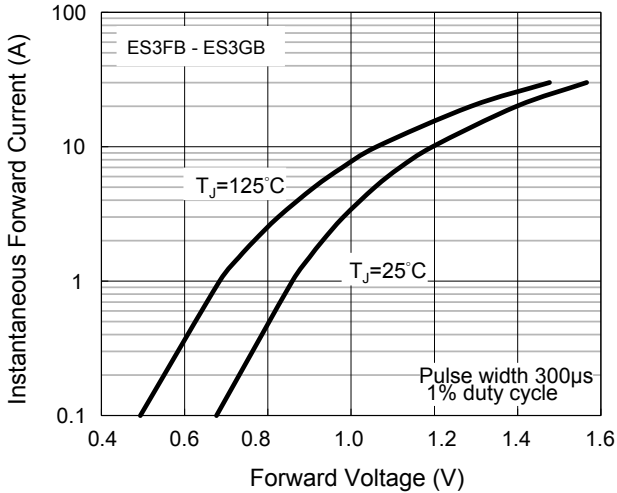


Figure 7. Typical Forward Characteristics

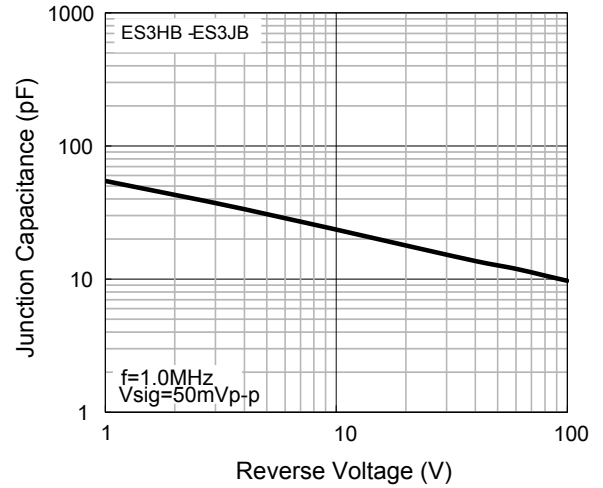


Figure 8. Typical Junction Capacitance

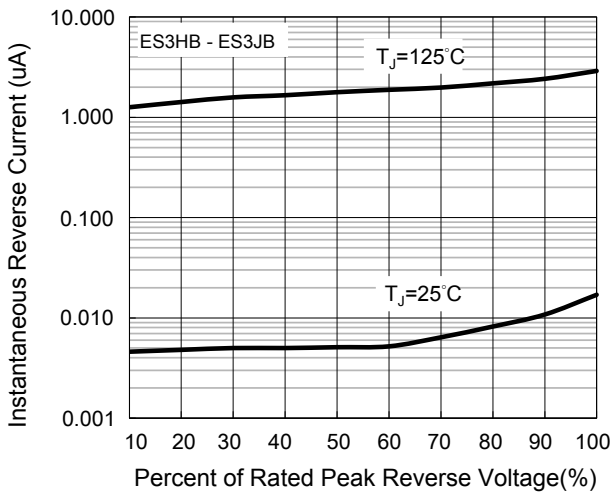


Figure 9. Typical Reverse Characteristics

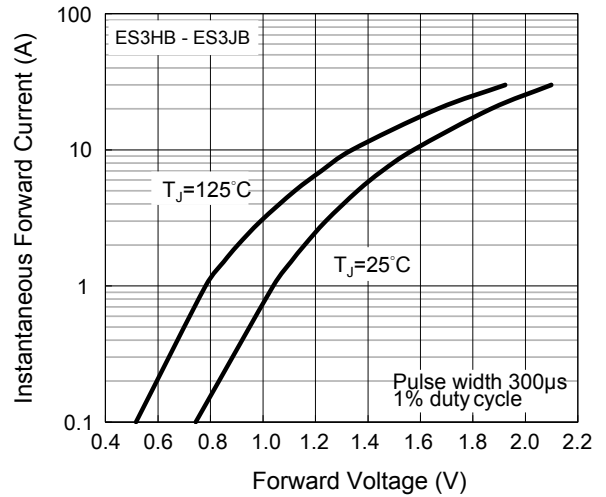
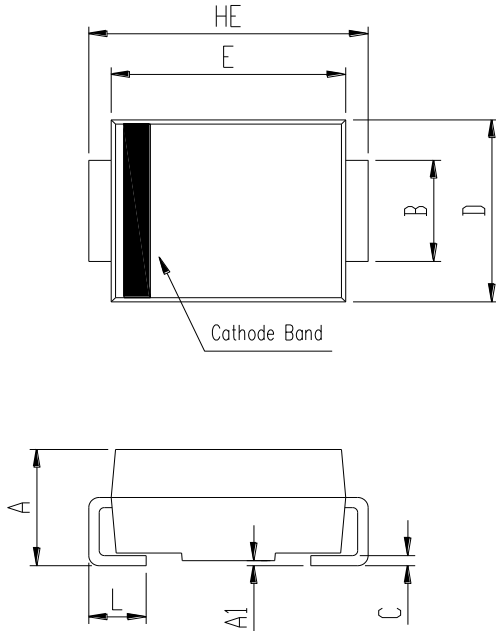


Figure 10. Typical Forward Characteristics

ES3AB thru ES3JB

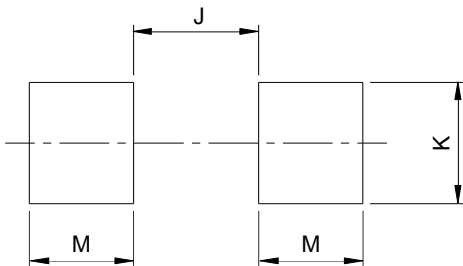
Super Fast Recovery Rectifiers
 Reverse Voltage 50V-600V Forward Current 3A

Package Outline Dimensions DO-214AA (SMB)



SMB (DO-214AA)				
DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.99	2.61	0.078	0.103
A1	0.00	0.20	0.000	0.008
B	1.93	2.08	0.076	0.082
C	0.15	0.31	0.006	0.012
D	3.48	3.73	0.137	0.147
E	4.25	4.75	0.167	0.187
HE	5.26	5.46	0.207	0.215
L	0.90	1.41	0.035	0.056

Recommended Pad Layout



SMB Recommended Pad Layout (Reference Only)				
DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.
J	-	2.60	-	0.102
K	2.20	-	0.087	-
M	1.80	-	0.071	-

Order Information

Device	Package	Marking	Carrier	Quantity
ES3AB	DO-214AA (SMB)	ES3AB	Tape & Reel	3,000 pcs / Reel
ES3BB	DO-214AA (SMB)	ES3BB	Tape & Reel	3,000 pcs / Reel
ES3CB	DO-214AA (SMB)	ES3CB	Tape & Reel	3,000 pcs / Reel
ES3DB	DO-214AA (SMB)	ES3DB	Tape & Reel	3,000 pcs / Reel
ES3FB	DO-214AA (SMB)	ES3FB	Tape & Reel	3,000 pcs / Reel
ES3GB	DO-214AA (SMB)	ES3GB	Tape & Reel	3,000 pcs / Reel
ES3HB	DO-214AA (SMB)	ES3HB	Tape & Reel	3,000 pcs / Reel
ES3JB	DO-214AA (SMB)	ES3JB	Tape & Reel	3,000 pcs / Reel

For more information, please contact us at: inquiry@goodarksemi.com