



Surface Mount Super Fast Recovery Rectifier Diode

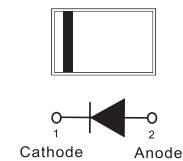
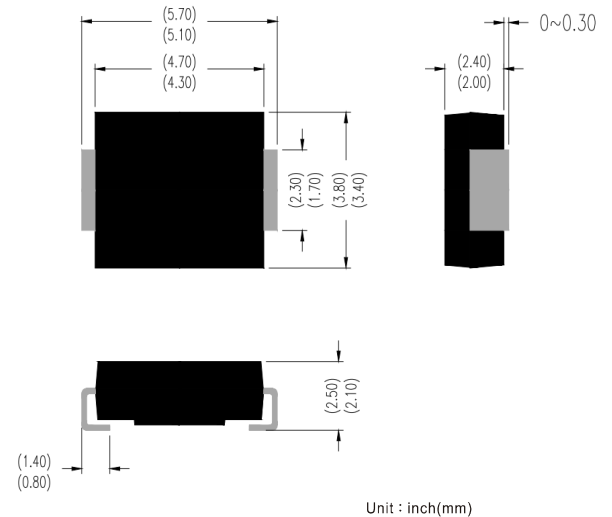
Features

- Glass passivated junction chip
- Ideal for automated placement
- Super fast recovery time for high efficiency
- High forward surge capability
- AEC-Q101 qualified
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260°C

Mechanical Data

- Package: DO-214AA (SMB)
- Polarity: Indicated by cathode band
- Epoxy: UL 94V-0 rate flame retardant
- Mounting Position: Any

DO-214AA (SMB)



Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	ES5ABQ	ES5BBQ	ES5CBQ	ES5DBQ	ES5FBQ	ES5GBQ	ES5JBQ	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	150	200	300	400	600	V
Maximum RMS voltage	V_{RMS}	35	70	105	140	210	280	420	V
Maximum DC blocking voltage	V_{DC}	50	100	150	200	300	400	600	V
Maximum average output rectified current	$I_{F(AV)}$	5.0							A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	150							A
Rating for fusing($t<8.3\text{ms}$)	I^2t	93.8							A^2sec
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150							$^{\circ}\text{C}$



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

Parameter	Symbol	ES5ABQ	ES5BBQ	ES5CBQ	ES5DBQ	ES5FBQ	ES5GBQ	ES5JBQ	Unit
Typical thermal resistance	$R_{\theta JA}^{1)}$	27							°C/W
	$R_{\theta JC}^{1)}$	8							
	$R_{\theta JL}^{1)}$	4							
	$R_{\theta JC}^{2)}$	5							

Notes:

1. The thermal resistance from junction to ambient, case or mount, mounted on P.C.B with 30×30mm copper pads, 2 OZ, FR4 PCB
2. The thermal resistance from junction to case, mounted on P.C.B with 30×30mm copper pads, 2 OZ, Aluminum substrate PCB

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

Parameter	Test Conditions	Symbol	ES5ABQ	ES5BBQ	ES5CBQ	ES5DBQ	ES5FBQ	ES5GBQ	ES5JBQ	Unit
Maximum instantaneous forward voltage	I _F =5.0A, T _a =25℃	V _F	0.95				1.4		1.7	Volts
	I _F =5.0A, T _a =125℃		1.25							
Maximum DC reverse current at rated DC blocking voltage	T _a =25℃	I _R	5.0							μA
	T _a =125℃		100							
Maximum reverse recovery time	I _F =0.5A, I _R =1.0A, I _R =0.25A	t _{rr}	35							nS
Typical junction capacitance	4.0 V, 1 MHz	C _J	60							pF



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

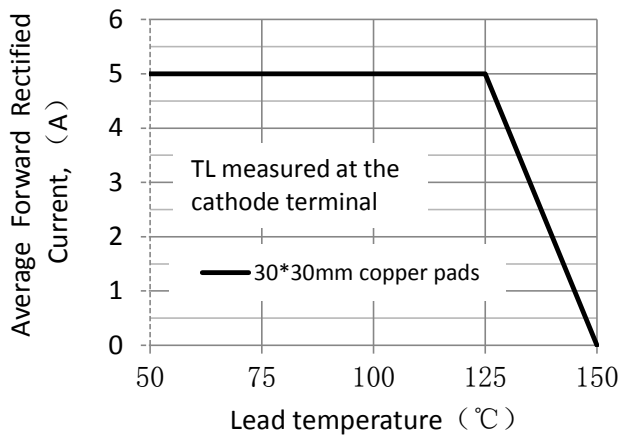


Figure 1. Forward Current Derating Curve

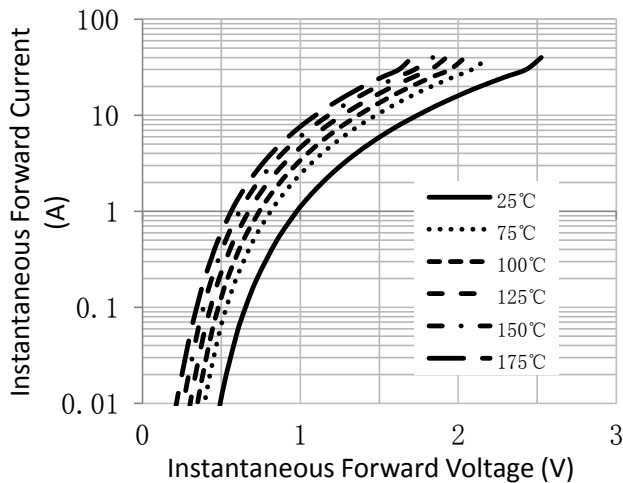


Figure 3. Typical Instantaneous Forward Characteristics

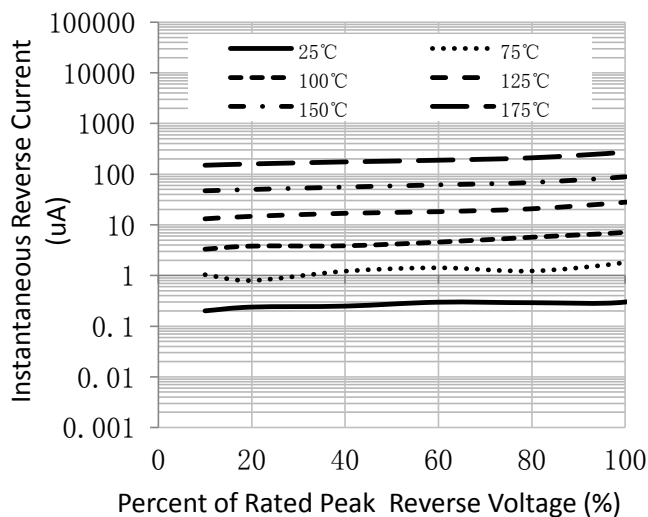


Figure 5. Typical Reverse Characteristics

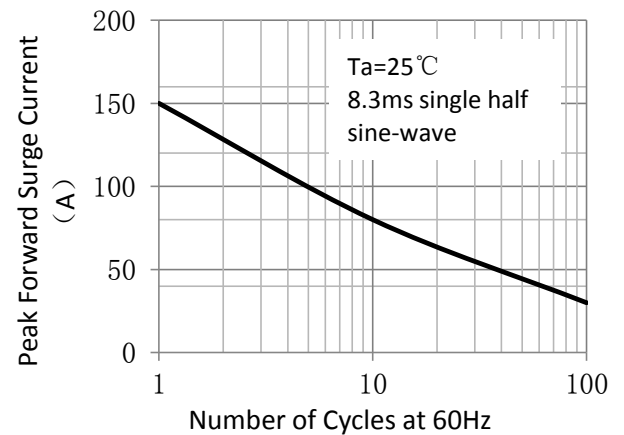


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

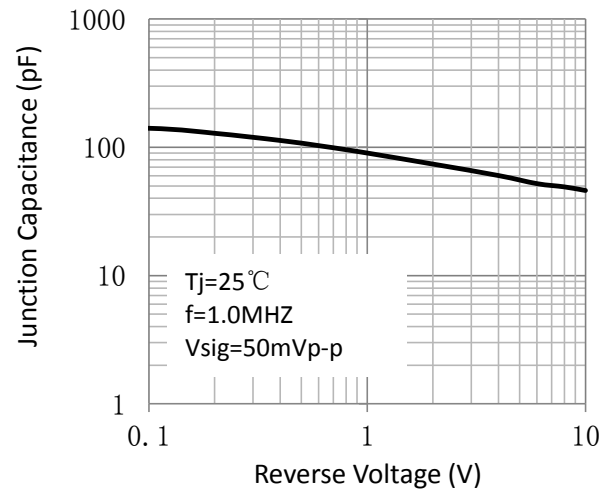


Figure 4. Typical Junction Capacitance