

Surface Mount Super Fast Recovery Rectifier Diode

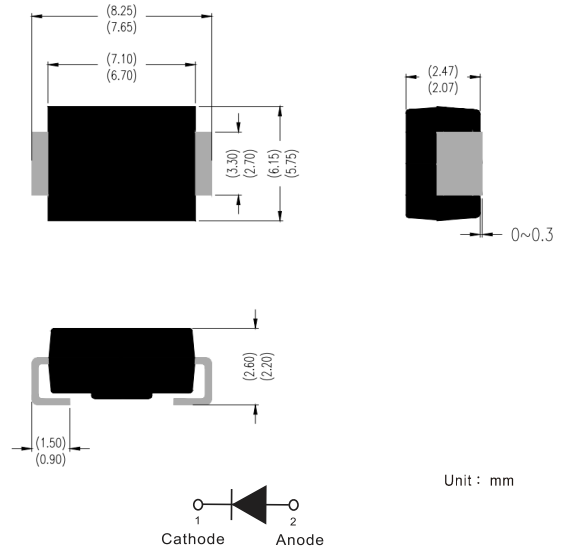
Features

- 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-214AB (SMC)
- **Polarity:** Color band denotes the cathode end
- **Epoxy:** UL 94V-0 rate flame retardant
- **Mounting Position:** Any

DO-214AB (SMC)



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

Parameter	Symbol	Unit	ES5A CQ	ES5B CQ	ES5C CQ	ES5D CQ	ES5F CQ	ES5G CQ	ES5H CQ	ES5J CQ
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	V	50	100	150	200	300	400	500	600
Maximum RMS Voltage	V_{RMS}	V	35	70	105	140	210	280	350	420
Maximum DC blocking Voltage	V_{DC}	V	50	100	150	200	300	400	500	600
Average Rectified Output Current @60Hz sine wave, Resistance load, TL (FIG.1)	I_O	A	5.0							
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave, 1 cycle, $T_j=25^\circ\text{C}$	I_{FSM}	A	150							
Forward Surge Current (Non-repetitive) @1ms, square wave, 1 cycle, $T_j=25^\circ\text{C}$			300							
Current squared time @1ms≤t≤8.3ms $T_j=25^\circ\text{C}$	I^2t	A ² s	94							
Storage Temperature	T_{stg}	°C	-55 ~ +150							
Junction Temperature	T_j	°C	-55 ~ +150							

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

Parameter	Symbol	Unit	ES5ACQ	ES5BCQ	ES5CCQ	ES5DCQ	ES5FCQ	ES5GCQ	ES5HCQ	ES5JCQ
Typical Thermal Resistance	$R_{\theta J-A}^{(1)}$	°C/W	50							
	$R_{\theta J-L}^{(1)}$		15							
	$R_{\theta J-C}^{(1)}$		12							

Note (1)

Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.6" x 0.6" (16 mm x 16 mm) copper pad areas



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

Parameter	Symbol	Unit	Test Conditions	ES5A CQ	ES5B CQ	ES5C CQ	ES5D CQ	ES5F CQ	ES5G CQ	ES5H CQ	ES5J CQ
Maximum instantaneous forward voltage	V _F	V	I _{FM} =5.0A	0.95				1.3		1.7	
Maximum reverse recovery time	t _{rr}	ns	I _F =0.5A, I _R =1.0A, I _{rr} =0.25A	35							
Maximum DC reverse current at rated DC blocking voltage	I _R	μA	T _J =25°C	5							
			T _J =125°C	100							
Typical junction capacitance	C _j	pF	Measured at 1MHz and Applied Reverse Voltage of 4.0 V.D.C	75				37		35	

Characteristics Curves

FIG.1: I_o - T_L Curve

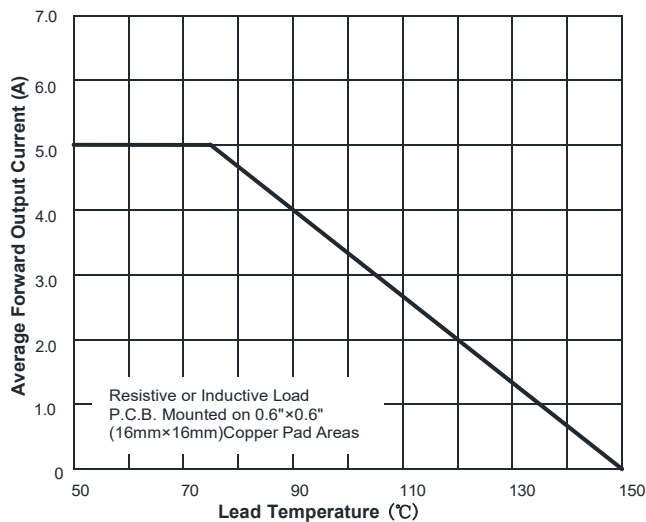


FIG.2: Forward Surge Current Capability

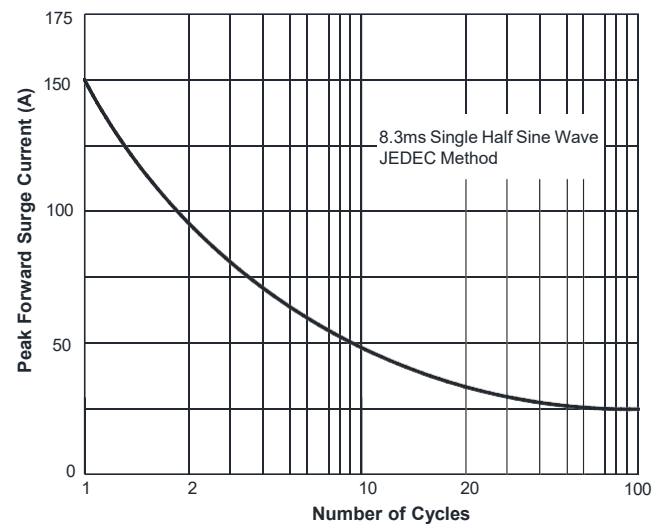


FIG.3: Forward Voltage

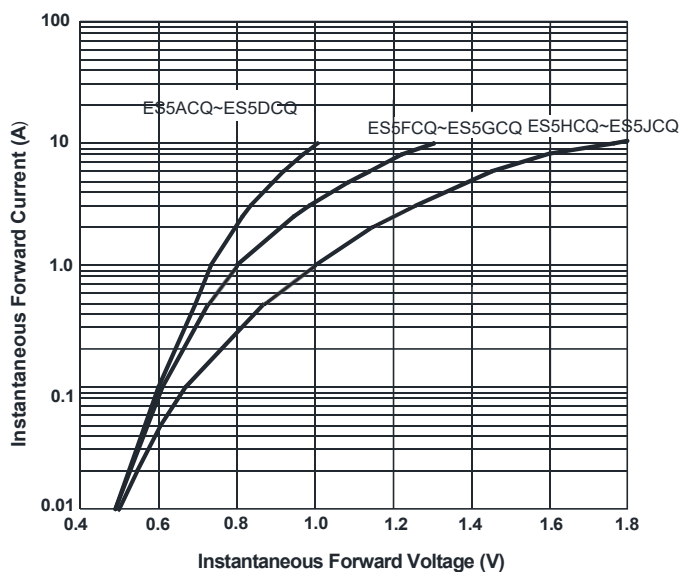


FIG.4: Typical Reverse Characteristics

