

Surface Mount Super Fast Recovery Rectifier Diode

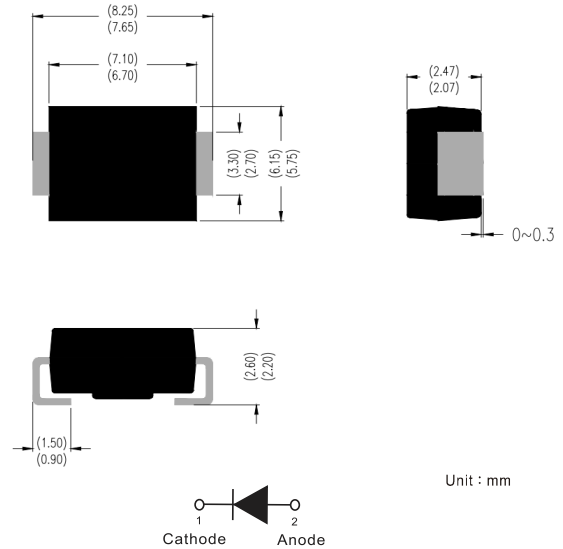
Features

- 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	ES3A CQ	ES3B CQ	ES3C CQ	ES3D CQ	ES3F CQ	ES3G CQ	ES3H CQ	ES3J CQ	ES3K CQ
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	V	50	100	150	200	300	400	500	600	800
Maximum RMS Voltage	V_{RMS}	V	35	70	105	140	210	280	350	420	560
Maximum DC blocking Voltage	V_{DC}	V	50	100	150	200	300	400	500	600	800
Average Rectified Output Current @60Hz sine wave, Resistance load, TL (FIG.1)	I_O	A	3.0								
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave, 1 cycle, $T_J=25^\circ\text{C}$	I_{FSM}	A	100								
Forward Surge Current (Non-repetitive) @1ms, square wave, 1 cycle, $T_J=25^\circ\text{C}$			200								
Current squared time @1ms≤t≤8.3ms	I^2t	A^2s	41.5								
$T_A=25^\circ\text{C}$ 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	ES3ACQ	ES3BCQ	ES3CCQ	ES3DCQ	ES3FCQ	ES3GCQ	ES3HCQ	ES3JCQ	ES3KCQ
Typical Thermal Resistance	$R_{\theta J-A}^{(1)}$	°C/W	50								
	$R_{\theta J-L}^{(1)}$		16								
	$R_{\theta J-C}^{(1)}$		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	ES3A CQ	ES3B CQ	ES3C CQ	ES3D CQ	ES3F CQ	ES3G CQ	ES3H CQ	ES3J CQ	ES3K CQ
Maximum instantaneous forward voltage	V _F	V	I _{FM} =3.0A	0.95				1.3		1.7		2.2
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℃	5								
			T _j =125℃	100								
Typical junction capacitance	C _j	pF	Measured at 1MHz and Applied Reverse Voltage of 4.0 V.D.C	60				35		29		21

Characteristics Curves

FIG1: I_o - T_L Curve

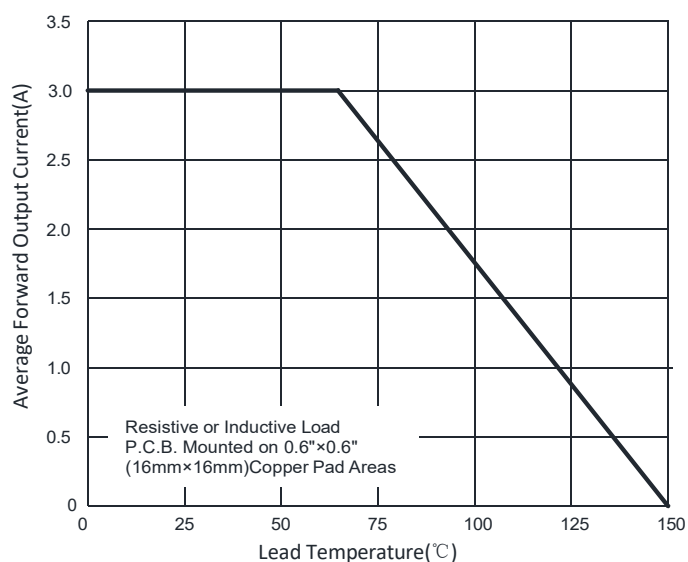


FIG2: Surge Forward Current Capability

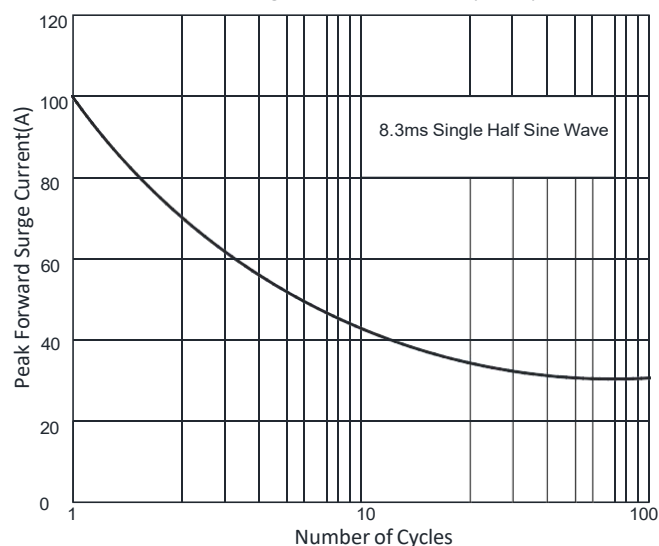


FIG3: Typical Forward Voltage

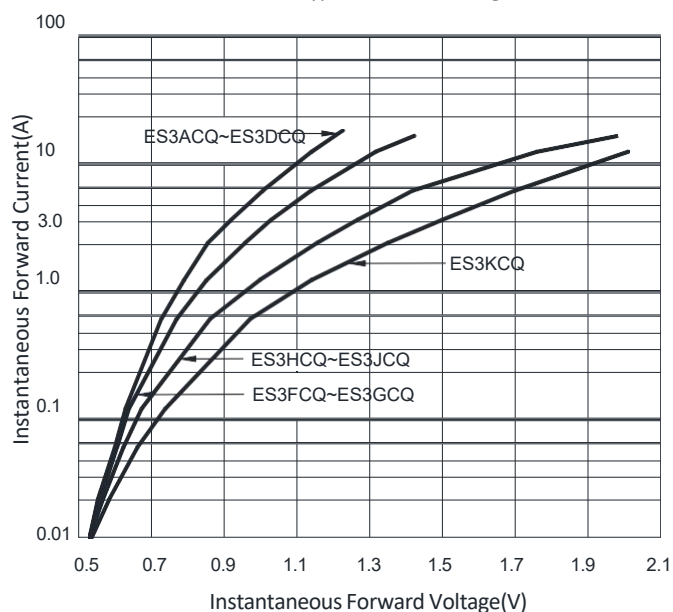


FIG4: Typical Reverse Characteristics

