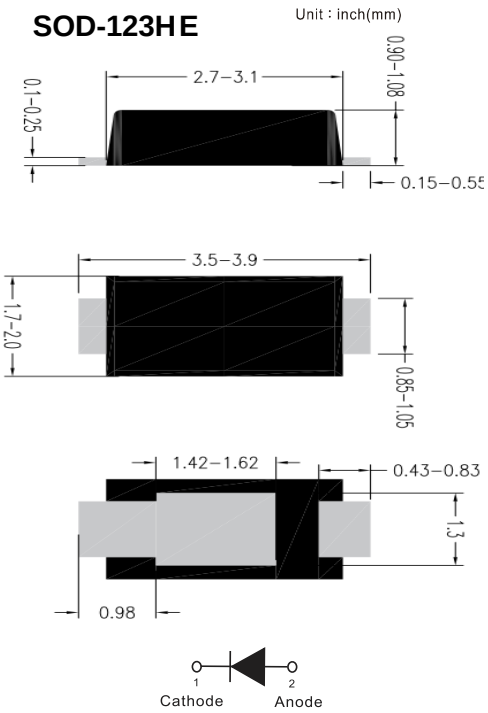
Surface Mount Super Fast Recovery Rectifier Diode

Features

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- Super fast switching 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:** SOD-123HE
- **Terminals**: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity**: Cathode line denotes the cathode end



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

Parameter	Symbol	Unit	ES2A HEQ	ES2B HEQ	ES2C HEQ	ES2D HEQ	ES2F HEQ	ES2G HEQ	ES2H HEQ	ES2J HEQ	ES2K HEQ
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	2.0								
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave,1 cycle, Tj=25℃	I_{FSM}	A	40								
Forward Surge Current (Non-repetitive) @1ms, square wave, 1 cycle, Tj=25℃			100								
Current squared time @1ms≤t≤8.3ms Tj=25℃	I^2t	A^2s	10.375								
Storage temperature	T_{stg}	℃	-55 ~ +150								
Junction temperature	Tj	℃	-55 ~ +150								

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

Parameter	Symbol	Unit	Test Conditions	ES2A HEQ	ES2B HEQ	ES2C HEQ	ES2D HEQ	ES2H HEQ	ES2G HEQ	ES2H HEQ	ES2J HEQ	ES2K HEQ
Maximum instantaneous forward voltage	V_F	V	I_{FM}=2.0A	1.0				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	Tj =25℃	5.0								
			Tj =125℃	100								
Typical junction capacitance	Cj	pF	Measured at 1MHz and Applied Reverse Voltage of 4.0 V.D.C	30				16		12		12

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

Parameter	Symbol	Unit	ES2AHEQ	ES2BHEQ	ES2CHEQ	ES2DHEQ	ES2FHEQ	ES2GHEQ	ES2HHEQ	ES2JHEQ	ES2KHEQ
Typical Thermal resistance	$R_{\theta J-}$ (1) A	℃/W	90								
	$R_{\theta J-}$ (1) L		30								

Note:
(1) Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas

Characteristics Curves

FIG1：Io-TL Curve

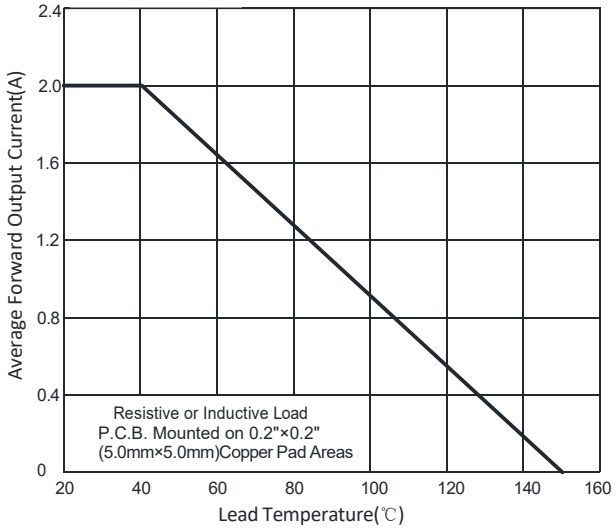


FIG2：Surge Forward Current Capability

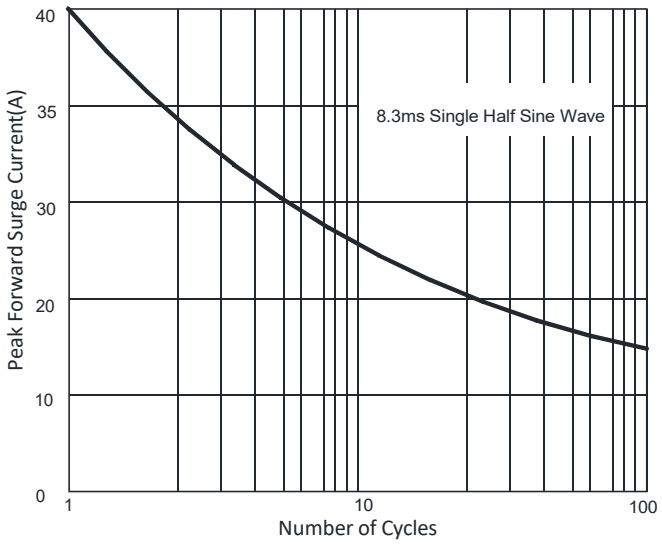


FIG3: Typical Forward Voltage

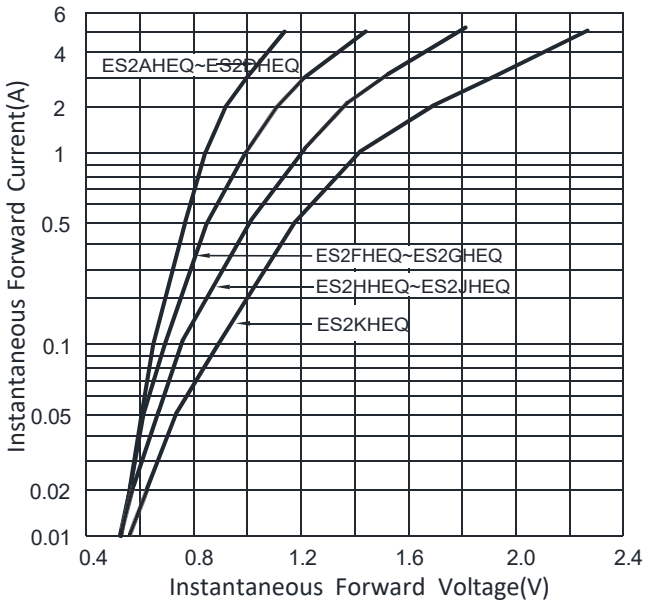


FIG4:Typical Reverse Characteristics

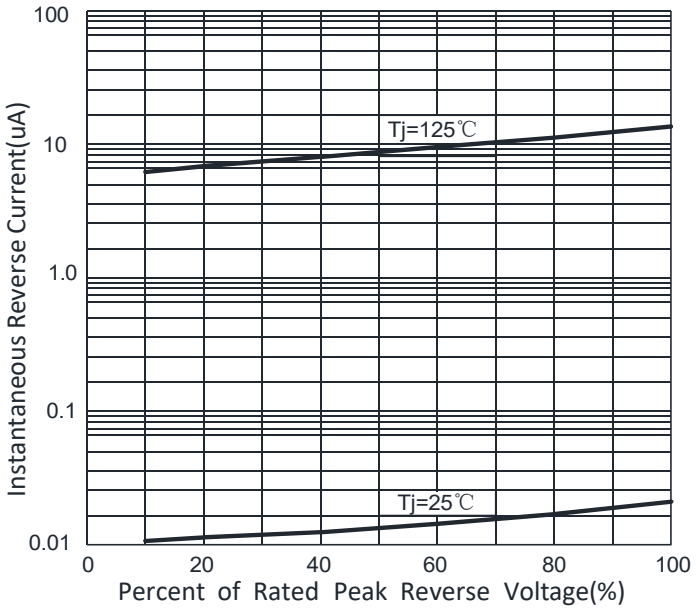


FIG.5: Diagram of circuit and Testing wave form of reverse recovery time