

ES3A THRU ES3M

Surface Mount Super Fast Recovery Rectifiers

Reverse Voltage - 50 to 1000 V

Forward Current - 3 A

Features

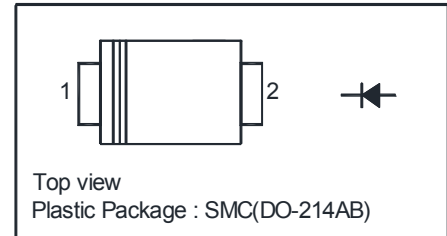
- High current capability
- High surge current capability
- High reliability
- Low reverse current
- Low forward voltage drop
- Super fast recovery time

Mechanical Data

- Case: DO-214AB (SMC) molded plastic body
- Epoxy: UL 94V-0 rate flame retardant
- Lead: Lead formed for surface mount
- Mounting Position: Any

PINNING

PIN	DESCRIPTION
1	Cathode
2	Anode



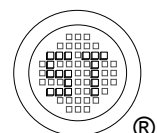
Maximum Ratings and Electrical Characteristics

Ratings at 25 °C ambient temperature unless otherwise specified. Single phase, half-wave, 60 Hz, resistive or inductive load, for capacitive load derate current by 20%.

Parameter	Symbols	ES3A	ES3B	ES3C	ES3D	ES3F	ES3G	ES3J	ES3K	ES3M	Units
	Marking	ES3A	ES3B	ES3C	ES3D	ES3F	ES3G	ES3J	ES3K	ES3M	-
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	50	100	150	200	300	400	600	800	1000	V
Maximum RMS Voltage	V_{RMS}	35	70	105	140	210	280	420	560	700	V
Maximum DC Blocking Voltage	V_{DC}	50	100	150	200	300	400	600	800	1000	V
Maximum Average Forward Current	$I_{F(AV)}$	3									A
Peak Peak Forward Surge Current, 8.3 ms Single half sine-wave Superimposed on Rated Load (JEDEC Method)	I_{FSM}	100							75		A
Maximum Forward Voltage at $I_F = 3$ A	V_F	0.95				1.3		1.7	3.6		V
Maximum DC Reverse Current at Rated DC Blocking Voltage $T_a = 25^\circ\text{C}$ $T_a = 100^\circ\text{C}$	I_R	10 500									μA
Typical Junction Capacitance at $V_R = 4$ V, $f = 1$ MHz	C_J	40							60		pF
Maximum Reverse Recovery Time ¹⁾	t_{rr}	35									ns
Typical Thermal Resistance ²⁾	$R_{\theta JA}$ $R_{\theta JC}$	40 16							35 13		$^\circ\text{C/W}$
Operating Junction Temperature Range	T_j	- 55 to + 150									$^\circ\text{C}$
Storage Temperature Range	T_{Stg}	- 55 to + 150									$^\circ\text{C}$

¹⁾ Measured with $I_F = 0.5$ A, $I_R = 1$ A, $I_{rr} = 0.25$ A.

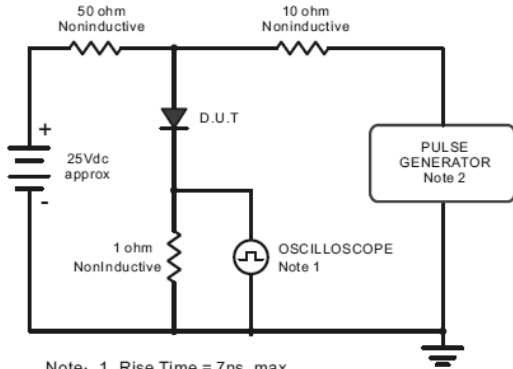
²⁾ P.C.B. mounted with 2.0" X 2.0" (5 X 5 cm) copper pad areas.



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Electrical characteristic curves

Fig.1 Reverse Recovery Time Characteristic And Test Circuit Diagram



Note: 1. Rise Time = 7ns, max.
Input Impedance = 1megohm,22pF.
2. Rises Time =10ns, max.
Source Impedance = 50 ohms.

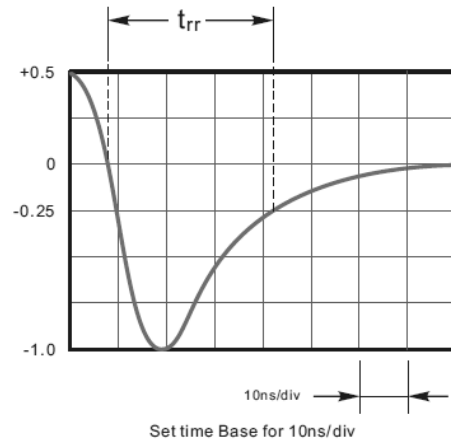


Fig.2 Maximum Average Forward Current Rating

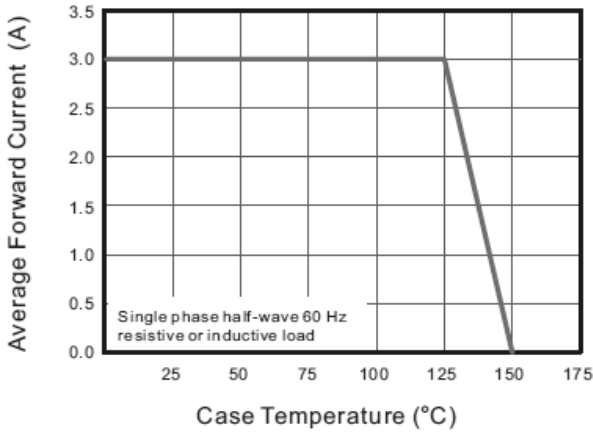


Fig.3 Typical Reverse Characteristics

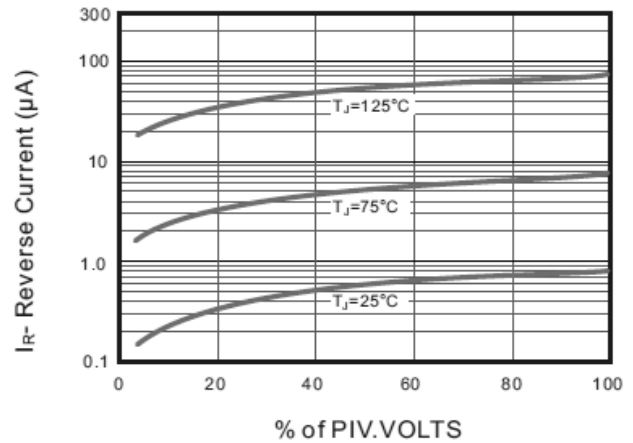


Fig.4 Typical Forward Characteristics

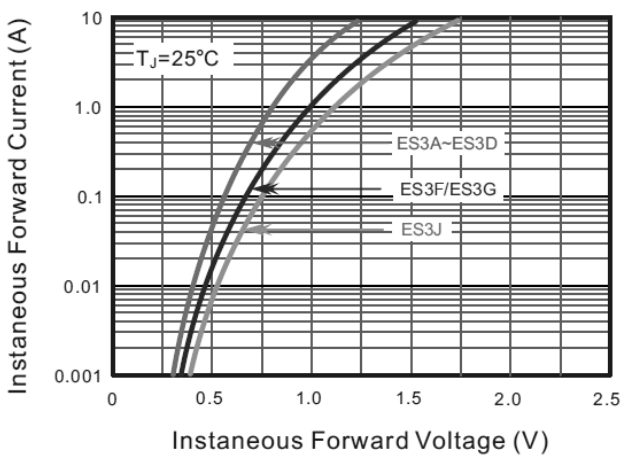
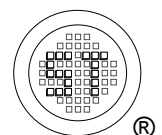
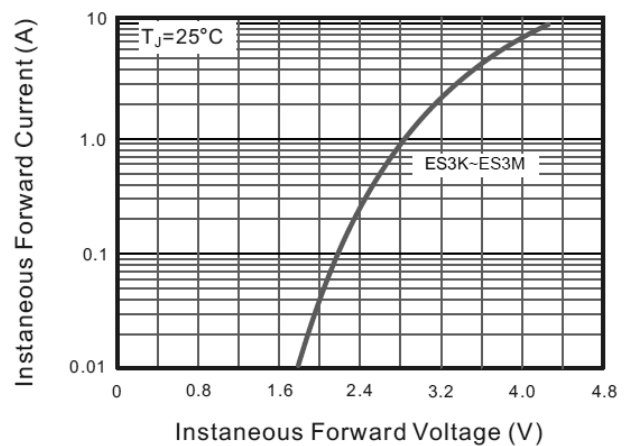


Fig.5 Typical Forward Characteristics



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Electrical characteristic curves

Fig.6 Maximum Non-Repetitive Peak Forward Surge Current

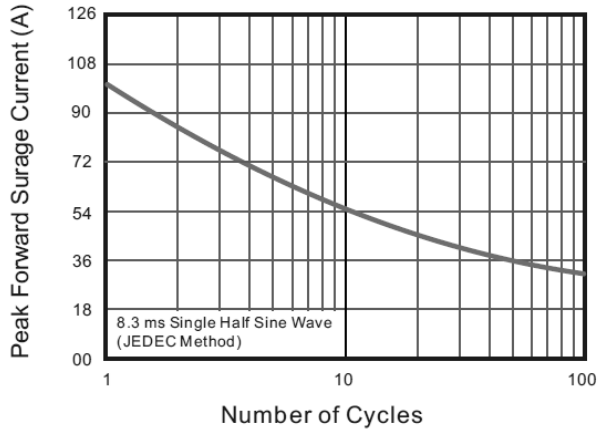
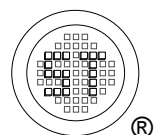
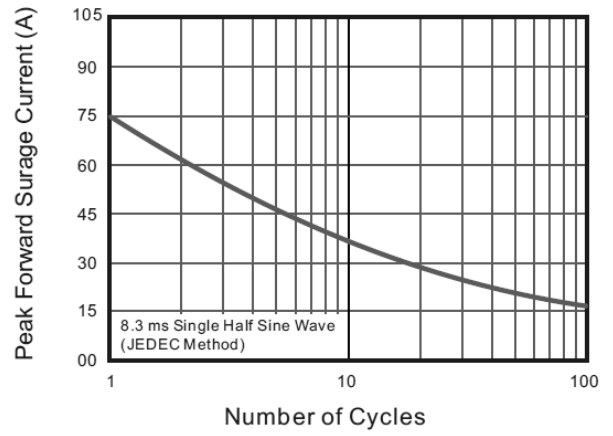


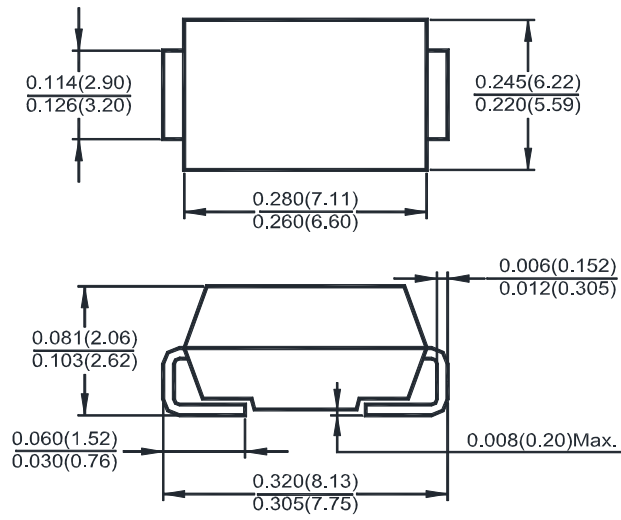
Fig.7 Maximum Non-Repetitive Peak Forward Surge Current



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Package Outline Dimensions in inches (millimeters)

SMC(DO-214AB)



Marking information

" **** " = Part No.

" III " = Cathode line

Font type: Arial

