

# ES3A THRU ES3M

## SURFACE MOUNT SUPER FAST RECTIFIERS

Reverse Voltage – 50 to 1000 V

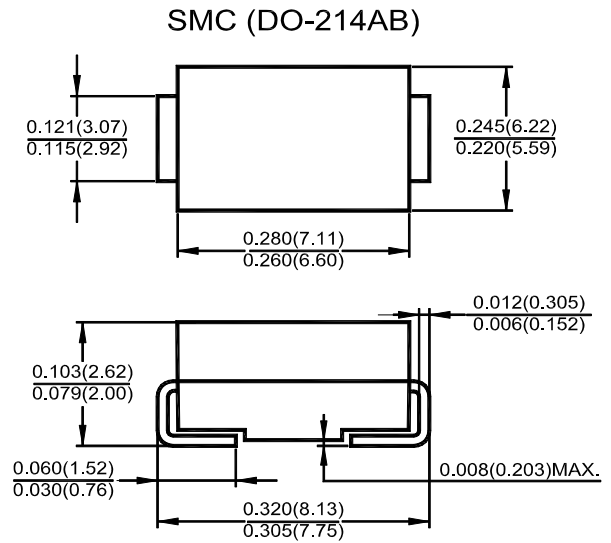
Forward Current – 3 A

### 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



Dimensions in inches and (millimeters)

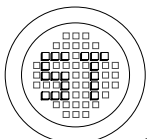
### Maximum Ratings and Electrical Characteristics

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	
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									A	
Maximum Forward Voltage at $I_F = 3$ A	$V_F$	0.95			1.3			1.7			V	
Maximum DC Reverse Current $T_A = 25$ °C at Rated DC Blocking Voltage $T_A = 100$ °C	$I_R$	10					500					μA
Maximum Reverse Recovery Time <sup>1)</sup>	$t_{rr}$	35									ns	
Typical Junction Capacitance <sup>2)</sup>	$C_J$	50				40						pF
Junction Temperature Range	$T_j$	- 55 to + 150									°C	
Storage temperature range	$T_s$	- 55 to + 150									°C	

<sup>1)</sup> Reverse recovery test conditions:  $I_F = 0.5$  A,  $I_R = 1$  A,  $I_{rr} = 0.25$  A

<sup>2)</sup> Measured at 1 MHz and applied reverse voltage of 4 V D.C.



**SEMTECH ELECTRONICS LTD.**

(Subsidiary of Semtech International Holdings Limited, a company listed on the Hong Kong Stock Exchange, Stock Code: 724)



ISO/TS 16949 : 2002  
Certificate No. 05103



ISO 14001:2004  
Certificate No. 7116



ISO 9001:2000  
Certificate No. 0506098

Dated : 01/06/2006 E

# ES3A THRU ES3M

FIG.1 - REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

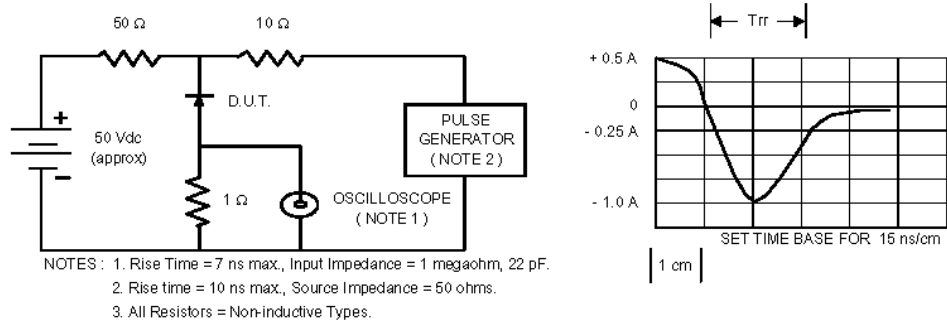


FIG.2 - DERATING CURVE FOR OUTPUT RECTIFIED CURRENT

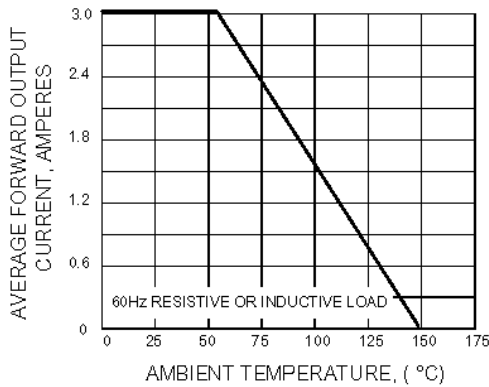


FIG.3 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

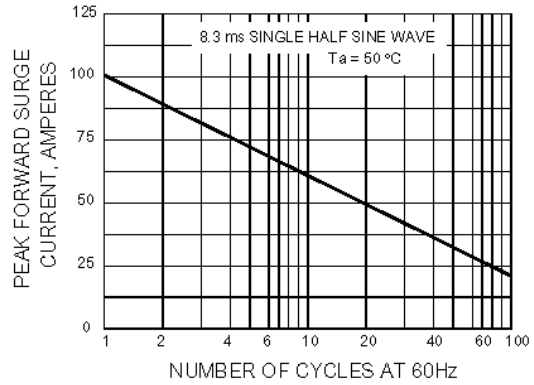


FIG.4 - TYPICAL FORWARD CHARACTERISTICS

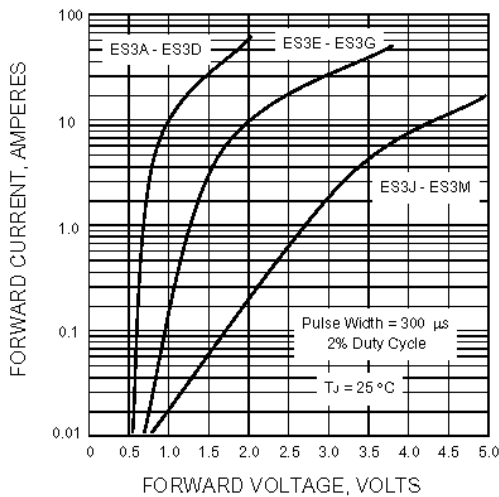
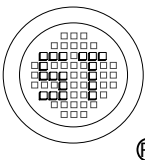
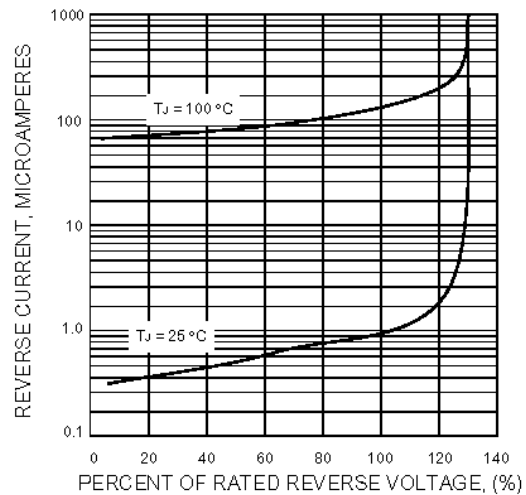


FIG.5 - TYPICAL REVERSE CHARACTERISTICS



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