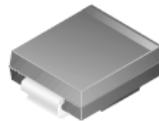


# ES3A - ES3J

## Fast Rectifiers

### Features

- For surface mount applications.
- Glass passivated junction.
- Low profile package.
- Easy pick and place.
- Built-in strain relief.
- Superfast recovery times for high efficiency.



**SMC/DO-214AB**  
Color Band Denotes Cathode

### Absolute Maximum Ratings \* T<sub>a</sub> = 25°C unless otherwise noted

Symbol	Parameter	Value					Units
		ES3A	ES3B	ES3C	ES3D	ES3J	
V <sub>RRM</sub>	Maximum Repetitive Reverse Voltage	50	100	150	200	600	V
I <sub>F(AV)</sub>	Average Rectified Forward Current, .375" lead length @ T <sub>A</sub> =75°C	3.0					A
I <sub>FSM</sub>	Non-repetitive Peak Forward Surge Current 8.3 ms Single Half-Sine-Wave	100					A
T <sub>J</sub> , T <sub>STG</sub>	Operating Junction and Storage Temperature Range	-50 to +150					°C
P <sub>D</sub>	Power Dissipation	1.66					W

\* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

### Thermal Characteristics

Symbol	Parameter	Value	Units
R <sub>θJA</sub>	Thermal Resistance, Junction to Ambient *	47	°C/W
R <sub>θJL</sub>	Thermal Resistance, Junction to Lead *	12	°C/W

\* Device mounted on FR-4 PCB 0.013 mm.

### Electrical Characteristics T<sub>C</sub> = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V <sub>F</sub>	Forward Voltage @ I <sub>F</sub> = 3.0 A	0.95	1.7 V
T <sub>rr</sub>	Reverse Recovery Time I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1.0 A, I <sub>RR</sub> = 0.25 A	20	35 ns
I <sub>R</sub>	Reverse Current @ rated V <sub>R</sub> T <sub>A</sub> = 25°C T <sub>A</sub> = 100°C	10 500	uA
C <sub>T</sub>	Total Capacitance V <sub>R</sub> = 4.0 V, f = 1.0 MHz	45	pF

### Typical Performance Characteristics

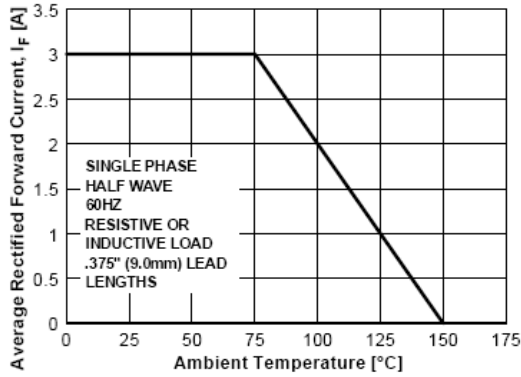


Figure 1. Forward Current Deration Curve

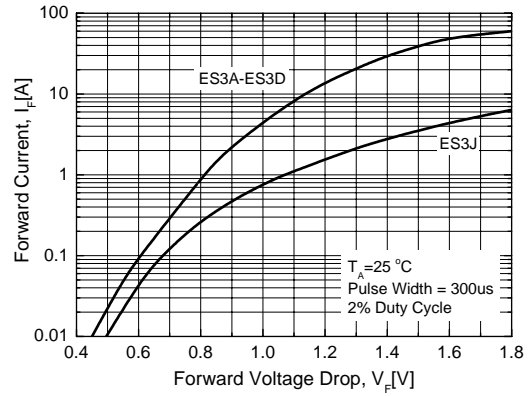


Figure 2. Forward Voltage Characteristics

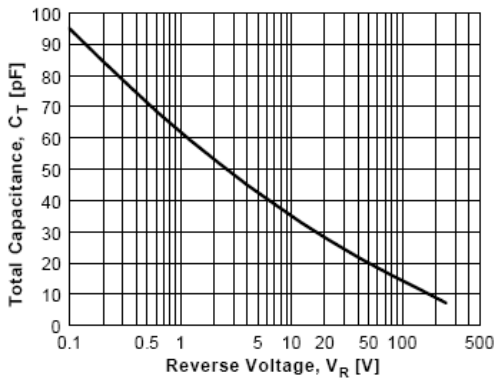


Figure 3. Total Capacitance

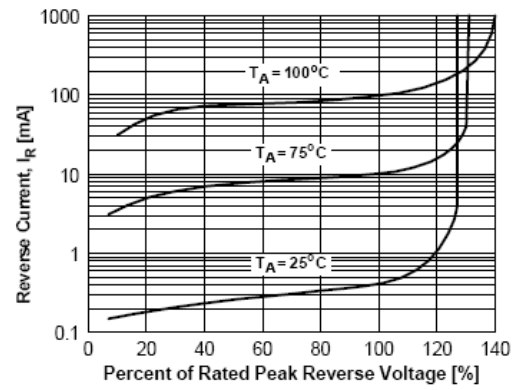
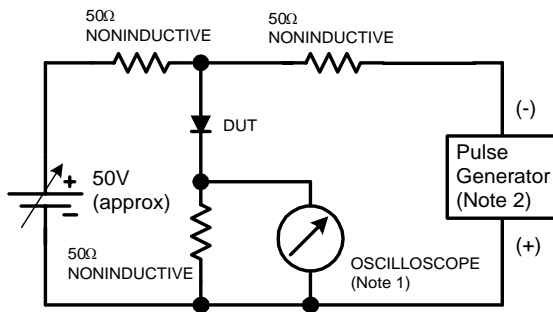
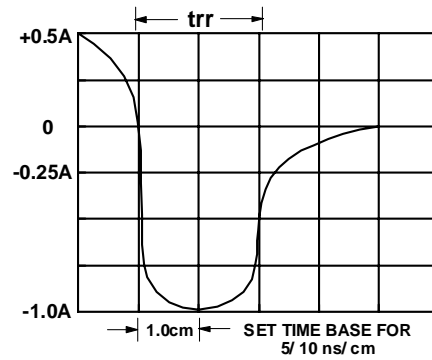


Figure 4. Reverse Current vs Reverse Voltage



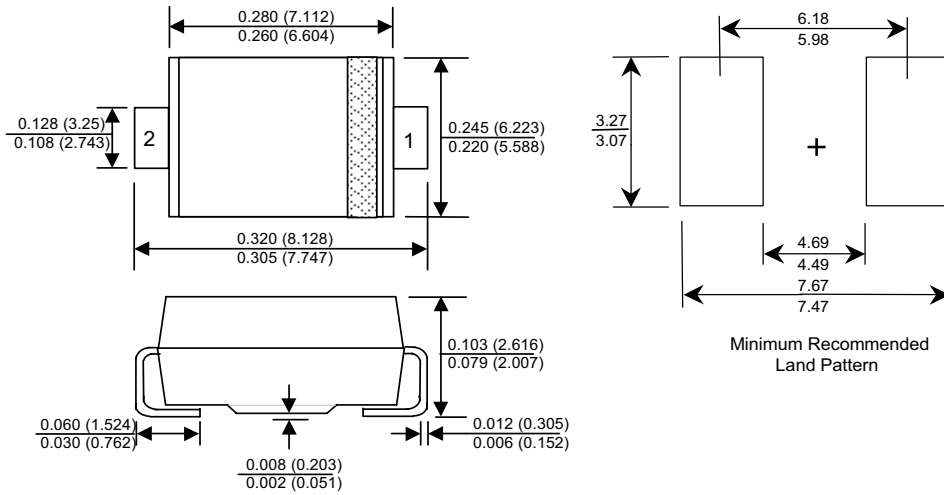
**NOTES:**

1. Rise time = 7.0 ns max; Input impedance = 1.0 megaohm 22 pf.
2. Rise time = 10 ns max; Source impedance = 50 ohms.



Package Dimensions

SMC / DO - 214AB



Dimensions in Inches(Millimeters)

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Build it Now™	HiSeC™	OPTOPLANAR™	Stealth™	
CoolFET™	I <sup>2</sup> C™	PACMAN™	SuperFET™	
CROSSVOLT™	i-Lo™	POPT™	SuperSOT™-3	
DOMETM	ImpliedDisconnect™	Power247™	SuperSOT™-6	
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EnSigna™	LittleFET™	PowerTrench®	TCM™	
FACT®	MICROCOUPLER™	QFET®	TinyBoost™	
FAST®	MicroFET™	QS™	TinyBuck™	
FASTr™	MicroPak™	QT Optoelectronics™	TinyPWM™	
FPS™	MICROWIRE™	Quiet Series™	TinyPower™	
FRFET™	MSX™	RapidConfigure™	TinyLogic®	
	MSXPro™	RapidConnect™	TINYOPTO™	
Across the board. Around the world.™		μSerDes™	TruTranslation™	
The Power Franchise®		ScalarPump™	UHC®	
Programmable Active Droop™				

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No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
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