

### Is Now Part of



# ON Semiconductor®

# To learn more about ON Semiconductor, please visit our website at www.onsemi.com

Please note: As part of the Fairchild Semiconductor integration, some of the Fairchild orderable part numbers will need to change in order to meet ON Semiconductor's system requirements. Since the ON Semiconductor product management systems do not have the ability to manage part nomenclature that utilizes an underscore (\_), the underscore (\_) in the Fairchild part numbers will be changed to a dash (-). This document may contain device numbers with an underscore (\_). Please check the ON Semiconductor website to verify the updated device numbers. The most current and up-to-date ordering information can be found at <a href="www.onsemi.com">www.onsemi.com</a>. Please email any questions regarding the system integration to Fairchild <a href="guestions@onsemi.com">guestions@onsemi.com</a>.

ON Semiconductor and the ON Semiconductor logo are trademarks of Semiconductor Components Industries, LLC dba ON Semiconductor or its subsidiaries in the United States and/or other countries. ON Semiconductor owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of ON Semiconductor's product/patent coverage may be accessed at www.onsemi.com/site/pdf/Patent-Marking.pdf. ON Semiconductor reserves the right to make changes without further notice to any products herein. ON Semiconductor makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does ON Semiconductor assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using ON Semiconductor products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by ON Semiconductor. "Typical" parameters which may be provided in ON Semiconductor data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. ON Semiconductor does not convey any license under its patent rights nor the rights of others. ON Semiconductor products are not designed, intended, or authorized for use as a critical component in life support systems or any EDA Class 3 medical devices or medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use ON Semiconductor products for any such unintended or unauthorized application, Buyer shall indemnify and hold ON Semiconductor and its officer



June 2016

# 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



# **Ordering Information**

Part Number	Top Mark	Package	Packing Method
ES3A	ES3A	DO-214AB (SMC)	Tape and Reel
ES3B	ES3B	DO-214AB (SMC)	Tape and Reel
ES3C	ES3C	DO-214AB (SMC)	Tape and Reel
ES3D	ES3D	DO-214AB (SMC)	Tape and Reel
ES3J	ES3J	DO-214AB (SMC)	Tape and Reel

### **Absolute Maximum Ratings**

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at  $T_A = 25^{\circ}\text{C}$  unless otherwise noted.

Symbol	Parameter		Value				
			ES3B	ES3C	ES3D	ES3J	Unit
$V_{RRM}$	Maximum Repetitive Reverse Voltage	50	100	150	200	600	V
I <sub>F(AV)</sub>	Average Rectified Forward Current, .375" Lead Length at T <sub>A</sub> = 75°C	3.0				Α	
I <sub>FSM</sub>	Non-Repetitive Peak Forward Surge Current 8.3 ms Single Half-Sine Wave	100			Α		
$T_{J_i}T_{STG}$	Operating Junction and Storage Temperature Range	-50 to +150			°C		

# **Thermal Characteristics**

Values are at  $T_A = 25$ °C unless otherwise noted.

Symbol	Р	Value	Unit		
$P_{D}$	Power Dissipation		1.66	W	
$R_{ heta JA}$	Thermal Resistance, Junction to Ambient <sup>(1)</sup>	Maximum Land Pattern: 16 x 16 mm	47	°C/W	
		Minimum Land Pattern: 2.6 x 3.2 mm	125	C/VV	
$R_{ heta JL}$	Thermal Resistance,	Maximum Land Pattern: 16 x 16 mm	12	°C/W	
		Minimum Land Pattern: 2.6 x 3.2 mm	16	C/VV	

#### Note:

1. Device mounted on FR-4 PCB 0.013 mm.

# **Electrical Characteristics**

Values are at  $T_A = 25$ °C unless otherwise noted.

Symbol	Parameter	Conditions		Value				Unit	
Syllibol	i arameter			ES3A	ES3B	ES3C	ES3D	ES3J	Onne
$V_{F}$	Maximum Forward Voltage	I <sub>F</sub> = 3.0 A 0.95			1.70	V			
t <sub>rr</sub> Re	Reverse Recovery Time	$I_F = 0.5 A,$	Тур.		:0		35		
		I <sub>R</sub> = 1.0 A, I <sub>RR</sub> = 0.25 A <b>Max.</b>		30				45	ns
I_	I <sub>R</sub> Maximum Reverse Current at Rated V <sub>R</sub>	T <sub>A</sub> = 25°C		10				μА	
'R		$T_A = 100^{\circ}C$ 500					μΛ		
C <sub>T</sub>	Total Capacitance	V <sub>R</sub> = 4.0 V, f = 1.0 MHz				45			pF

### **Typical Performance Characteristics**

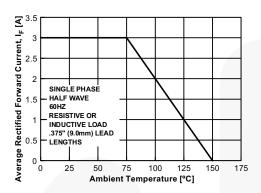


Figure 1. Forward Current Derating Curve

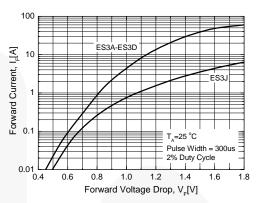


Figure 2. Foward Voltage Characteristics

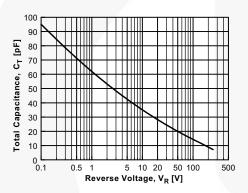


Figure 3. Total Capacitance

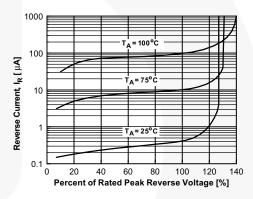
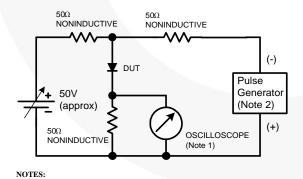


Figure 4. Reverse Current vs. Reverse Voltage



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

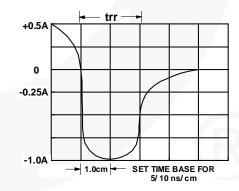
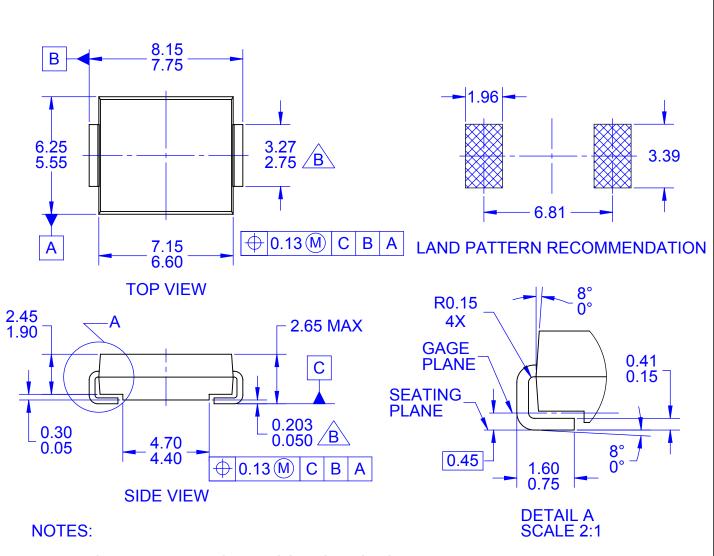


Figure 5. Reverse Recovery Time Characteristic and Test Circuit Diagram



- A. EXCEPT WHERE NOTED, CONFORMS TO JEDEC DO-214, VARIATION AB
- B DOES NOT COMPLY TO JEDEC STD. VALUE C. ALL DIMENSIONS ARE IN MILLIMETERS
- D. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH, AND TIE BAR PROTRUSIONS.
- E. DIMENSIONS AND TOLERANCING AS PER ASME Y14.5-2009
- F. LAND PATTERN STANDARD: DIOM7957X241M
- G. DRAWING FILENAME: MKT-DO214ABrev2



ON Semiconductor and in are trademarks of Semiconductor Components Industries, LLC dba ON Semiconductor or its subsidiaries in the United States and/or other countries. ON Semiconductor owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of ON Semiconductor's product/patent coverage may be accessed at <a href="www.onsemi.com/site/pdt/Patent-Marking.pdf">www.onsemi.com/site/pdt/Patent-Marking.pdf</a>. ON Semiconductor reserves the right to make changes without further notice to any products herein. ON Semiconductor assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using ON Semiconductor products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by ON Semiconductor. "Typical" parameters which may be provided in ON Semiconductor data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. ON Semiconductor does not convey any license under its patent rights nor the rights of others. ON Semiconductor products are not designed, intended, or authorized for use as a critical component in life support systems or any FDA Class 3 medical devices or medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use ON Semiconductor products for any such unintended or unauthorized application, Buyer shall indemnify and hold ON Semiconductor and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and exp

#### **PUBLICATION ORDERING INFORMATION**

#### LITERATURE FULFILLMENT:

Literature Distribution Center for ON Semiconductor 19521 E. 32nd Pkwy, Aurora, Colorado 80011 USA Phone: 303-675-2175 or 800-344-3860 Toll Free USA/Canada Fax: 303-675-2176 or 800-344-3867 Toll Free USA/Canada Email: orderlit@onsemi.com N. American Technical Support: 800–282–9855 Toll Free USA/Canada
Europe, Middle East and Africa Technical Support: Phone: 421 33 790 2910
Japan Customer Focus Center
Phone: 81–3–5817–1050

ON Semiconductor Website: www.onsemi.com

Order Literature: http://www.onsemi.com/orderlit

For additional information, please contact your local Sales Representative

# **Mouser Electronics**

**Authorized Distributor** 

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

**ON Semiconductor:** 

ES3C ES3C\_Q



Мы молодая и активно развивающаяся компания в области поставок электронных компонентов. Мы поставляем электронные компоненты отечественного и импортного производства напрямую от производителей и с крупнейших складов мира.

Благодаря сотрудничеству с мировыми поставщиками мы осуществляем комплексные и плановые поставки широчайшего спектра электронных компонентов.

Собственная эффективная логистика и склад в обеспечивает надежную поставку продукции в точно указанные сроки по всей России.

Мы осуществляем техническую поддержку нашим клиентам и предпродажную проверку качества продукции. На все поставляемые продукты мы предоставляем гарантию.

Осуществляем поставки продукции под контролем ВП МО РФ на предприятия военно-промышленного комплекса России, а также работаем в рамках 275 ФЗ с открытием отдельных счетов в уполномоченном банке. Система менеджмента качества компании соответствует требованиям ГОСТ ISO 9001.

Минимальные сроки поставки, гибкие цены, неограниченный ассортимент и индивидуальный подход к клиентам являются основой для выстраивания долгосрочного и эффективного сотрудничества с предприятиями радиоэлектронной промышленности, предприятиями ВПК и научноисследовательскими институтами России.

С нами вы становитесь еще успешнее!

#### Наши контакты:

Телефон: +7 812 627 14 35

Электронная почта: sales@st-electron.ru

Адрес: 198099, Санкт-Петербург,

Промышленная ул, дом № 19, литера Н,

помещение 100-Н Офис 331