

Diode Ultra Fast



RoHS
Compliant



Features:

- Glass passivated junction chip
- For surface mounted application
- Low profile package
- Built-in strain relief
- Ideal for automated placement
- Easy pick and place
- Super fast recovery time for high efficiency
- Glass passivated chip junction
- High temperature soldering: 260°C/10 seconds at terminals
- Plastic material

Specifications:

Mechanical Data:

Cases	: Moulded plastic
Terminals	: Pure tin plated, lead free
Polarity	: Indicated by cathode band
Packing	: 16mm tape per EIA STD RS-481
Weight	: 0.21g

Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%.

Type Number	Symbol	ES3A	ES3F	ES3H	ES3J	Units
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	50	300	500	600	V
Maximum RMS Voltage	V_{RMS}	35	210	350	420	
Maximum DC Blocking Voltage	V_{DC}	50	300	500	600	
Maximum Average Forward Rectified Current	$I_{(AV)}$	3				A
Peak Forward Surge Current, 8.3ms A Single Half Sine-wave Superimposed on Rated Load (JEDEC method) at TL = 100°C	I_{FSM}	100				



Diode Ultra Fast



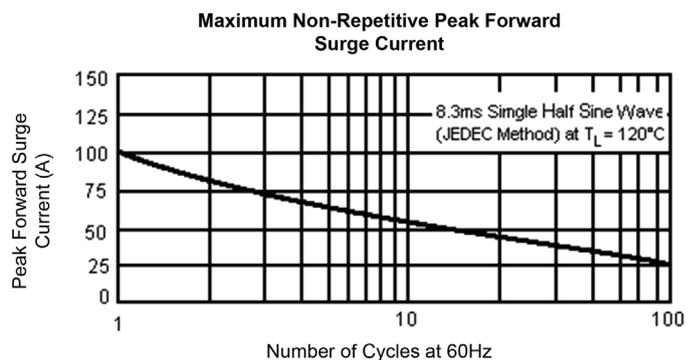
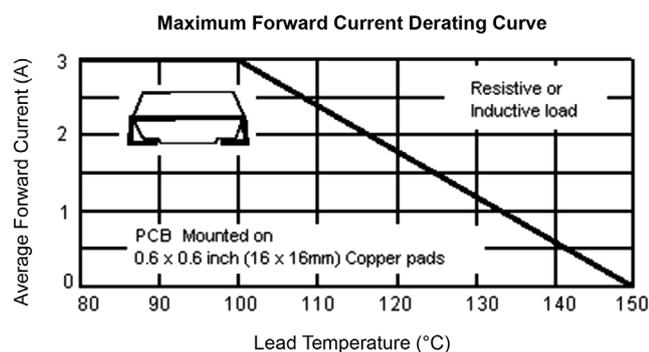
Type Number	Symbol	ES3A	ES3F	ES3H	ES3J	Units
Maximum Instantaneous Forward Voltage at 3.0A	V_F	0.95	1.3		1.7	V
Maximum DC Reverse Current at $T_A = 25^\circ\text{C}$ at Rated DC Blocking Voltage at $T_A = 100^\circ\text{C}$	I_R	10		500		μA μA
Maximum Reverse Recovery Time (Note 1)	T_{rr}	35				nS
Typical Junction Capacitance (Note 2)	C_j	45	30			pF
Maximum Thermal Resistance (Note 3)	$R_{\theta JA}$ $R_{\theta JL}$	47		12		$^\circ\text{C/W}$
Operating Temperature Range	T_J	-55 to +150				$^\circ\text{C}$
Storage Temperature Range	T_T	-55 to +150				$^\circ\text{C}$

Notes: 1. Reverse Recovery Test Conditions: $I_F = 0.5\text{A}$, $I_R = 1.0\text{A}$, $I_{RR} = 0.25\text{A}$.

Notes: 2. Measured at 1MHz and Applied $V_R = 4\text{V}$.

Notes: 3. Units Mounted on PCB with 0.6" x 0.6" (16mm x 16mm) Copper Pad Areas.

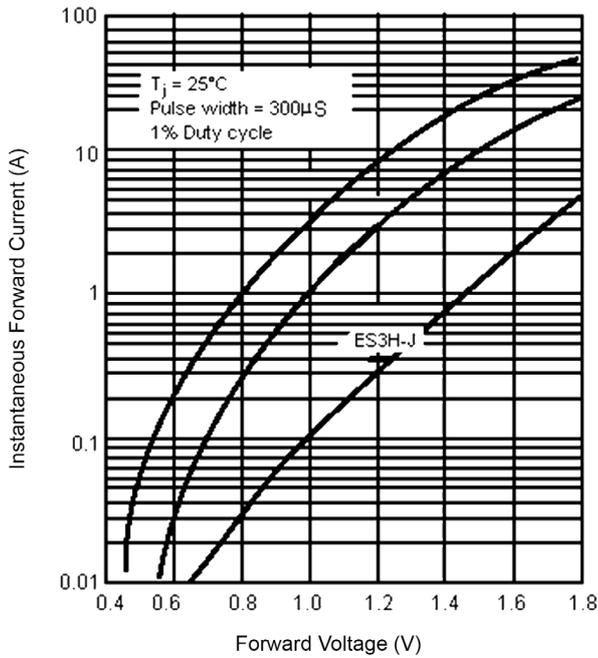
Ratings and Characteristic Curves (ES3A, ES3F, ES3H and ES3J)



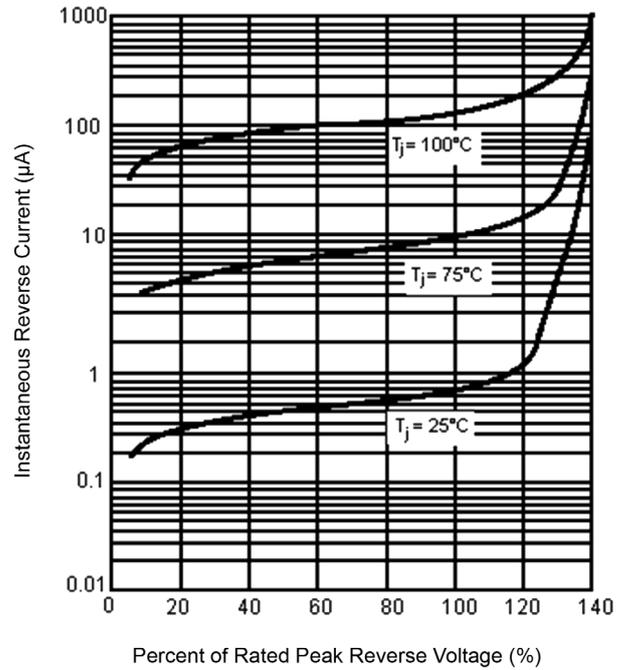
Diode Ultra Fast



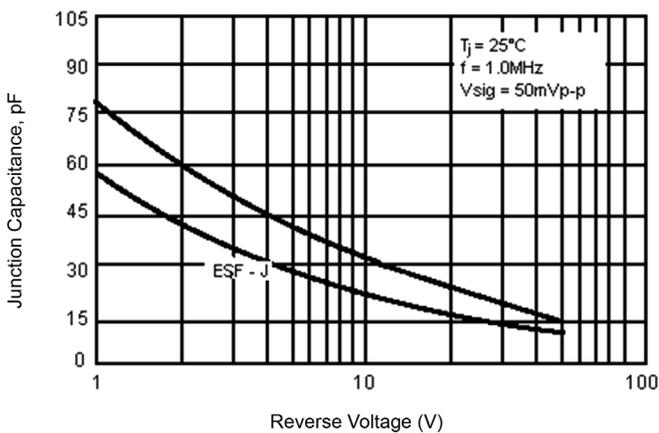
Typical Instantaneous Forward Characteristics



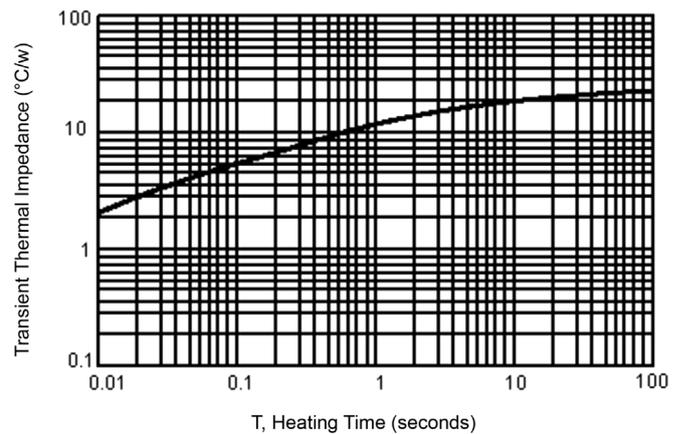
Typical Reverse Characteristics



Typical Junction Capacitance



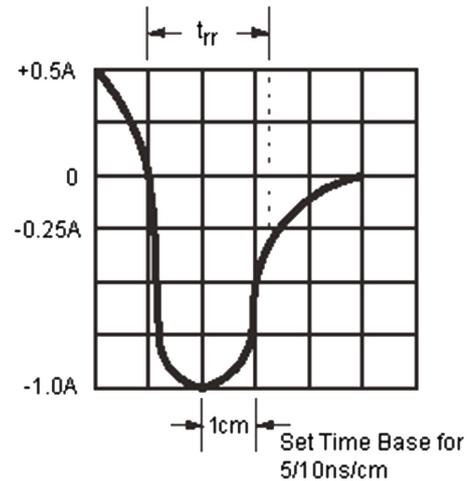
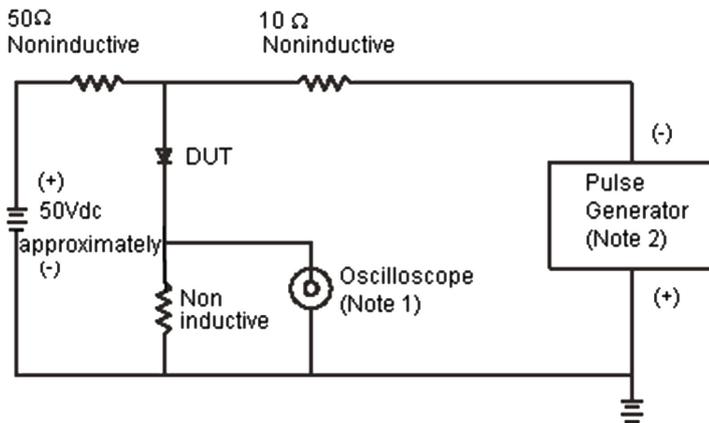
Typical Transient Thermal Impedance



Diode Ultra Fast

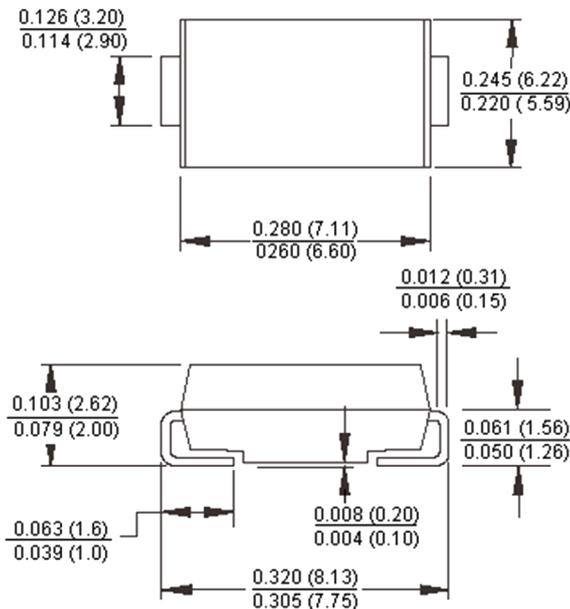


Reverse Recovery Time Characteristic and Test Circuit Diagram



Note: 1. Rise Time = 7ns Maximum. Input Impedance = 1 MΩ 22pf
Note: 2. Rise Time = 10ns Maximum Source Impedance = 50Ω

SMC/DO-214AB



Dimensions : Inches (Millimetres)

Part Number Table

Description	Part Number
Diode, Ultra-Fast, 3A, 50V	ES3A
Diode, Ultra-Fast, 3A, 300V	ES3F
Diode, Ultra-Fast, 3A, 500V	ES3H
Diode, Ultra-Fast, 3A, 600V	ES3J

Important Notice : This data sheet and its contents (the "Information") belong to the members of the Premier Farnell group of companies (the "Group") or are licensed to it. No licence is granted for the use of it other than for information purposes in connection with the products to which it relates. No licence of any intellectual property rights is granted. The Information is subject to change without notice and replaces all data sheets previously supplied. The Information supplied is believed to be accurate but the Group assumes no responsibility for its accuracy or completeness, any error in or omission from it or for any use made of it. Users of this data sheet should check for themselves the Information and the suitability of the products for their purpose and not make any assumptions based on information included or omitted. Liability for loss or damage resulting from any reliance on the Information or use of it (including liability resulting from negligence or where the Group was aware of the possibility of such loss or damage arising) is excluded. This will not operate to limit or restrict the Group's liability for death or personal injury resulting from its negligence. Multicomp is the registered trademark of the Group. © Premier Farnell plc 2012.

www.element14.com
 www.farnell.com
 www.newark.com

