



ES1A THRU ES1K

DIODE

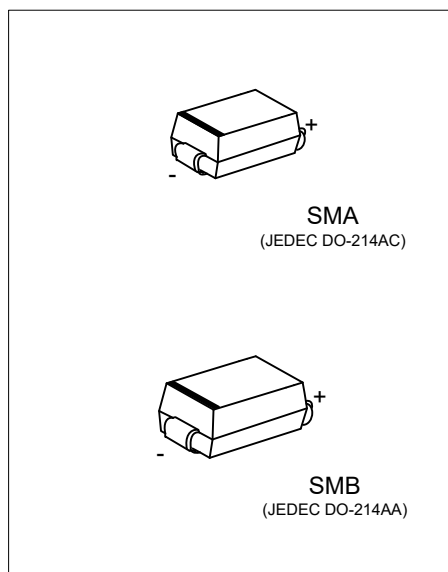
1.0AMP SURFACE MOUNT GLASS SUPERFAST RECTIFIER

DESCRIPTION

The UTC **ES1A** thru **ES1J** is a surface mount glass superfast rectifier, it uses UTC's advanced technology to provide customers with low power loss and high efficiency, etc.

FEATURES

- * Glass passivated chip junctions
- * Ideal for automated placement
- * Ultrafast reverse recovery time for high efficiency
- * Low profile package
- * High forward surge capability
- * High temperature soldering: 260/10 seconds at terminals



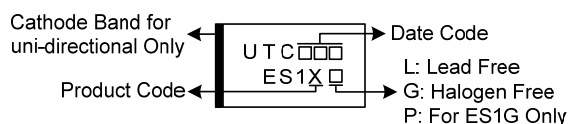
ORDERING INFORMATION

Ordering Number		Package	Pin Assignment		Packing
Lead Free	Halogen Free		1	2	
ES1XL-SMA-R	ES1XG-SMA-R	SMA	K	A	Tape Reel
ES1GL-SMA-R	ES1GP-SMA-R	SMA	K	A	Tape Reel
ES1XL-SMB-R	ES1XG-SMB-R	SMB	K	A	Tape Reel
ES1GL-SMB-R	ES1GP-SMB-R	SMB	K	A	Tape Reel

Note: Pin Assignment: K: Cathode A: Anode

<p>ES1AG-SMA-R</p> <p>(1) Packing Type (2) Package Type (3) Green Package</p>	<p>(1) R: Tape Reel (2) SMA: SMA, SMB: SMB (3) G: Halogen Free and Lead Free, L: Lead Free P: Halogen Free and Lead Free For ES1G only</p>
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MARKING



■ ABSOLUTE MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Single phase half-wave 60Hz, resistive or inductive load, for capacitive load current derate by 20%.

PARAMETER	SYMBOL	RATINGS						UNIT
		ES1A	ES1B	ES1D	ES1G	ES1J	ES1K	
Peak Repetitive Reverse Voltage	V_{RRM}	50	100	200	400	600	800	V
DC Blocking Voltage	V_{DC}	50	100	200	400	600	800	V
RMS Voltage	V_{RMS}	35	70	140	210	420	560	V
Average Rectified Output Current $T_A=75^{\circ}\text{C}$	I_O	1.0						A
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	30						A
Operating Junction Temperature Range	T_J	$-55 \sim +150$						$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	$-55 \sim +150$						$^{\circ}\text{C}$

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ THERMAL DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Typical Thermal Resistance (Note)	θ_{JL}	28	$^{\circ}\text{C/W}$

Note: Units mounted on P.C.B. 5.0 x 5.0 mm (0.013 mm thick) land areas.

■ ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Ratings at 25°C ambient temperature unless otherwise specified.

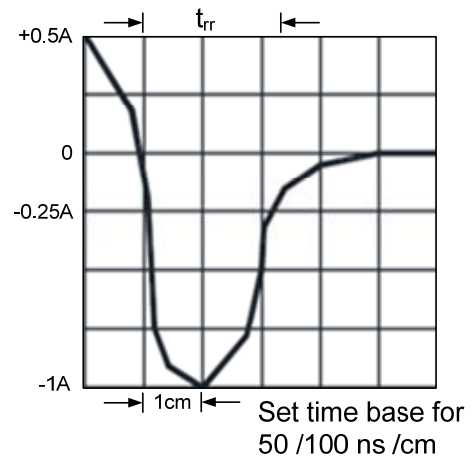
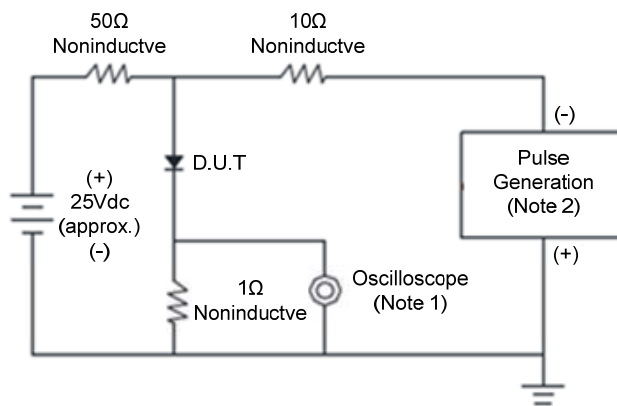
Single phase half-wave 60Hz, resistive or inductive load, for capacitive load current derate by 20%.

PARAMETER	SYMBOL	TEST CONDITIONS	RATINGS						UNIT
			ES1A	ES1B	ES1D	ES1G	ES1J	ES1K	
Forward Voltage	V_F	$I_F=1.0\text{A}$	0.95	0.95	0.95	1.25	1.7	1.7	V
Peak Reverse Current at Rated DC Blocking Voltage	I_R	$T_A=25^{\circ}\text{C}$	5.0						μA
		$T_A=100^{\circ}\text{C}$	100						μA
Reverse Recovery Time (Note 1)	t_{rr}		35						ns
Junction Capacitance (Note 2)	C_J		15						pF

Notes: 1. Measured at 1 MHz and applied reverse voltage of 4.0 V_{DC} .

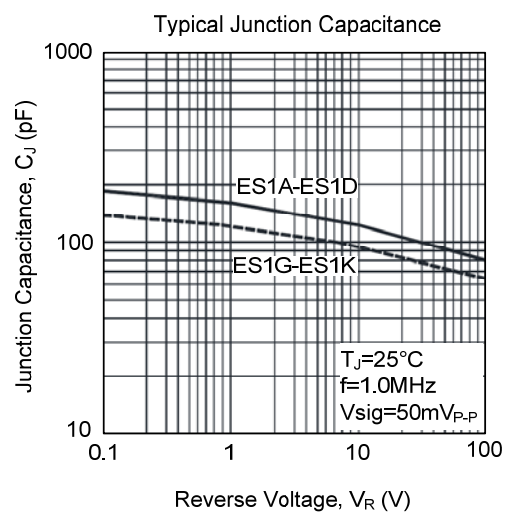
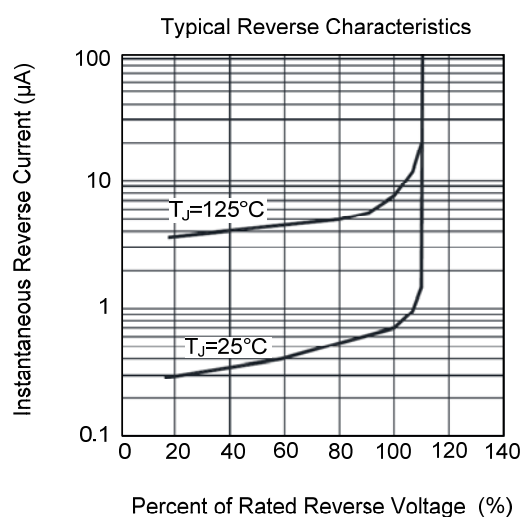
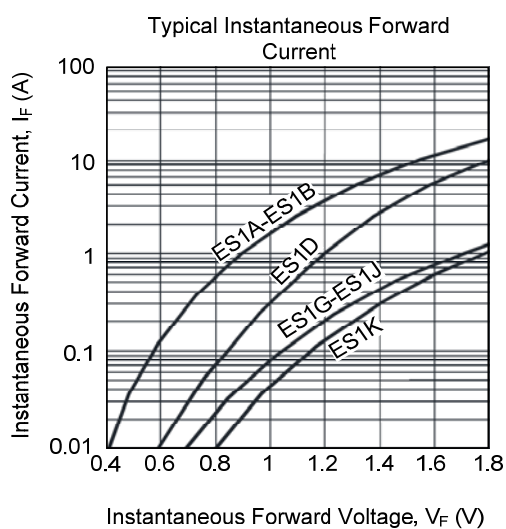
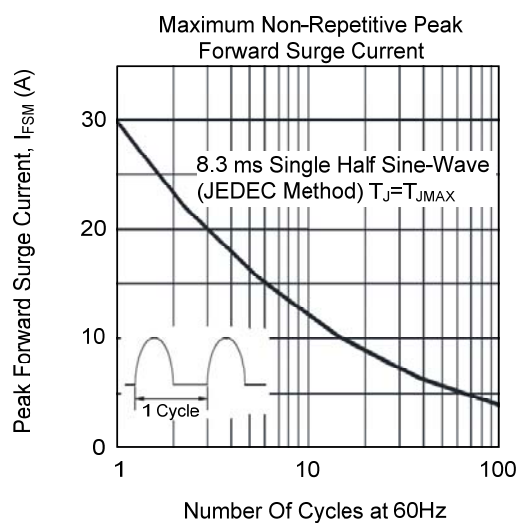
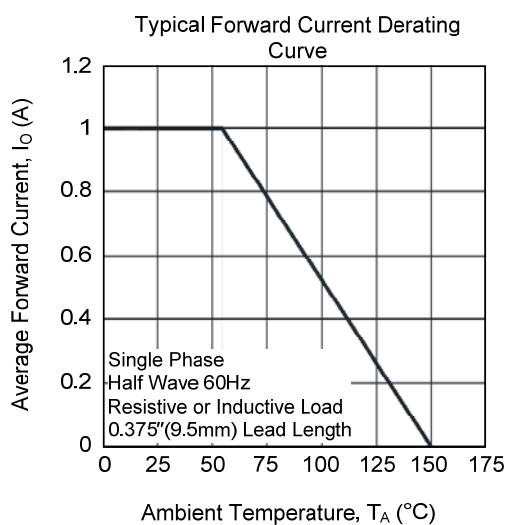
2. Reverse Recovery Test Conditions: $I_F = 0.5\text{A}$, $I_R = 1.0\text{A}$, $I_{RR} = 0.25\text{A}$.

■ TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



Notes: 1. Rise Time=7ns max. Input Impedance=1 magohm. 22pF
2. Rise time=10ns max. Source Impedance=50 ohms

TYPICAL CHARACTERISTICS



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. UTC reserves the right to make changes to information published in this document, including without limitation specifications and product descriptions, at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof.