



## ES1A THRU ES1J

DIODE

### 1.0AMP SURFACE MOUNT GLASS SUPERFAST RECOVERY RECTIFIER

#### DESCRIPTION

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

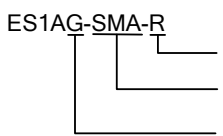
#### FEATURES

- \*Glass passivated Junction chip
- \*Low reverse leakage
- \*High forward surge current capability

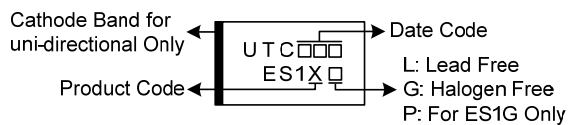

#### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment		Packing
Lead Free	Halogen Free		1	2	
ES1AL-SMA-R	ES1AG-SMA-R	SMA	K	A	Tape Reel
ES1AL-CA2-R	ES1AG-CA2-R	SOD-123	A	K	Tape Reel
ES1BL-SMA-R	ES1BG-SMA-R	SMA	K	A	Tape Reel
ES1BL-CA2-R	ES1BG-CA2-R	SOD-123	A	K	Tape Reel
ES1CL-SMA-R	ES1CG-SMA-R	SMA	K	A	Tape Reel
ES1CL-CA2-R	ES1CG-CA2-R	SOD-123	A	K	Tape Reel
ES1DL-SMA-R	ES1DG-SMA-R	SMA	K	A	Tape Reel
ES1DL-CA2-R	ES1DG-CA2-R	SOD-123	A	K	Tape Reel
ES1EL-SMA-R	ES1EG-SMA-R	SMA	K	A	Tape Reel
ES1EL-CA2-R	ES1EG-CA2-R	SOD-123	A	K	Tape Reel
ES1GL-SMA-R	ES1GP-SMA-R	SMA	K	A	Tape Reel
ES1GL-CA2-R	ES1GP-CA2-R	SOD-123	A	K	Tape Reel
ES1JL-SMA-R	ES1JG-SMA-R	SMA	K	A	Tape Reel
ES1JL-CA2-R	ES1JG-CA2-R	SOD-123	A	K	Tape Reel

Note: Pin Assignment: A: Anode K: Cathode

 <p>ES1AG-SMA-R</p> <p>(1) Packing Type (2) Package Type (3) Green Package</p>	<p>(1) R: Tape Reel (2) SMA: SMA, CA2: SOD-123 (3) L: Lead Free, G: Halogen Free and Lead Free P: Halogen Free and Lead Free For ES1G only</p>
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#### MARKING

SMA	SOD-123
 <p>Cathode Band for uni-directional Only</p> <p>Product Code</p> <p>UTC</p> <p>ES1X</p> <p>Date Code</p> <p>L: Lead Free G: Halogen Free P: For ES1G Only</p>	 <p>Product Code</p> <p>EX</p> <p>L: Lead Free G: Halogen Free P: For ES1G Only</p>

### ■ 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	ES1C	ES1D	ES1E	ES1G	ES1J	
Peak Repetitive Reverse Voltage	$V_{RRM}$	50	100	150	200	300	400	600	V
DC Blocking Voltage	$V_{DC}$	50	100	150	200	300	400	600	V
RMS Voltage	$V_{RMS}$	35	70	105	140	210	280	420	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
Junction to Ambient	SMA	$\theta_{JA}$	80	$^{\circ}\text{C}/\text{W}$
	SOD-123		160	$^{\circ}\text{C}/\text{W}$

Note: P.C.B. mounted with  $8.0\text{mm}^2$  (.013mm thick) copper pad areas.

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

Ratings at  $25^{\circ}\text{C}$  ambient temperature unless otherwise specified.

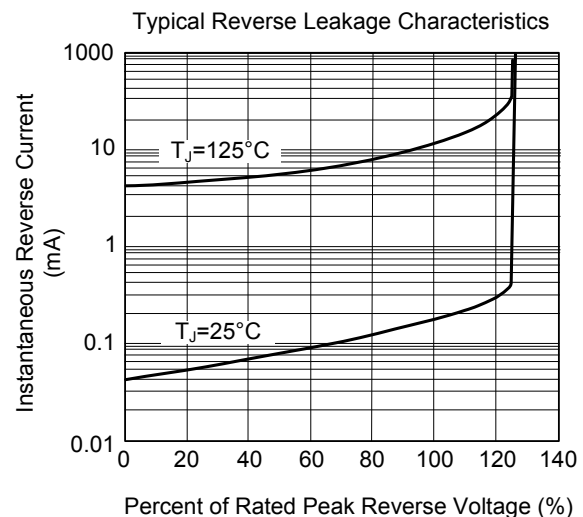
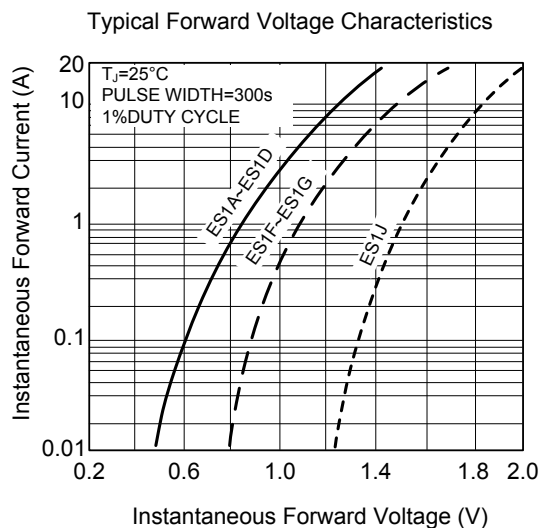
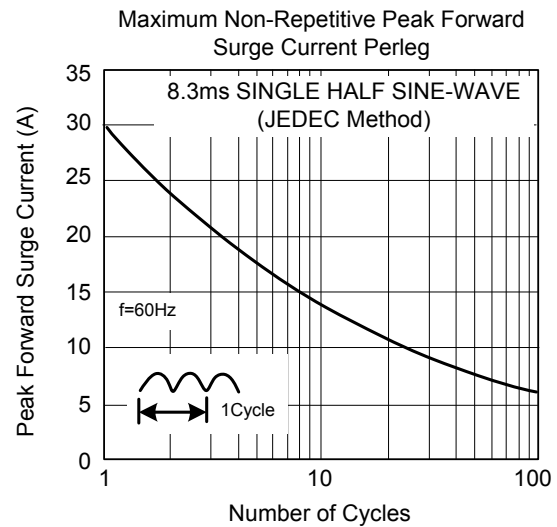
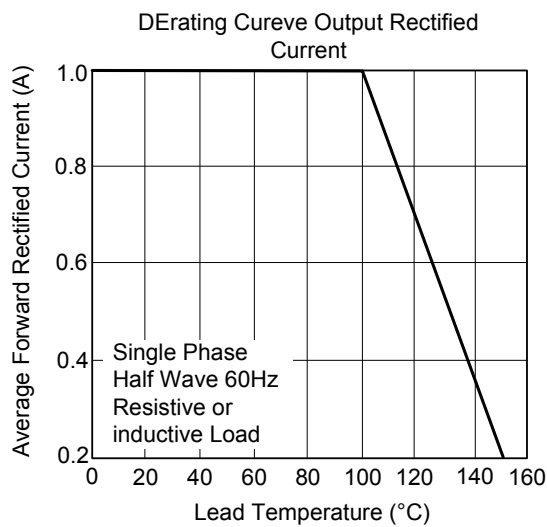
Single phase half-wave 60Hz, resistive or inductive load, for capacitive load current derate by 20%.

PARAMETER	SYMBOL	TEST CONDITIONS	RATINGS							UNIT
			ES1A	ES1B	ES1C	ES1D	ES1E	ES1G	ES1J	
Forward Voltage	$V_{FM}$	$I_F=1.0\text{A}$	0.95	0.95	0.95	0.95	1.25	1.25	1.7	V
Peak Reverse Current at Rated DC Blocking Voltage	$I_R$	$T_A=25^{\circ}\text{C}$	5.0							$\mu\text{A}$
		$T_A=125^{\circ}\text{C}$	500							$\mu\text{A}$
Reverse Recovery Time (Note 1)	$t_{rr}$		35							ns
Junction Capacitance (Note 2)	$C_J$		18							pF

Notes: 1. Reverse recovery condition  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $I_{rr}=0.25\text{A}$ .

2. Measured at 1MHz and applied reverse voltage of 4.0V D.C.

## ■ TYPICAL CHARACTERISTICS



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