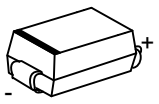
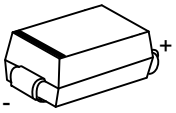
ES1A THRU ES1K

DIODE

1.0AMP SURFACE MOUNT GLASS SUPERFAST RECTIFIER



SMA
(JEDEC DO-214AC)



SMB
(JEDEC DO-214AA)

■ 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
* Ldeal 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

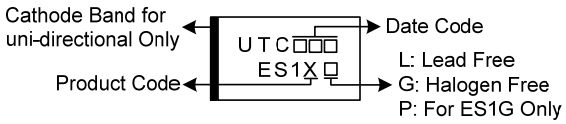
Ordering Number		Package	Pin Assignment		Packing
Lead Free	Halogen Free		1	2	
ES1XL-SMA-R	ES1XG-SMA-R	SMA	K	A	Tape Reel
ES1GL-SMA-R	ES1GP-SMA-R	SMA	K	A	Tape Reel
ES1XL-SMB-R	ES1XG-SMB-R	SMB	K	A	Tape Reel
ES1GL-SMB-R	ES1GP-SMB-R	SMB	K	A	Tape Reel

Note: Pin Assignment: K: Cathode A: Anode

ES1AG-SMA-R
(1)Packing Type
(2)Package Type
(3)Green Package

(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

■ MARKING



■ ABSOLUTE MAXIMUM RATINGS (T_A=25°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°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 ~ +150						°C
Storage Temperature Range	T_{STG}	-55 ~ +150						°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	°C/W

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

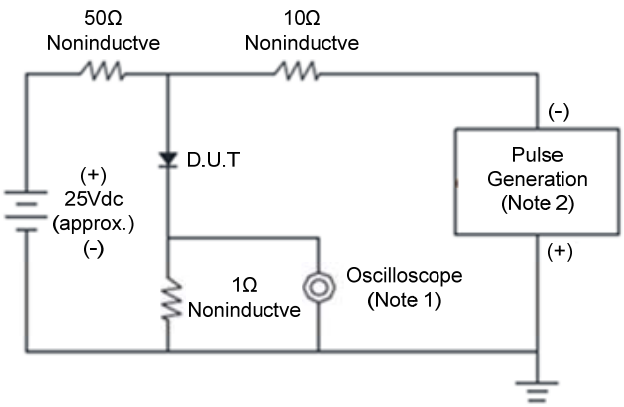
■ ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise specified)

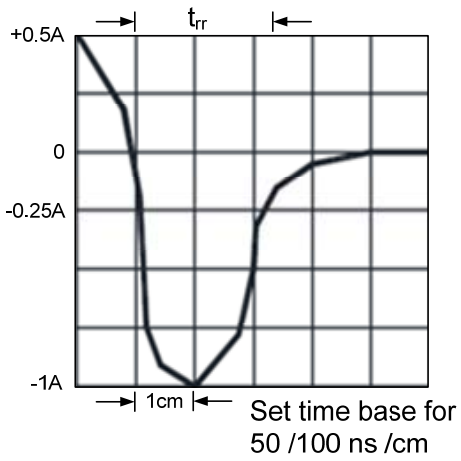
Ratings at 25°C ambient temperature unless otherwise specified.
Single phase half-wave 60Hz, resistive or inductive load, for capacitive load current derate by 20%.

PARAMETER	SYMBOL	TEST CONDITIONS	RATINGS						UNIT
			ES1A	ES1B	ES1D	ES1G	ES1J	ES1K	
Forward Voltage	V_F	I_F=1.0A	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°C	5.0						μA
		T_A=100°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 = 0.5A, I_R = 1.0A, I_{RR} = 0.25A.

■ TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC

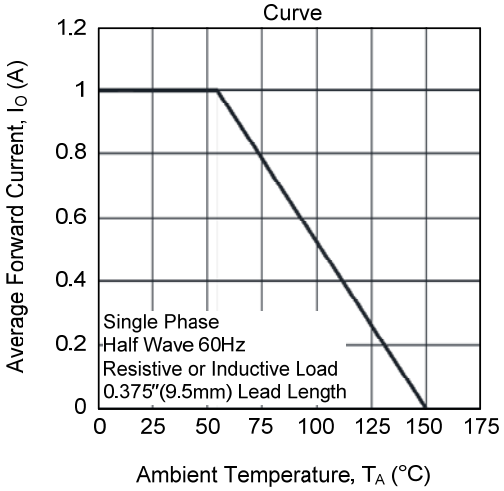




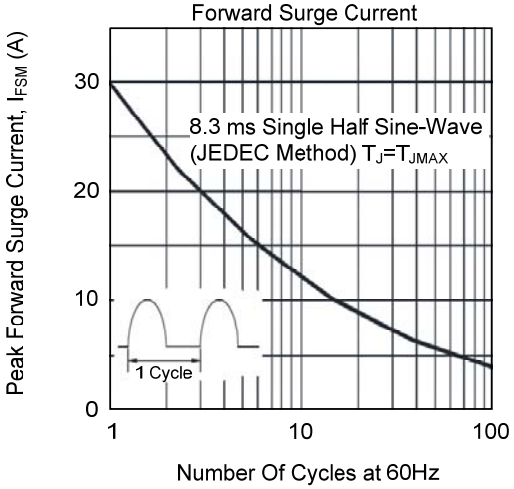
Notes: 1. Rise Time=7ns max. Input Impedance=1 magohm. 22pF
2. Rise time=10ns max. Source Impedance=50 ohms

■ TYPICAL CHARACTERISTICS

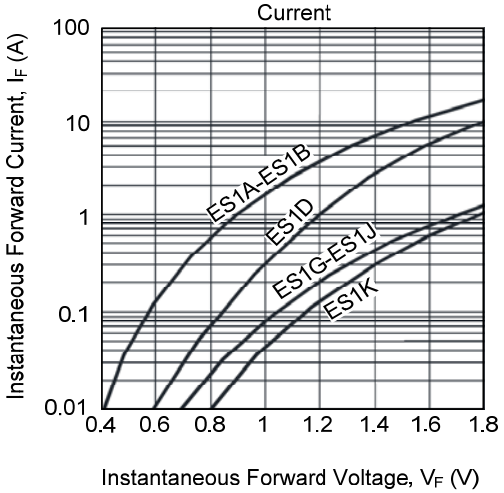
Typical Forward Current Derating Curve



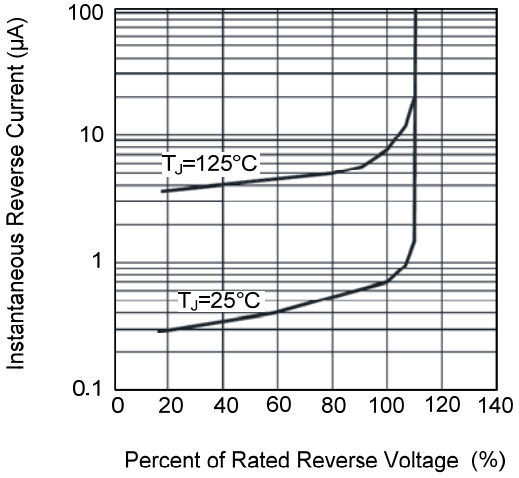
Maximum Non-Repetitive Peak Forward Surge Current



Typical Instantaneous Forward Current



Typical Reverse Characteristics



Typical Junction Capacitance