



Crownpo Technology

LIZ Electronics(Kunshan)

# APPROVAL SHEET

CUSTOMER: \_\_\_\_\_

PART NO : ES1A THRU ES1J \_\_\_\_\_

DESCRIPTION: SMD Super Fast Rectifiers \_\_\_\_\_

Agent : \_\_\_\_\_

DATE: 15-July-2013 \_\_\_\_\_

CUSTOMER APPROVED

WRITTEN	CHECKED	APPROVED
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# 1A Surface Mount Super Fast Rectifiers

## ■ Features

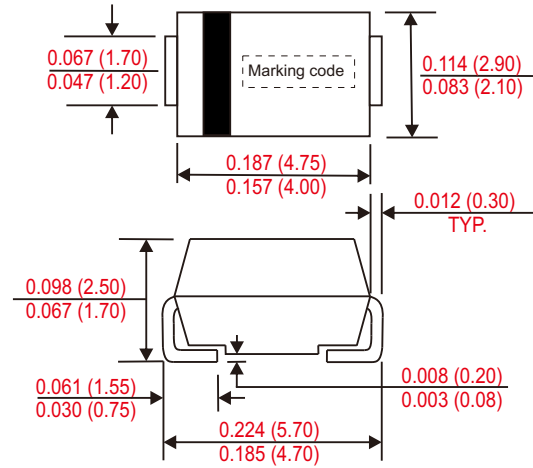
- Low profile surface mounted application in order to optimize board space.
- High current capability, low forward voltage drop.
- High surge capability.
- Superfast recovery time for switching mode application.
- Glass passivated chip junction.
- Suffix "G" indicates Halogen-free part, ex.ES1AG.
- Lead-free parts meet environmental standards of MIL-STD-19500 /228

## ■ Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, DO-214AC / SMA
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Weight : 0.002 ounce, 0.055 gram

## ■ Outline

SMA(DO-214AC)



Dimensions in inches and (millimeters)

## ■ 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%.

Parameter	Conditions	Symbol	MIN.	TYP.	MAX.	UNIT
Forward rectified current		$I_o$			1.0	A
Forward surge current	8.3ms single half sine-wave superimposed on rate load (JEDEC method)	$I_{FSM}$			30	A
Reverse current	$V_R = V_{RRM} \quad T_A = 25 \text{ }^\circ\text{C}$	$I_R$			5.0	uA
	$V_R = V_{RRM} \quad T_A = 125 \text{ }^\circ\text{C}$				100	
Diode junction capacitance	f=1MHz and applied 4V DC reverse voltage	$C_j$		7.0		pF
Storage temperature		$T_{STG}$	-55		+150	°C

Symbol	Marking code	Max. repetitive peak reverse voltage $V_{RRM}$ (V)	Max. RMS voltage $V_{RMS}$ (V)	Max. DC blocking voltage $V_R$ (V)	Max. forward voltage @1A, $T_A = 25 \text{ }^\circ\text{C}$ $V_f$ (V)	Max. reverse recovery time(1) $T_{rr}$ (ns)	Operating temperature $T_J$ ( °C)
ES1A	ES1A	50	35	50	0.95	35	-55 ~ +150
ES1B	ES1B	100	70	100			
ES1D	ES1D	200	140	200			
ES1G	ES1G	400	280	400	1.25		
ES1J	ES1J	600	420	600	1.70		

Note : 1.  $I_F = 0.5A$ ,  $I_R = 1.0A$ ,  $I_{RR} = 0.25A$



# 1A Surface Mount Super Fast Rectifiers

## Rating and characteristic curves

FIG.1-TYPICAL FORWARD CHARACTERISTICS

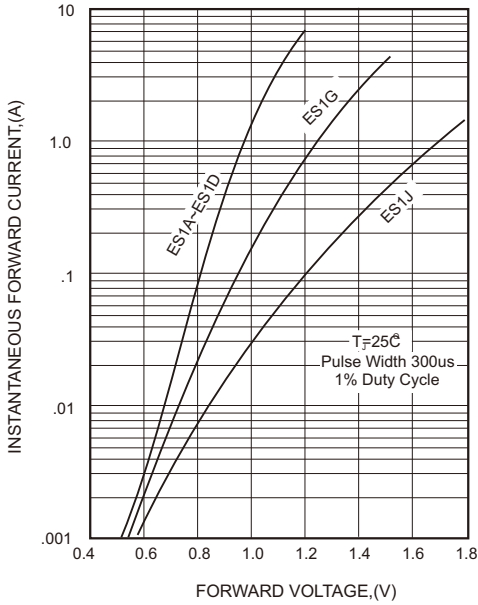


FIG.2-TYPICAL FORWARD CURRENT DERATING CURVE

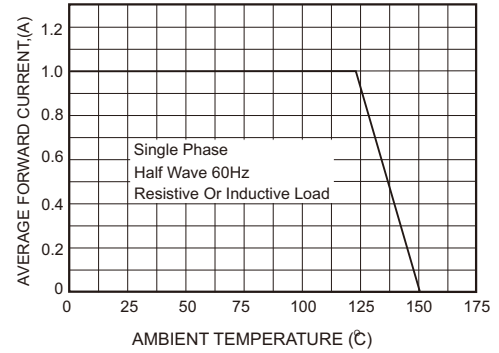


FIG.4-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

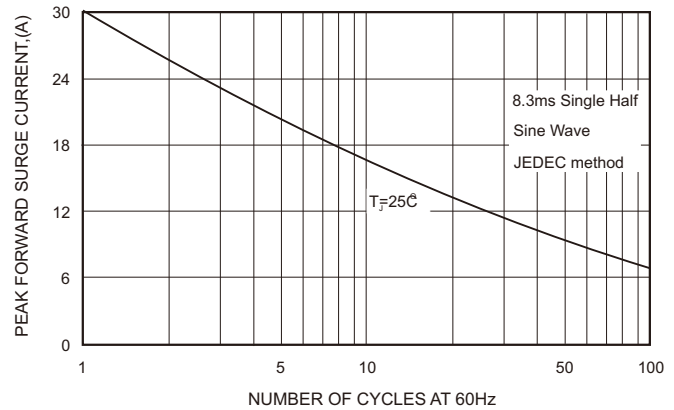
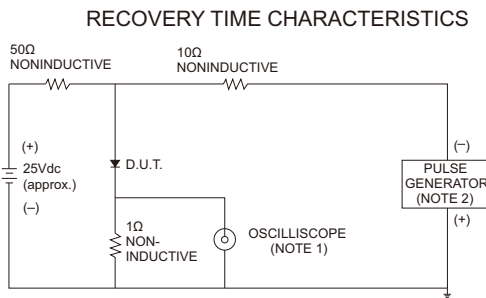


FIG.3- TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTICS



NOTES: 1. Rise Time= 7ns max., Input Impedance= 1 megohm.22pF.  
2. Rise Time= 10ns max., Source Impedance= 50 ohms.

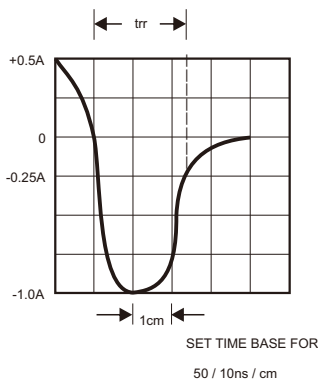
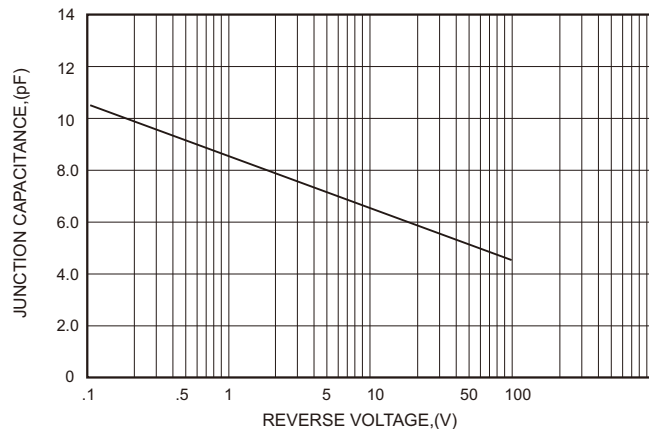


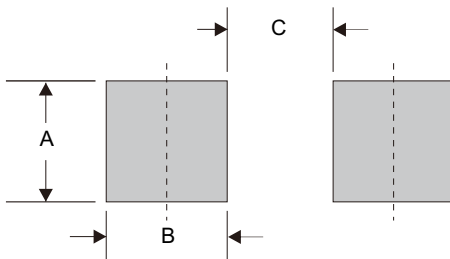
FIG.5-TYPICAL JUNCTION CAPACITANCE





## 1A Surface Mount Super Fast Rectifiers

### ■ SMA foot print



A	B	C
0.068 (1.70)	0.104 (2.60)	0.060 (1.50)

Dimensions in inches and (millimeters)

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