

## Surface Mount Fast Recovery Rectifier

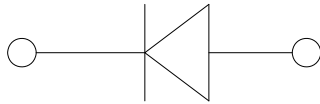


### Features

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- High forward surge capability
- Fast reverse recovery time
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C

### Typical Applications

For use in fast switching rectification of power supplies, inverters, converters, and freewheeling diodes for consumer, and telecommunication.



### Mechanical Data

- **Package:** DO-214AC (SMA)  
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** Cathode line denotes the cathode end

### ■ Maximum Ratings ( $T_a=25^\circ\text{C}$ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	RS1A	RS1B	RS1D	RS1G	RS1J	RS1K	RS1M
Device marking code			RS1A	RS1B	RS1D	RS1G	RS1J	RS1K	RS1M
Maximum Repetitive Peak Reverse Voltage	VRRM	V	50	100	200	400	600	800	1000
Maximum RMS Voltage	VRMS	V	35	70	140	280	420	560	700
Maximum DC blocking Voltage	VDC	V	50	100	200	400	600	800	1000
Average rectified output current @60Hz sine wave, Resistance load, TL (FIG.1)	$I_O$	A	1.0						
Forward Surge Current (Non-repetitive) @60Hz Half-sine wave, 1 cycle, $T_j=25^\circ\text{C}$	$I_{FSM}$	A	30						
Forward Surge Current (Non-repetitive) @1ms, square wave, 1 cycle, $T_j=25^\circ\text{C}$			60						
Current squared time @1ms $\leq$ t $\leq$ 8.3ms $T_j=25^\circ\text{C}$	$I^2t$	A <sup>2</sup> s	3.735						
Storage temperature	Tstg	°C	-55 ~ +150						
Junction temperature	$T_j$	°C	-55 ~ +150						

### ■ Electrical Characteristics ( $T_a=25^\circ\text{C}$ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	RS1A	RS1B	RS1D	RS1G	RS1J	RS1K	RS1M
Maximum instantaneous forward voltage	$V_F$	V	$I_{FM}=1.0A$	1.3						
Maximum reverse recovery time	$t_r$	ns	$I_F=0.5A, I_R=1.0A, I_R=0.25A$	150			250		500	
Maximum DC reverse current at rated DC blocking voltage	$I_R$	$\mu A$	$T_j=25^\circ\text{C}$	5						
			$T_j=125^\circ\text{C}$	100						
Typical junction capacitance	$C_j$	pF	Measured at 1MHz and Applied Reverse Voltage of 4.0 V.D.C	11			6			



# RS1A THRU RS1M

## ■ Thermal Characteristics ( $T_a=25^\circ\text{C}$ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	RS1A	RS1B	RS1D	RS1G	RS1J	RS1K	RS1M
Typical Thermal Resistance	$R_{\theta J-A}$	$^\circ\text{C/W}$	75 <sup>(1)</sup>						
	$R_{\theta J-L}$		35 <sup>(1)</sup>						
	$R_{\theta J-C}$		20 <sup>(1)</sup>						

Note

(1) Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas

## ■ Characteristics (Typical)

FIG.1:  $I_o$ -TL Curve

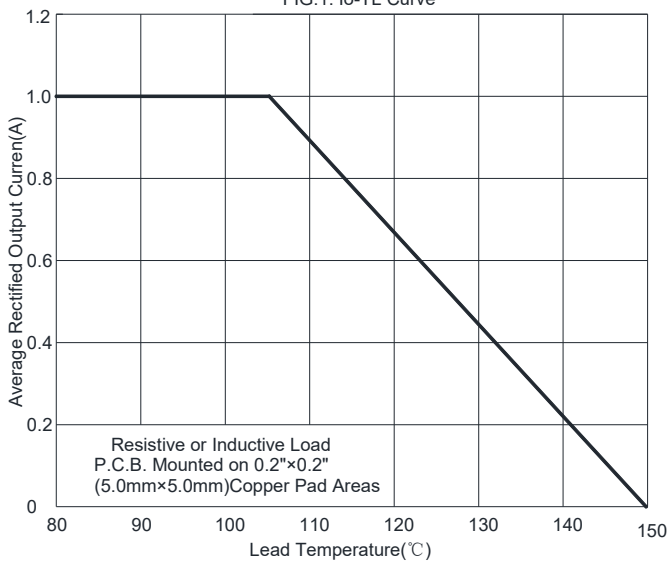


FIG2: Surge Forward Current Capability

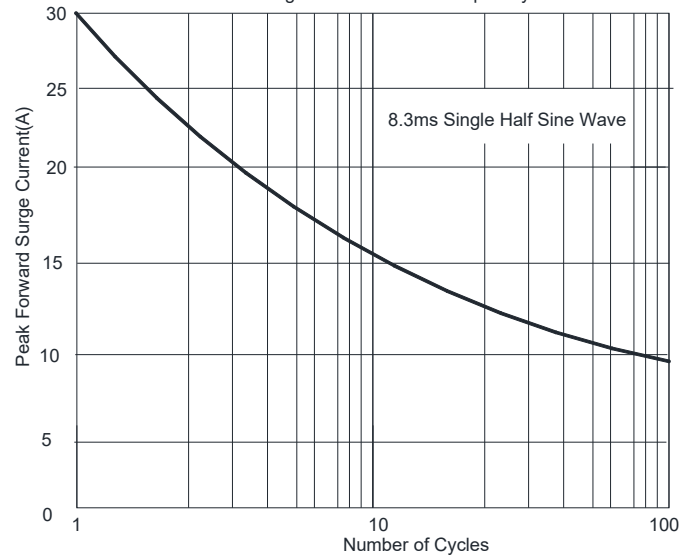


FIG3: Typical Forward Voltage

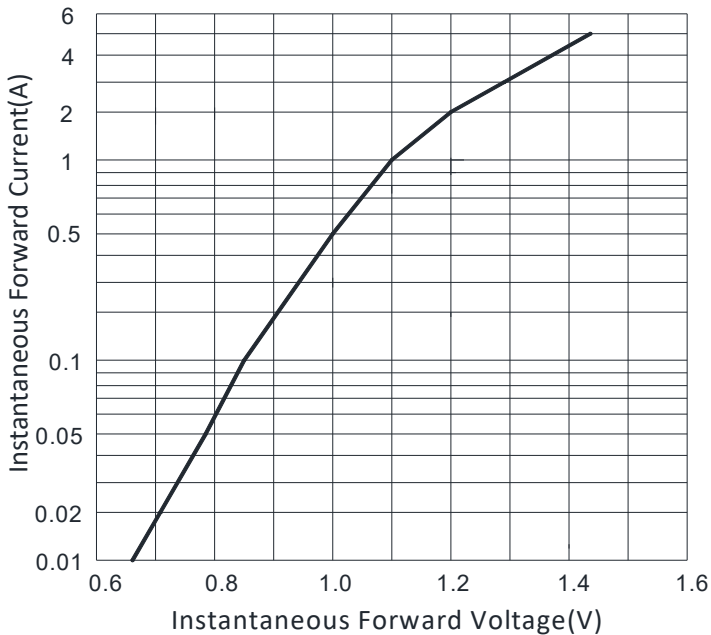


FIG4: Typical Reverse Characteristics

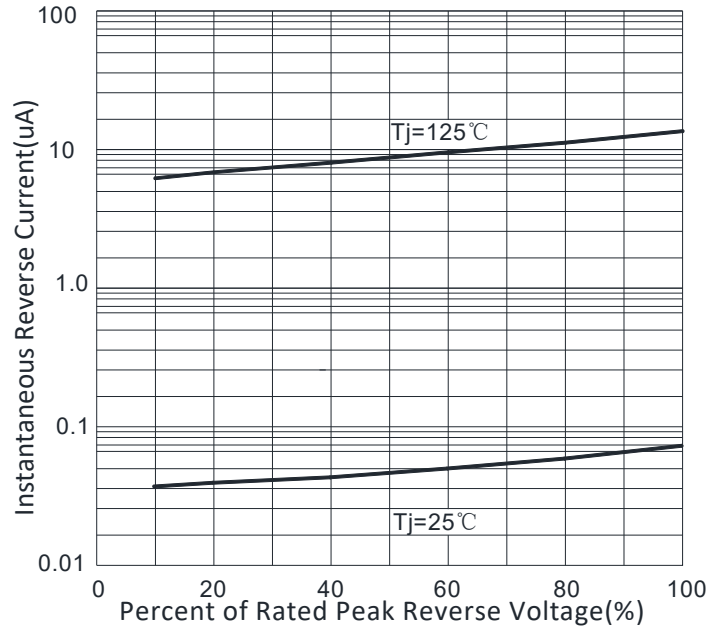
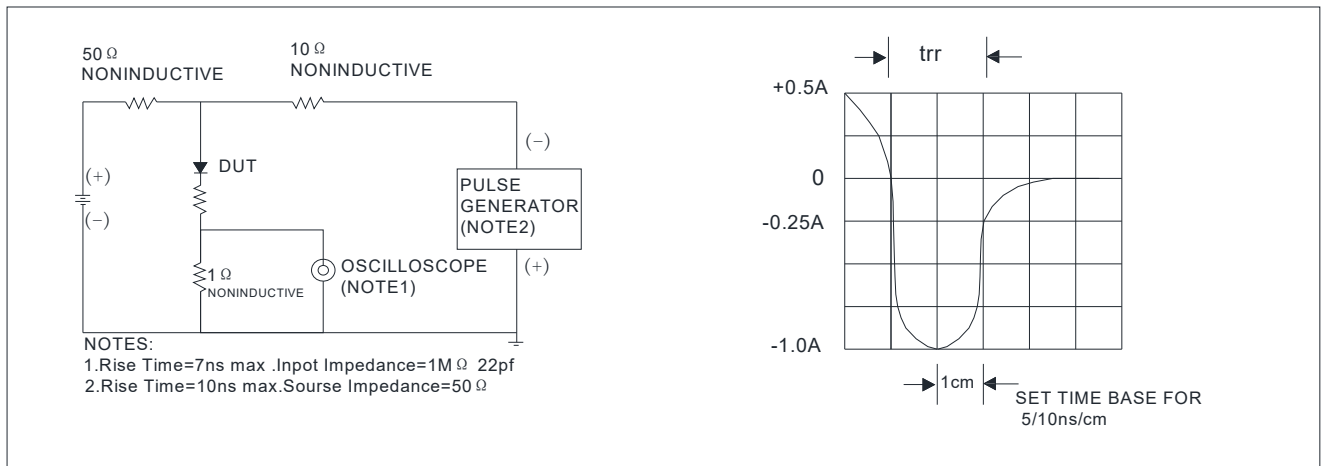


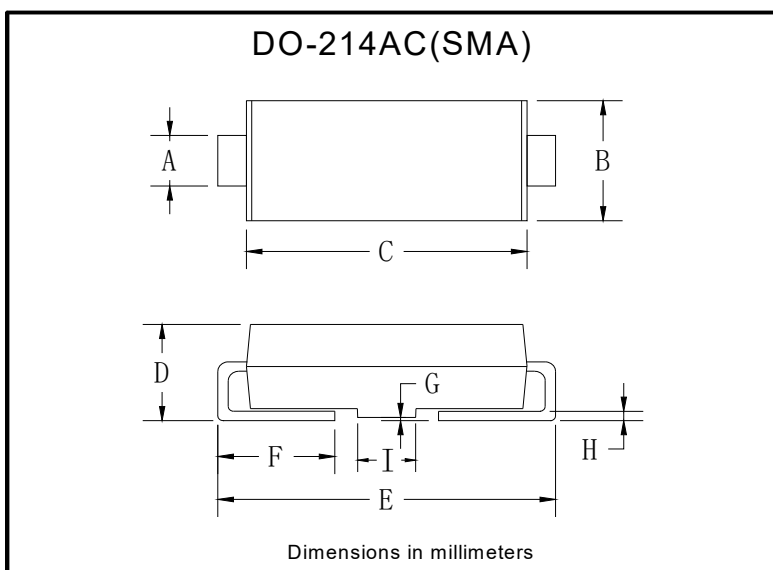
FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



## Ordering Information (Example)

PREFERED P/N	PACKAGE CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
RS1A-RS1M	F1	Approximate 0.059	5000	/	80000	13" reel
RS1A-RS1M	F2	Approximate 0.059	7500	/	120000	13" reel
RS1A-RS1M	F3	Approximate 0.059	7500	/	60000	13" reel
RS1A-RS1M	F4	Approximate 0.059	1800	14400	57600	7" reel
RS1A-RS1M	F5	Approximate 0.059	2000	16000	64000	7" reel
RS1A-RS1M	F6	Approximate 0.059	5000	/	100000	13" reel

## Outline Dimensions

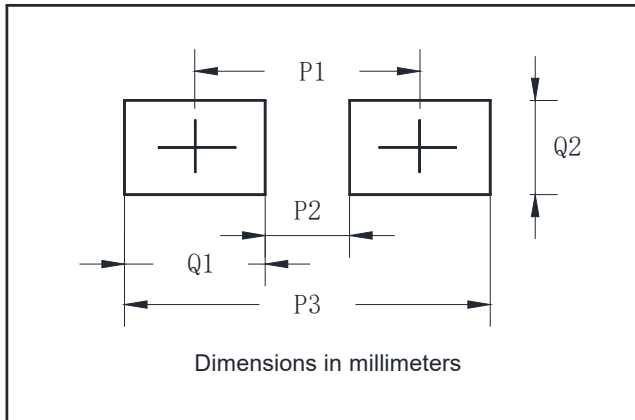


DO-214AC(SMA)		
Dim	Min	Max
A	1.25	1.58
B	2.40	2.83
C	4.00	4.75
D	1.90	2.30
E	4.93	5.28
F	0.76	1.41
G	0.05	0.20
H	0.15	0.31
I	1.70	2.10



## RS1A THRU RS1M

### ■Suggested Pad Layout



DO-214AC(SMA)	
Dim	Millimeters
P1	4.00
P2	1.50
P3	6.50
Q1	2.50
Q2	1.70



## RS1A THRU RS1M

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