



## RS2A FTHRU RS2MF

VOLTAGE RANGE 50 to 1000 Volts  
CURRENT 2.0 Ampere



## Features

- Fast recovery glass passivated chip
- Low forward voltage drop
- Low leakage current
- High forward surge capability
- High temperature soldering: 260°C/10S at terminals
- Component in accordance to ROHS 2002/95/1 and WEEE 2002/96/EC



## Mechanical Data

- Case: JEDEC SMAFL mold plastic Body over glass passivated chip
- Terminals: Solder plated, solderable per J-STD-002B and JESD22-B102D
- Polarity: Laser band denote cathode band
- Weight: 0.00095ounce, 0.028grams

## Maximum Ratings and Electrical Characteristics

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

TYPE NUMBER	SYMBOL	RS 2AF	RS 2BF	RS 2DF	RS 2GF	RS 2JF	RS 2KF	RS 2MF	UNITS
Maximum Repetitive Peak Reverse Voltage	$V_{RRM}$	50	100	200	400	600	800	1000	Volts
Maximum RMS Voltage	$V_{RMS}$	35	70	140	280	420	560	700	Volts
Maximum DC Blocking Voltage	$V_{DC}$	50	100	200	400	600	800	1000	Volts
Maximum Average Forward Rectified Current $T_L=125^\circ\text{C}$	$I_{(AV)}$	2.0							Amp
Peak Forward Surge Current 8.3mS single half sine wave superimposed on rated load (JEDEC method)	$I_{FSM}$	50							Amps
Maximum Instantaneous Forward Voltage @ 2.0A	$V_F$	1.3							Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage	$T_A = 25^\circ\text{C}$	5.0							$\mu\text{A}$
	$T_A = 125^\circ\text{C}$	100							
Maximum Reverse Recovery Time (Note 3) $T_J=25^\circ\text{C}$	$T_{RR}$	150			250	500		nS	
Typical Junction Capacitance (Note 1)	$C_J$	15							pF
Typical Thermal Resistance (Note 2)	$R_{\theta JA}$	60							$^\circ\text{C}/\text{W}$
Operating Junction Temperature Range	$T_J$	(-55 to +150)							$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	(-55 to +150)							$^\circ\text{C}$

## Notes:

1. Thermal resistance from Junction to ambient and from junction to lead mounted on PCB. with 0.2×0.2"(5.0 × 5.0mm) copper pad areas.
2. Measured at 1.0MHz and applied reverse voltage of 4.0V
3. Reverse Recovery Test Conditions:  $I_f=0.5\text{mA}$ ,  $I_r=1.0\text{mA}$ ,  $I_{rr}=0.25\text{A}$



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Ratings and Characteristic Curves (T<sub>A</sub>=25°C unless otherwise noted)

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

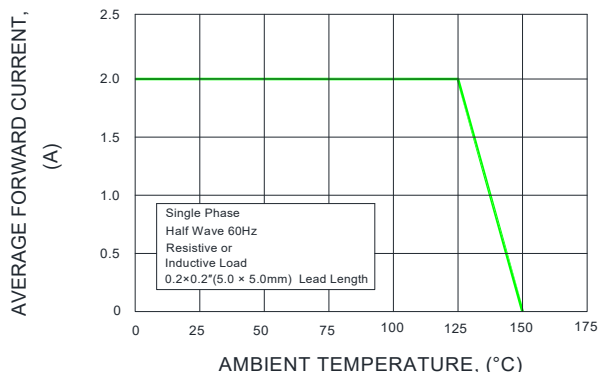


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

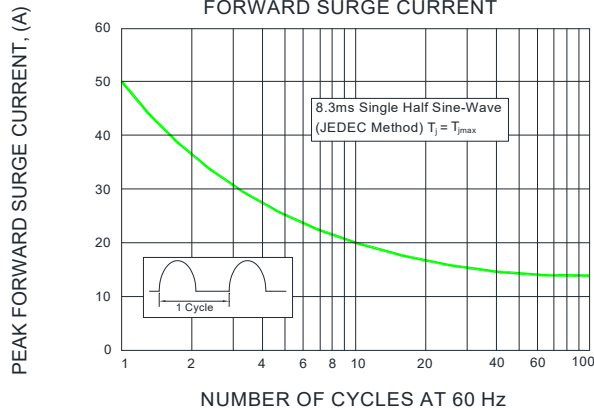


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

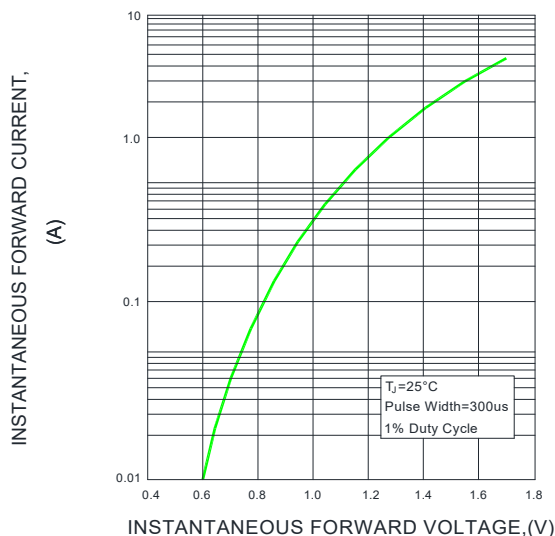


FIG.4-TYPICAL REVERSE CHARACTERISTICS

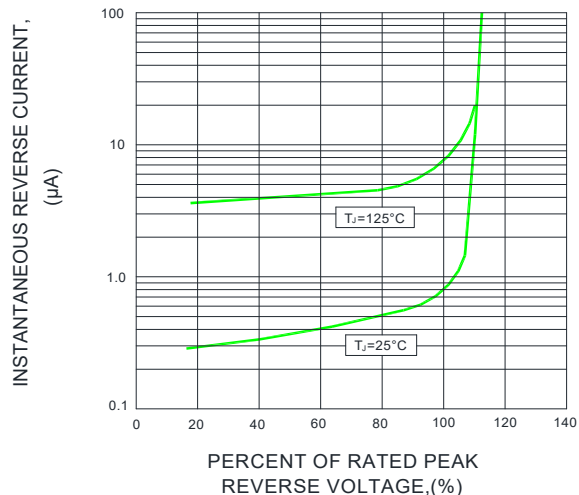


FIG.5-TYPICAL JUNCTION CAPACITANCE

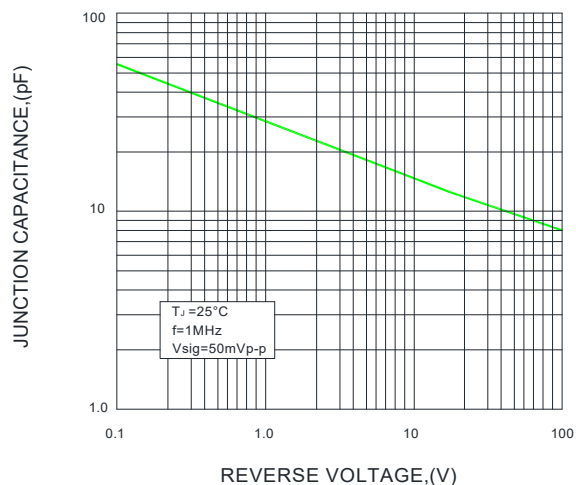
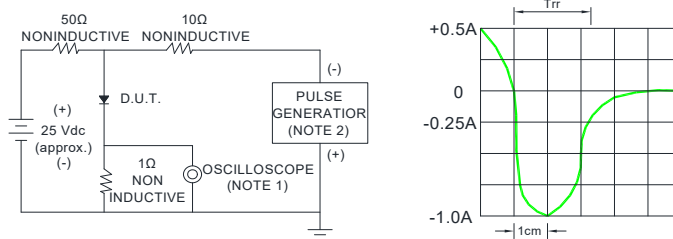


FIG.6-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC

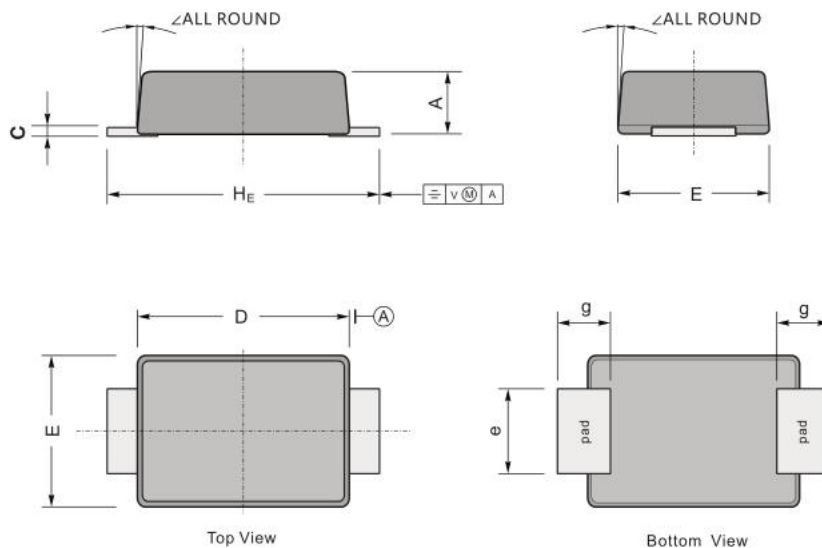


NOTES : 1.Rise Time=7ns max. Input Impedance= 1 magohm. 22pF  
2.Rise time=10ns max. Source Impedance= 50 ohms

SET TIME BASE FOR 50/100ns/cm



Package Outline Dimensions in inches (millimeters)



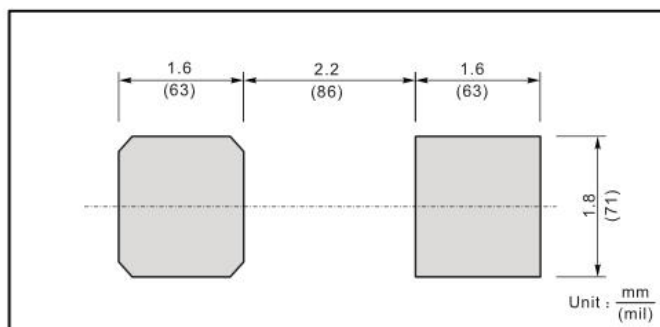
UNIT		A	C	D	E	e	g	HE	∠
mm	max	1.10	0.20	3.70	2.70	1.60	1.20	4.90	5-7°
	min	0.90	0.12	3.30	2.40	1.30	0.80	4.40	
mil	max	43	7.90	146	106	63	47	193	
	min	35	4.70	130	94	51	31	173	

The Recommended Mounting Pad Size

Marking

Type number	Marking code
RS2AF	RS2A
RS2BF	RS2B
RS2DF	RS2D
RS2GF	RS2G
RS2JF	RS2J
RS2KF	RS2K
RS2MF	RS2M

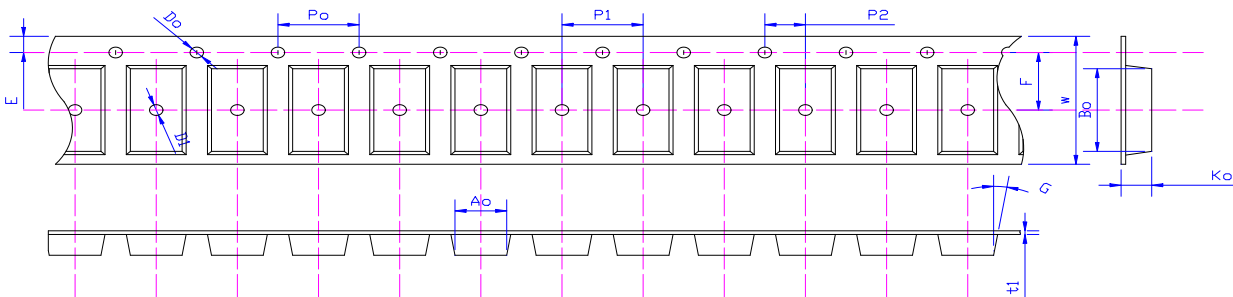
The recommended mounting pad size





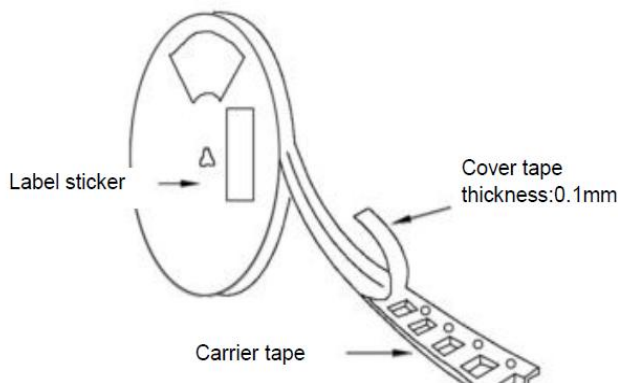
Packing Requirments

- PS black anti-static carrier tape packing



Specifications	Ao	Bo	Ko	Po	W	t1
SMAFL	2.83±0.10	4.90±0.10	1.45±0.10	4.00±0.1	12.0±0.05	0.23±0.02

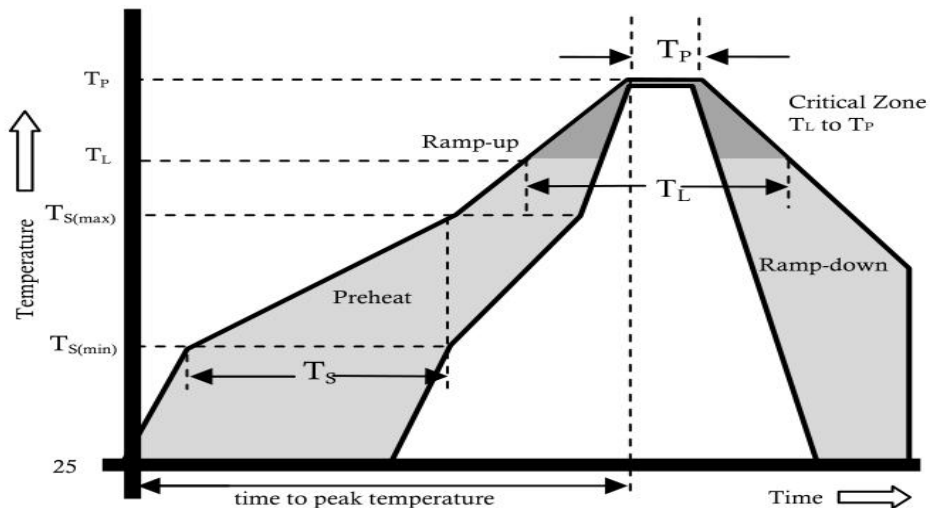
- 13 "antistatic plastic reel



DEVICE TYPE	13" Reel			
	Q'TY/REEL(pcs)	REEL/BOX	BOX/CARTOON	Q'TY/CARTON(pcs)
SMAFL	10000	2	8	160000



Reflow Profile



Reflow Condition		Pb-Free Assembly
Pre Heat	Temperature Min.	+150°C
	Temperature Max.	+200°C
	Time(Min to Max)	60-180 secs.
Average ramp up rate(Liquidus Temp( $T_L$ ) to peak)		3°C/sec. Max.
$T_S(max)$ to $T_L$ - Ramp-up Rate		3°C/sec. Max.
Reflow	Temperature ( $T_L$ )(Liquidus)	+217°C
	Temperature ( $T_L$ )	60-150 secs.
Peak Temp ( $T_P$ )		+(260+0/-5) °C
Time within 5°C of actual Peak Temp ( $T_P$ )		25 secs.
Ramp-down Rate		6°C/sec. Max.
Time 25°C to peak Temp ( $T_P$ )		8 min. Max.
Do not exceed		+260°C



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## Disclaimer

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