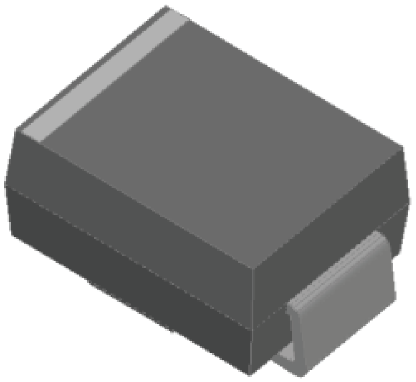
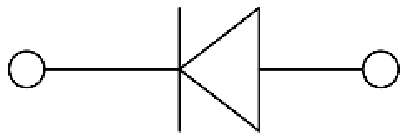
SMD Fast Recovery Rectifiers

RS2A Through RS2M: Fast Recovery SMB
RS2AA Through RS2MA: Fast Recovery SMA





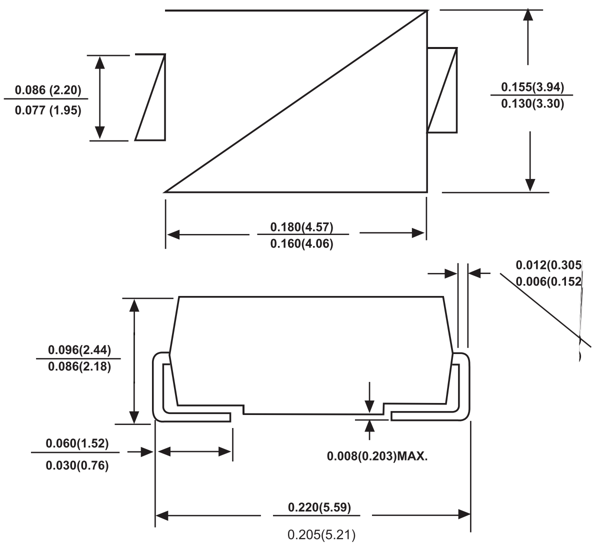
■ FEATURES

- Glass passivated junction
- For Surface Mount Applications
- Easy to pick and place
- Plastic packages have an Underswriter's Laboratory
- Flammability Classifications 94V-0
- High Temperature Soldering guaranteed: 260˚C/10 seconds at terminals.
- Component in accordance to RoHS 2002/96/EC.

■ MECHANICAL DATA

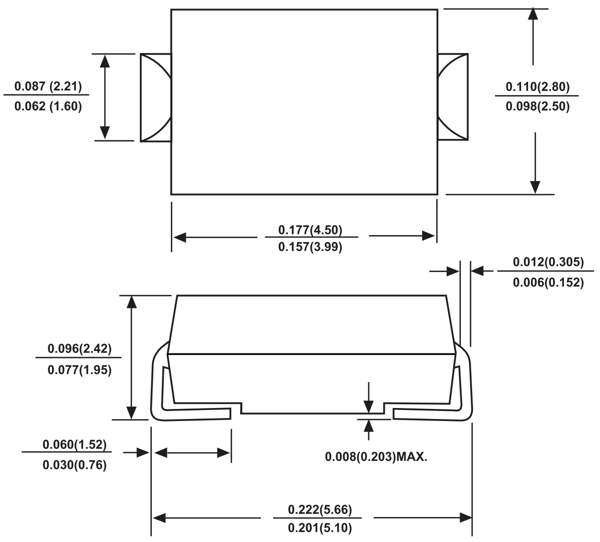
- Case: JEDEC SMB (DO-214AA) molded plastic over glass passivated chip Terminals: Solder plated
- Case: JEDEC SMA (DO-214AC) molded plastic over glass passivated chip Terminals: Solder plated
- Polarity: Color band denotes cathode end.

SMB



Dimensions in inches and (millimeters)

SMA



Dimensions in inches and (millimeters)

■ MAXIMUM RATINGS (Ta=25℃ Unless otherwise specified）

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitance load, derate current by 20%

Characteristic	Symbol	RS2A/AA	RS2B/BA	RS2D/DA	RS2G/GA	RS2J/JA	RS2K/KA	RS2M/MA	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage (Note 4)	V_{RRM} V_{RWM} V_R	50	100	200	400	600	800	1000	V
RMS Reverse Voltage	$V_{R(RMS)}$	35	70	140	280	420	560	700	V
Average Rectified Output Current @T_T =120°C	I_O	1.5							A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	50							A

■ THERMAL CHARACTERISTICS (Ta=25℃ Unless otherwise specified）

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Terminal (Note 5)	$R_{\theta JT}$	20	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	°C

■ ELECTRICAL CHARACTERISTICS (Ta=25℃ Unless otherwise specified）

Characteristic	Symbol	RS2A/AA	RS2BBA	RS2D/DA	RS2G/GA	RS2J/JA	RS2K/KA	RS2M/MA	Unit
Forward Voltage @ I_F = 1.5A	V_{FM}	1.3							V
Peak Reverse Current @ T_A = 25°C at Rated DC Blocking Voltage (Note 4)@ T_A = 125°C	I_{RM}	5.0 200							µA
Reverse Recovery Time (Note 6)	t_{rr}	150					250	500	ns
Typical Total Capacitance (Note 7)	C_T	30							pF

Notes:
4. Short duration pulse test used to minimize self-heating effect.
5. Reverse recovery test conditions: I_F = 0.5A, I_R = 1.0A, I_{rr} = 0.25A. See Figure 5.
6. Thermal Resistance: Junction to terminal, unit mounted on PC board with 5.0 mm^2 (0.013 mm thick) copper pads as heat sink.
7. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.

■ PACKAGING INFORMATION

Part Number	Case	Packaging
RS2xA	SMA	5000/Tape & Reel
RS2x	SMB	3000/Tape & Reel

*x = Device type, e.g. RS2DA-13-F (SMA package); RS2J-13-F (SMB package).

Notes:
1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see EU Directive 2002/95/EC Annex Notes.
2. Product manufactured with Data Code 0924 (week 24, 2009) and newer are built with Green Molding Compound.
3. For packaging details, go to our website at http://www.diodes.com.

FIG.1-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

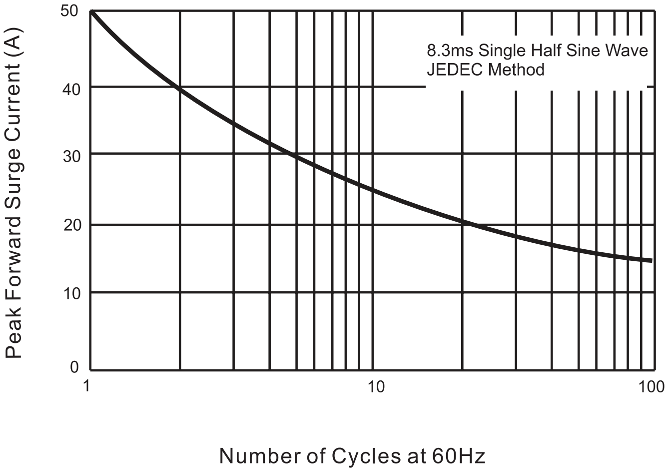
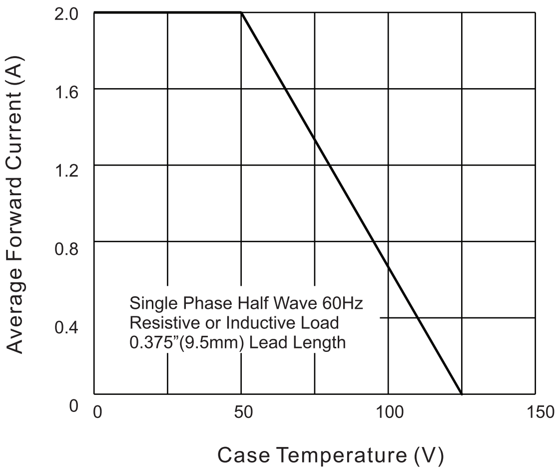


FIG.2-MAXIMUM CURRENT DERATING CURVE



■ RATINGS AND CHARACTERISTIC CURVES

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

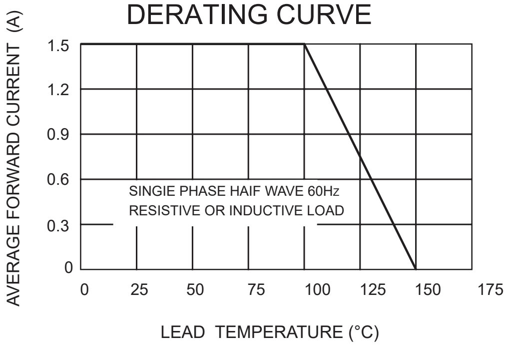
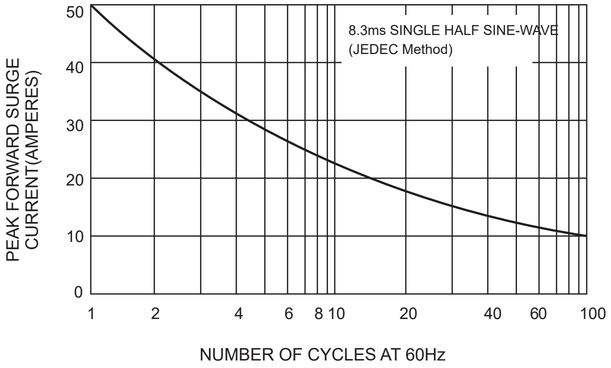


FIG.2-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT



CHARACTERISTICS
FIG.3-TYPICAL INSTANTANEOUS FORWARD

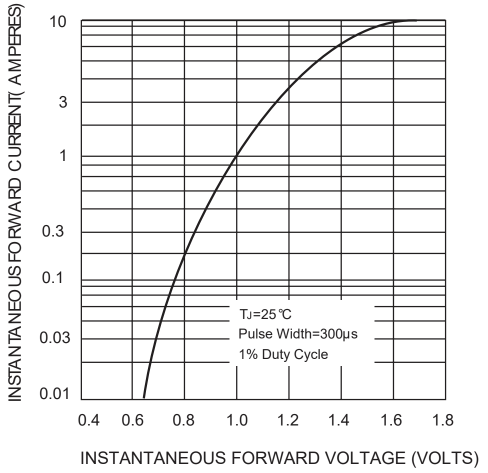


FIG.4-TYPICAL REVERSE CHARACTERISTICS

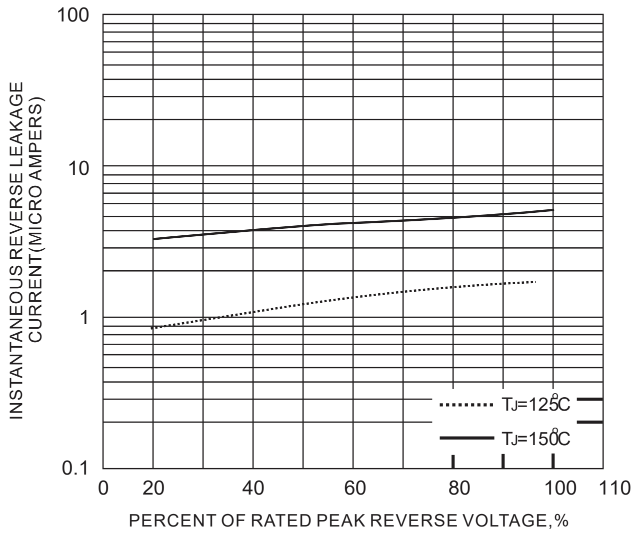


FIG.5-TYPICAL JUNCTION CAPACITANCE

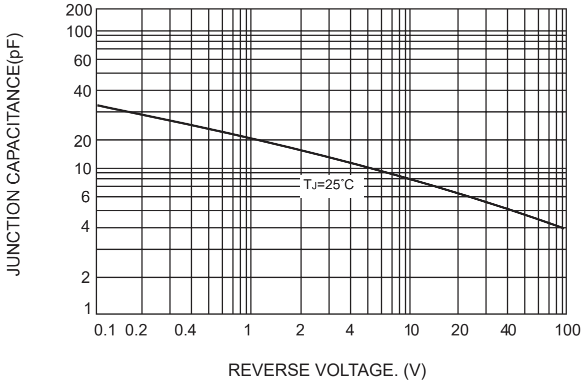
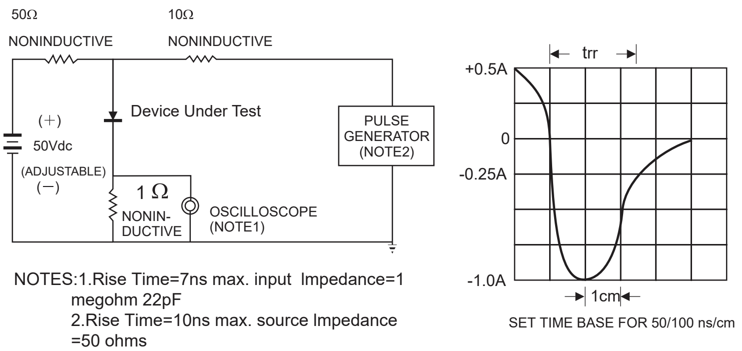


FIG.6-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



NOTES:1.Rise Time=7ns max. input Impedance=1 megohm 22pF
2.Rise Time=10ns max. source Impedance =50 ohms