

SURFACE MOUNT FAST RECOVERY RECTIFIERS Reverse Voltage – 50 to 1000 Volts Forward Current – 3.0 Ampere

FEATURES

- High current capability
- High surge current capability
- High reliability
- Low reverse current
- Low forward voltage drop
- Fast switching for high efficiency
- AEC-Q101 qualified (Automotive grade with suffix "Q".)
- Expsemi electronics



MECHANICAL DATA

- Case: SMC molded plastic.
- Mounting position: Any
- Lead: Lead formed for surface mount
- Polarity: Color band denotes cathode end

Maximum Ratings and Electrical Characteristics

Ratings at 25 °C ambient temperature unless otherwise specified.

Parameter	Symbols	RS3A	RS3B	RS3D	RS3G	RS3J	RS3K	RS3M	Units
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	V_{RMS}	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	V_{DC}	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current at $T_L = 90\text{ }^{\circ}\text{C}$	$I_{F(AV)}$	3							A
Peak Forward Surge Current, 8.3 ms Single Half Sine Wave Superimposed on Rated Load	I_{FSM}	100							A
Maximum Forward Voltage at 3 A	V_F	1.3							V
Maximum DC Reverse Current at Rated DC Blocking Voltage $T_A = 25\text{ }^{\circ}\text{C}$ $T_A = 125\text{ }^{\circ}\text{C}$	I_R	5 250							μA
Maximum Reverse Recovery Time ¹⁾	t_{rr}	150				250	500		ns
Typical Junction Capacitance ²⁾	C_J	60							pF
Typical Thermal Resistance ³⁾	$R_{\theta JL}$ $R_{\theta JA}$	25 55							$^{\circ}\text{C/W}$
Operating Junction and Storage Temperature Range	T_j, T_{stg}	- 55 to + 150							$^{\circ}\text{C}$

¹⁾ Reverse recovery time test conditions: $I_F = 0.5\text{ A}$, $I_R = 1\text{ A}$, $I_{rr} = 0.25\text{ A}$.

²⁾ Measured at 1 MHz and applied reverse voltage of 4 V.

³⁾ Thermal resistance from junction to ambient P.C.B mounted on 0.2 X 0.2" (5 X 5 mm²) copper pad ares.

RATING AND CHARACTERISTICS CURVES (RS3A THRU RS3M)

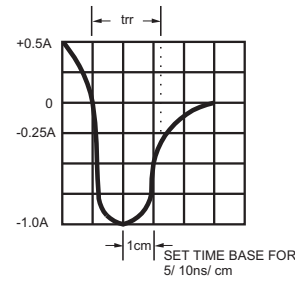
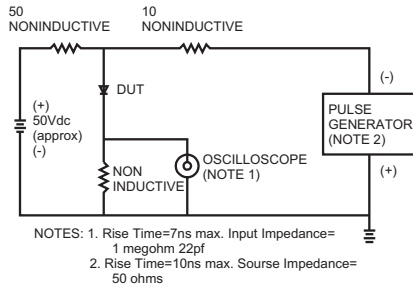


FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

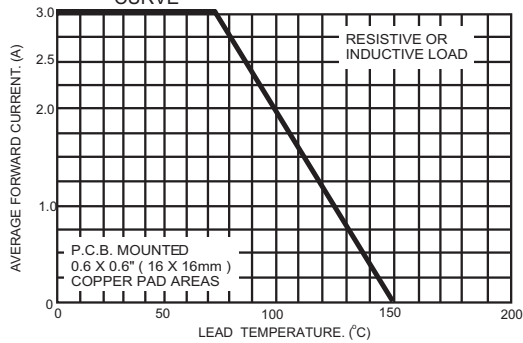


FIG.2- TYPICAL REVERSE CHARACTERISTICS

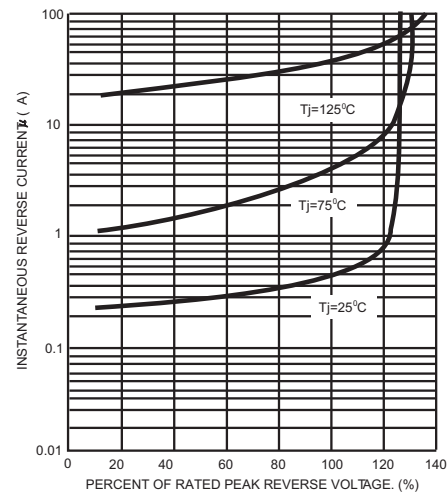


FIG.3- MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

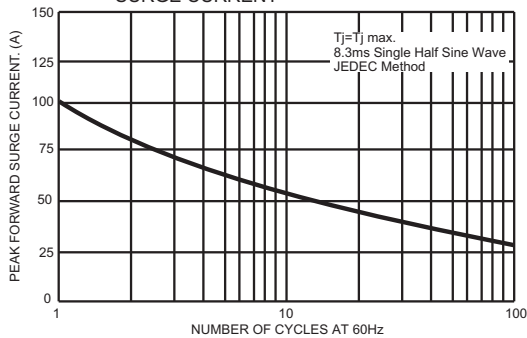


FIG.5- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

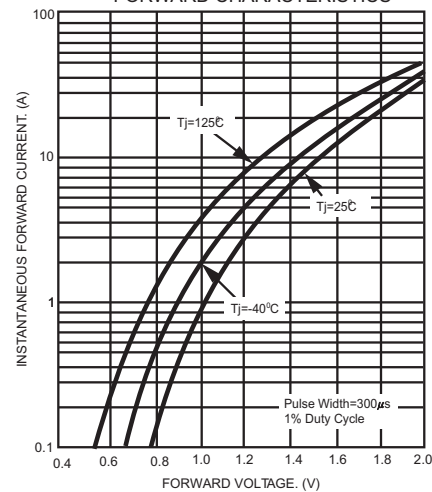
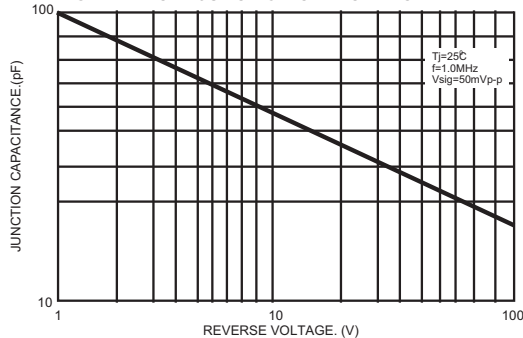
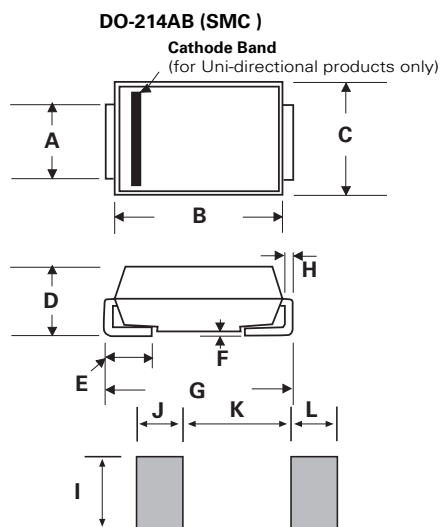


FIG.4- TYPICAL JUNCTION CAPACITANCE



Dimensions

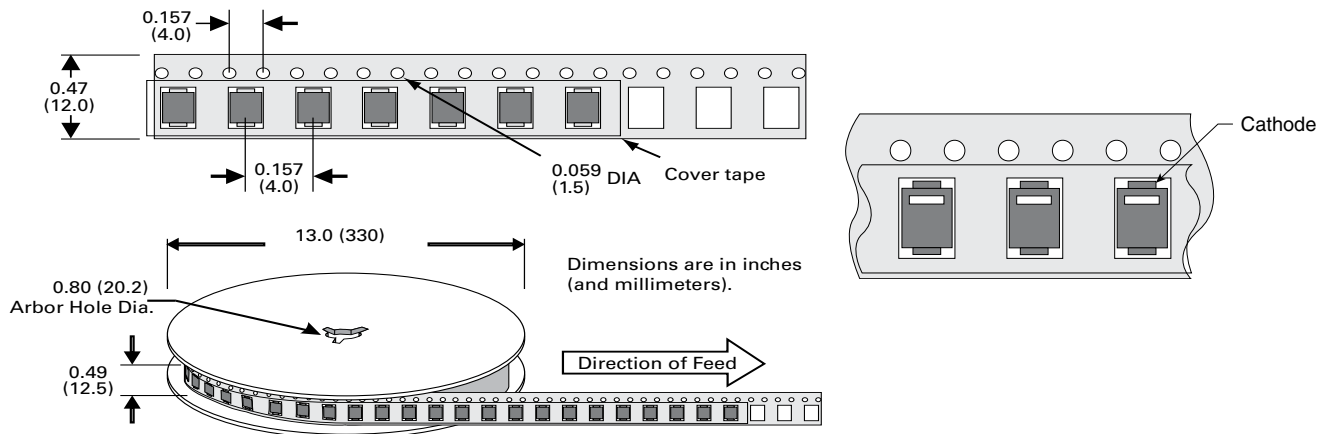


Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
A	0.108	0.128	2.750	3.250
B	0.260	0.291	6.600	7.400
C	0.220	0.246	5.590	6.250
D	0.078	0.108	1.980	2.750
E	0.030	0.060	0.760	1.520
F	0.002	0.008	0.051	0.203
G	0.303	0.323	7.700	8.200
H	0.006	0.012	0.152	0.305
I	0.129	-	3.300	-
J	0.094	-	2.400	-
K	-	0.165	-	4.200
L	0.094	-	2.400	-

Packaging Options

Part number	Component Package	Quantity	Packaging Option	Packaging Specification
RS3X	DO-214AB	3000	Tape & Reel - 16mm tape/13" reel	EIA STD RS-481

Tape and Reel Specication



Note: Devices are packde in accordance with EIA standard RS-481-Aand specification given above.