US3A THRU US3M

SEMICONDUCTOR

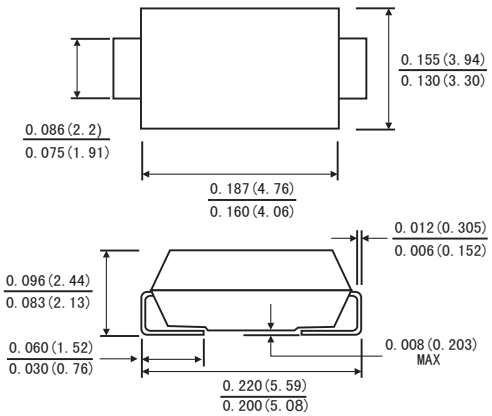
GLASS PASSIVATED JUNCTION ULTRA FAST RECOVERY RECTIFIER

Reverse Voltage: 50 to 1000 Volts
Forward Current: 3.0Ampere

FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Glass passived junction
- Low forward voltage drop
- High current capability, High reliability
- Low power loss, high efficiency
- High surge current capability
- High speed switching, Low leakage
- High temperature soldering guaranteed:260°C/10 seconds at terminals
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

SMB(DO-214AA)



Dimensions in inches and (millimeters)

MECHANICAL DATA

- Case: JEDEC SMB(DO-214AA) molded plastic body
- Terminals: solder plated ,solderable per MIL-STD-750,method 2026
- Polarity: color band denotes cathode end
- Mounting Position: Any
- Weight: 0.003ounce,0.093 gram

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%.)

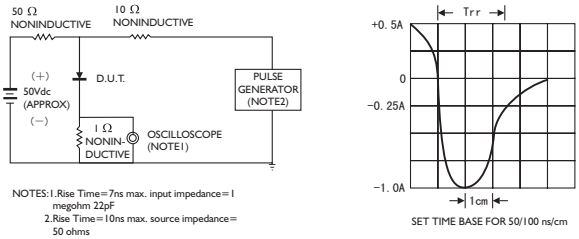
	Symbols	US3A	US3B	US3D	US3F	US3G	US3J	US3K	US3M	Units
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	50	100	200	300	400	600	800	1000	Volts
Maximum RMS Voltage	V_{RMS}	35	70	140	210	280	420	560	700	Volts
Maximum DC Blocking Voltage	V_{DC}	50	100	200	300	400	600	800	1000	Volts
Maximum Average Forward Rectified Current	$I_{(AV)}$	3.0								Amp
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	I_{FSM}	100								Amps
Maximum Instantaneous Forward Voltage at 3.0 A	V_F	1.0				1.3	1.7			Volts
Maximum DC Reverse Current at rated DC blocking voltage T_A=25 °C	I_R	5. 0								μA
Maximum DC Reverse Current at rated DC blocking voltage T_A=100 °C	I_R	250								μA
Maximum reverse recovery time(Note1)	T_{rr}	50					75			ns
Typical junction capacitance(Note2)	C_J	25								pF
Operating junction and storage temperature range	T_J T_{STG}	-50 to+150								°C

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

2.Measured at 1MHz and applied reverse voltage of 4.0 Volts.

RATINGS AND CHARACTERISTIC CURVES US3A THRU US3M

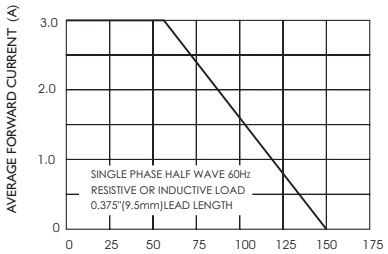
FIG.1-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



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

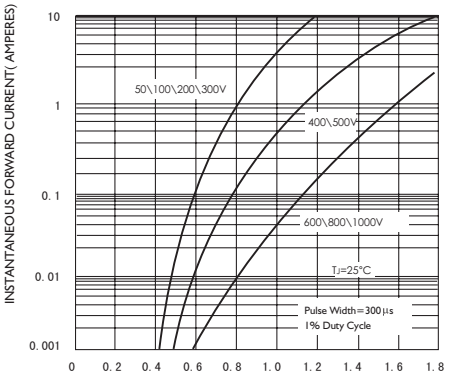
SET TIME BASE FOR 50/100 ns/cm

FIG.2-TYPICAL FORWARD CURRENT DERATING CURVE



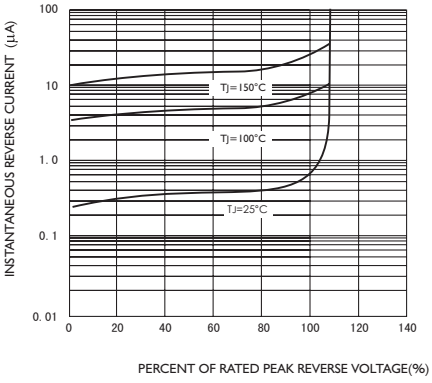
AMBIENT TEMPERATURE (°C)

FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



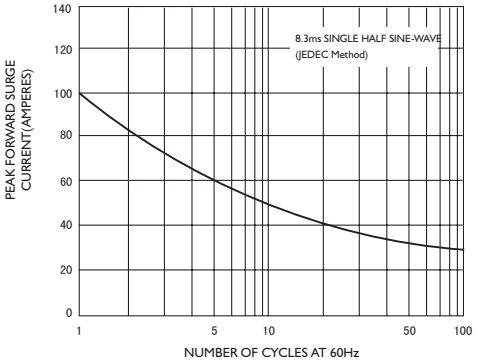
INSTANTANEOUS FORWARD VOLTAGE (VOLTS)

FIG.4-TYPICAL REVERSE CHARACTERISTICS



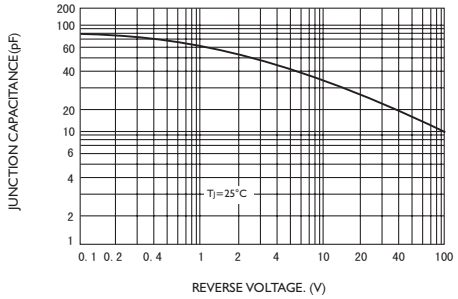
PERCENT OF RATED PEAK REVERSE VOLTAGE(%)

FIG.5-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT



NUMBER OF CYCLES AT 60Hz

FIG.6-TYPICAL JUNCTION CAPACITANCE



REVERSE VOLTAGE. (V)