



SURFACE MOUNT HIGH EFFICIENCY RECTIFIER

US3A THRU US3M

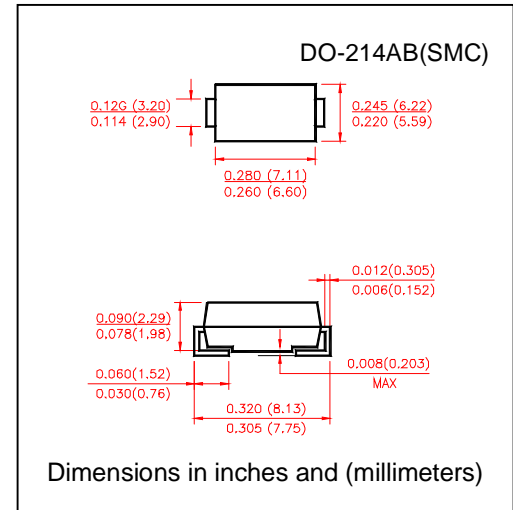
VOLTAGE RANGE 50 to 1000 Volts
CURRENT 3.0 Ampere

FEATURES

- Plastic package has underwrites laboratory flammability Classification 94V-0
- Glass passivated chip junction
- Built-in strain relief,
- Fast switching speed for high efficiency
- High temperature soldering guaranteed:
250°C/10 seconds

MECHANICAL DATA

- Case: JEDED DO-214AB transfer molded plastic
- Terminals: Solder plated, solderable per MIL-STD-750, method 2026
- Polarity: Color band denotes cathode end
- Weight: 0.007 ounce, 0.25 gram



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%.

	SYMBOLS	US3A	US3B	US3D	US3G	US3J	US3K	US3M	UNIT
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 At $T_L=105^\circ\text{C}$ (NOTE 1)	$I_{(AV)}$	3.0							Amps
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 3.0A	V_F	1.0			1.3	1.7			Volts
Maximum DC Reverse Current at rated DC Blocking Voltage at	$T_A = 25^\circ\text{C}$	10							μA
	$T_A = 125^\circ\text{C}$	200							
Maximum Reverse Recovery Time Test conditions $I_F=0.5\text{A}$, $I_R=1.0\text{A}$, $I_{RR}=0.25\text{A}$	t_{rr}	50				100			nS
Typical Junction Capacitance (Measured at 1.0MHz and applied reverse voltage of 4.0V)	C_J	80				50			pF
Typical Thermal Resistance (Note 1)	$R_{\theta JA}$	55							$^\circ\text{C}/\text{W}$
	$R_{\theta JL}$	17							
Operating Junction Temperature	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 P.C.B. with $0.3 \times 0.3''$ ($8.0 \times 8.0\text{mm}$) copper pad areas.



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RATING AND CHARACTERISTIC CURVES US3A THRU US3M

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

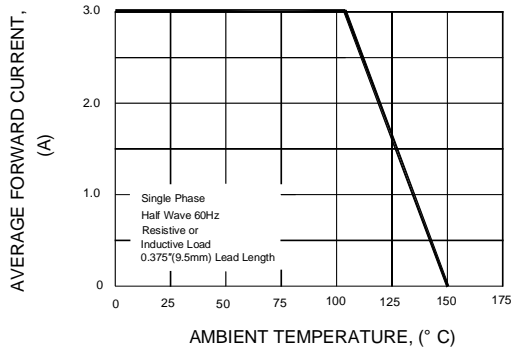


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

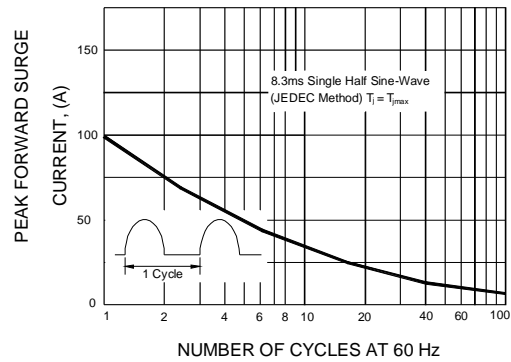


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

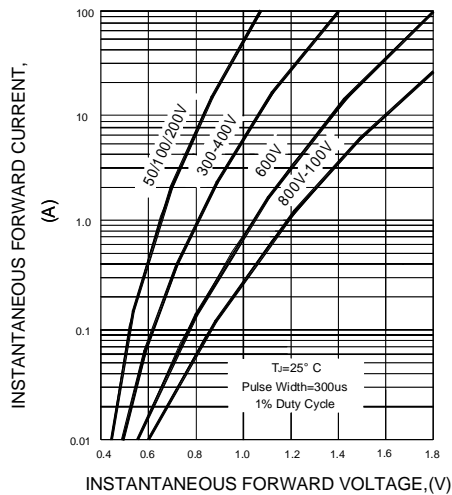


FIG.4-TYPICAL REVERSE CHARACTERISTICS

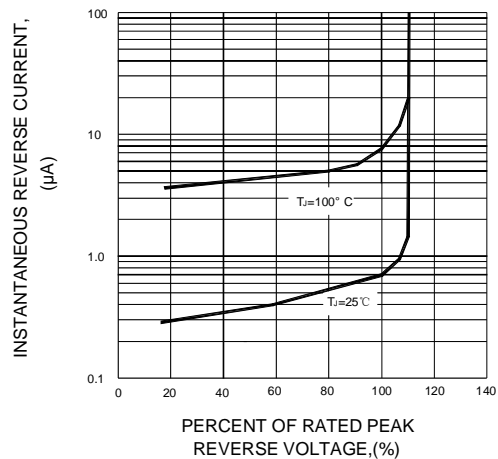


FIG.5-TYPICAL JUNCTION CAPACITANCE

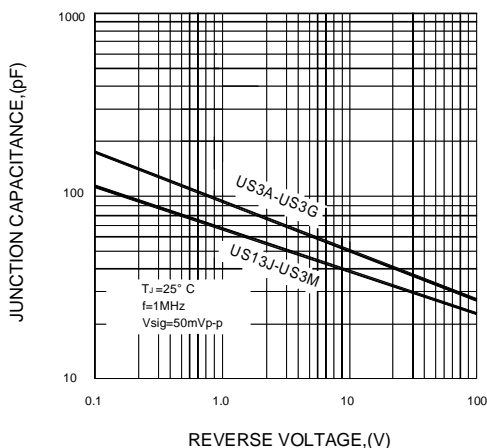
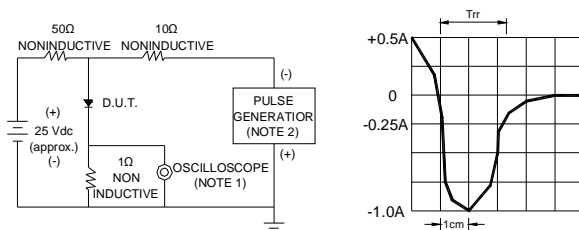


FIG.6-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



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

SET TIME BASE FOR 50/100ns/cm