



FUKUCOM COMPANY LTD.

福 靈 有 限 公 司

FLAT P, 3/F., EVEREST INDUSTRIAL CENTRE, 396 KWUN TONG ROAD,
KWUN TONG, KOWLOON, HONG KONG.

TEL: 852-2790 0314 FAX: 852-2790 0206



MASTER INSTRUMENT CORPORATION

High Efficient Surface Mount Rectifiers
US1A THRU US1M

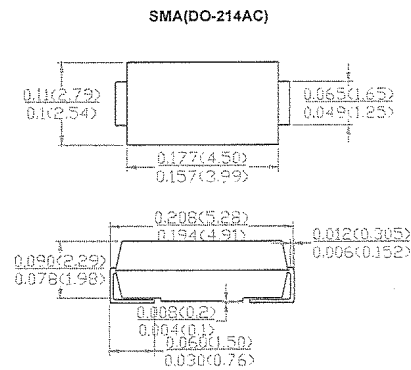
VOLTAGE RANGE 50 to 1000 Volts
Forward Current 1.0 Amperes

FEATURES

- Fast surface mounted applications
- Glass passivated junction.
- Ultra-Fast recovery time for high efficiency.
- Plastic material used carries Underwriters Laboratory Classification 94v-0.
- High temperature soldering guaranteed:
250°C/10 second, at terminals

MECHANICAL DATA

- Case: Molded plastic
- Polarity: Indicated by cathode band
- Mounting position: Any
- Weight: 0.064 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	US1A	US1B	US1D	US1G	US1J	US1K	US1M	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, See Fig2	$I_{(AV)}$	1.0							Amps
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	30							Amps
Maximum Instantaneous Forward Voltage Drop per bridge element at 1.5A	V_F	1.0		1.3		1.7		Volts	
Maximum DC Reverse Current at rated DC blocking voltage per element	$T_A=25^\circ\text{C}$	5.0							μA
	$T_A=100^\circ\text{C}$	100							
Maximum Reverse Recovery Time (Note 1)	T_{rr}	50					75		nS
Typical Junction Capacitance (Note 2)	C_j	15					15		pF
Operating and Storage Temperature Range	T_j	-65 to +150							$^\circ\text{C/W}$
Storage Temperature Range	T_{STG}	-65 to +150							$^\circ\text{C}$

NOTES:

1. Reverse Recovery Test Conditions :IF=0.5A IR=1.0A IRR=0.25A
2. Measured at 1.0 MHz and applied reverse voltage of 4.0 Volts.
3. Thermal resistance junction to terminal 6.0 mm² copper pads to each terminal.



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RATINGS AND CHARACTERISTIC CURVES US1A THRU US1M

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

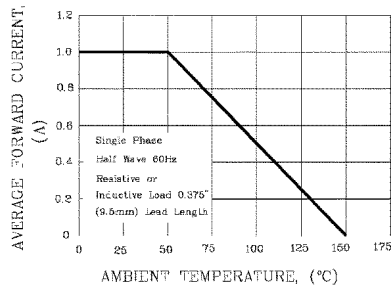


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

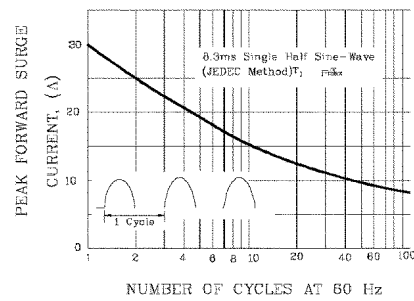


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

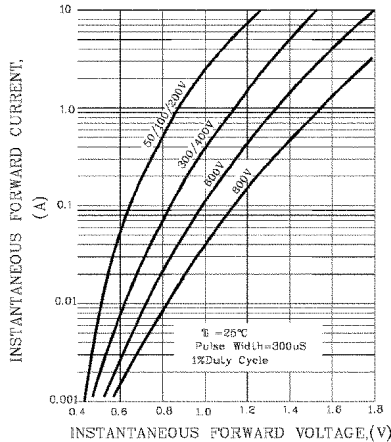


FIG.4-TYPICAL REVERSE CHARACTERISTICS

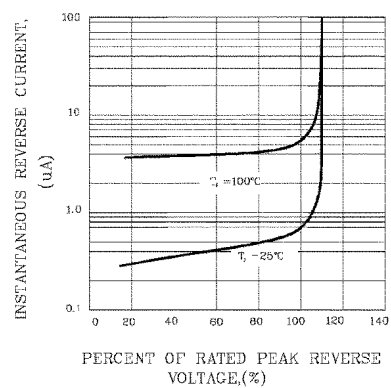


FIG.5-TYPICAL JUNCTION CAPACITANCE

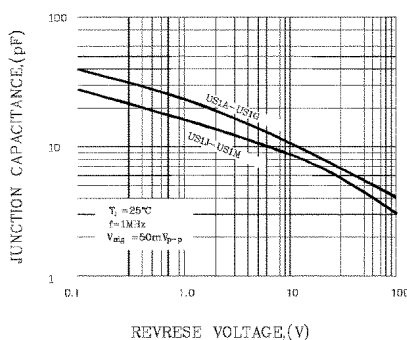
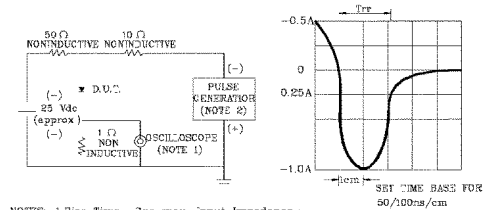


FIG.6-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



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