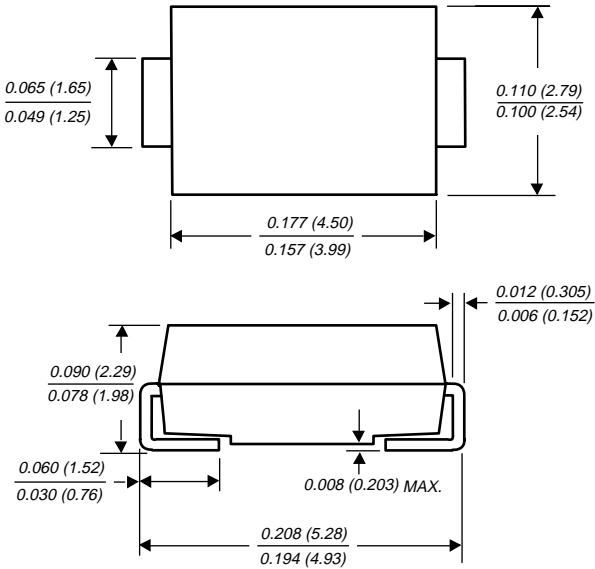


# US1A THRU US1J

**SURFACE MOUNT ULTRAFAST EFFICIENT RECTIFIER**  
*Reverse Voltage - 50 to 600 Volts      Forward Current - 1.0 Ampere*

## DO-214AC



Dimensions in inches and (millimeters)

## FEATURES

- ◆ Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- ◆ For surface mount applications
- ◆ Glass passivated chip junctions
- ◆ Low profile package
- ◆ Easy pick and place
- ◆ Ultrafast recovery times for high efficiency
- ◆ Low forward voltage, low power loss
- ◆ Built-in strain relief, ideal for automated placement
- ◆ High temperature soldering guaranteed: 250°C/10 seconds on terminals



## MECHANICAL DATA

**Case:** JEDEC DO-214AC molded plastic body over passivated chip

**Terminals:** Solder plated, solderable per MIL-STD-750, Method 2026

**Polarity:** Color band denotes cathode end

**Weight:** 0.002 ounces, 0.064 gram

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

	SYMBOLS	US1A	US1B	US1D	US1G	US1J	UNITS
Device Marking Code		UA	UB	UD	UG	UJ	
Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	200	400	600	Volts
Maximum RMS voltage	$V_{RMS}$	35	70	140	280	420	Volts
Maximum DC blocking voltage	$V_{DC}$	50	100	200	400	600	Volts
Maximum average forward rectified current at $T_L=110^\circ\text{C}$	$I_{(AV)}$	1.0					Amp
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	30.0					Amps
Maximum instantaneous forward voltage at 1.0A	$V_F$	1.0				1.7	Volts
Maximum DC reverse current at rated DC blocking voltage $T_A=25^\circ\text{C}$ $T_A=100^\circ\text{C}$	$I_R$	10.0 50.0					$\mu\text{A}$
Maximum reverse recovery time (NOTE 1)	$t_{rr}$	50.0				75.0	ns
Typical junction capacitance (NOTE 2)	$C_J$	17.0				15.0	pF
Maximum thermal resistance (NOTE 3)	$R_{\theta JA}$ $R_{\theta JL}$	75.0 27.0					$^\circ\text{C/W}$
Operating and storage temperature range	$T_J, T_{STG}$	-55 to +150					$^\circ\text{C}$

### NOTES:

- (1) Reverse recovery test conditions:  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $I_{rr}=0.25\text{A}$
- (2) Measured at 1.0 MHz and applied reverse voltage of 4.0 Volts
- (3) P.C.B. mounted on 0.2 x 0.2" (5.0 x 5.0mm) copper pad area

# RATING AND CHARACTERISTIC CURVES US1A THRU US1J

FIG. 1 - FORWARD CURRENT DERATING CURVE

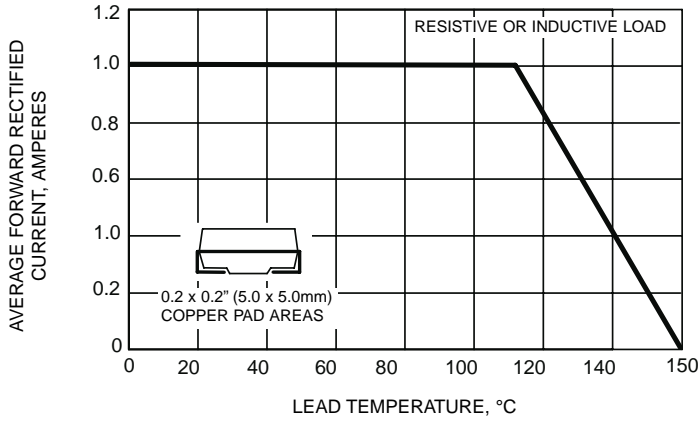


FIG. 2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

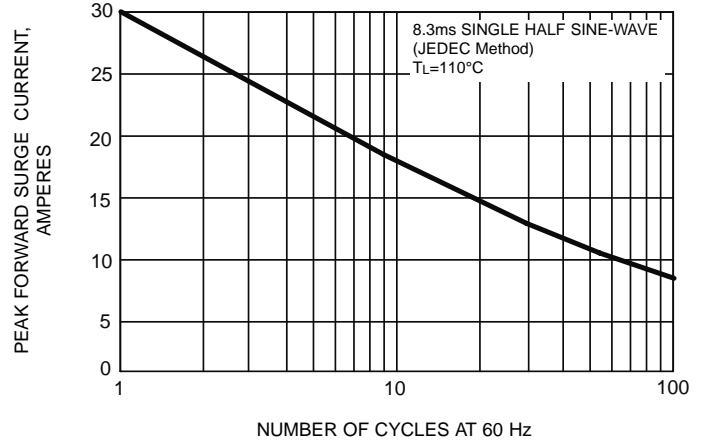


FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

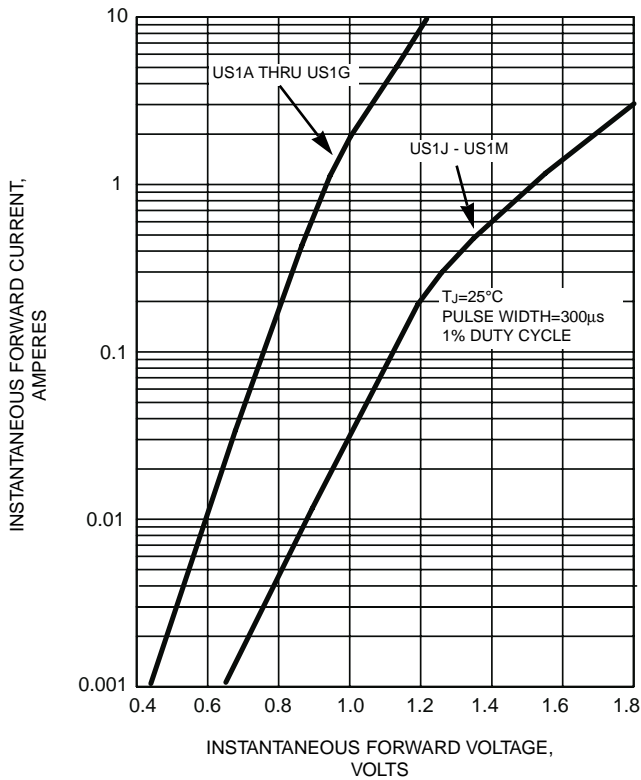


FIG. 4 - TYPICAL REVERSE LEAKAGE CHARACTERISTICS

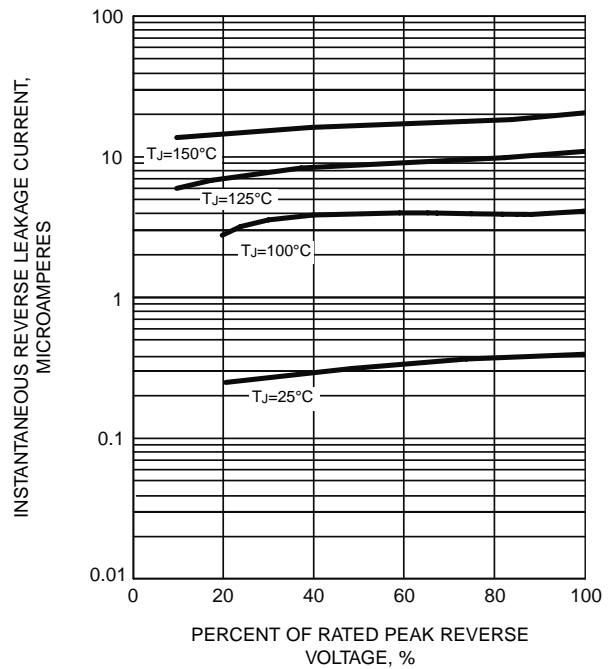


FIG. 5 - TYPICAL JUNCTION CAPACITANCE

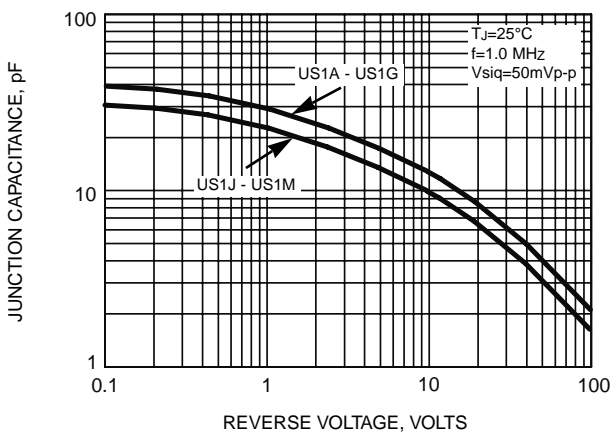


FIG. 6 - TYPICAL TRANSIENT THERMAL IMPEDANCE

