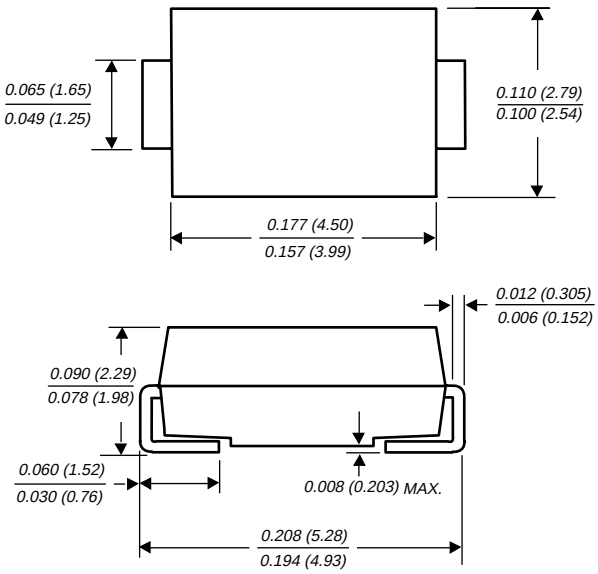
US1A THRU US1J

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°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 T_A=25°C at rated DC blocking voltage T_A=100°C	I_R	10.0 50.0					µA
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					°C/W
Operating and storage temperature range	T_J, T_{STG}	-55 to +150					°C

NOTES:
(1) Reverse recovery test conditions: I_F=0.5A, I_R=1.0A, I_{rr}=0.25A
(2) Measured at 1.0 MH_Z 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

GENERAL SEMICONDUCTOR®

RATING AND CHARACTERISTIC CURVES US1A THRU US1J

FIG. 1 - FORWARD CURRENT DERATING CURVE

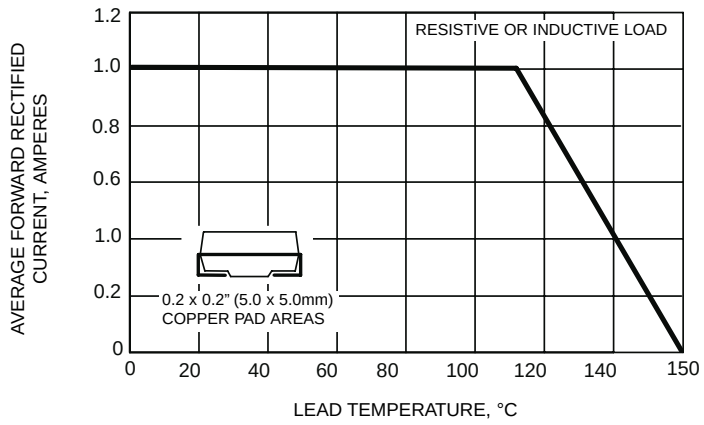


FIG.2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

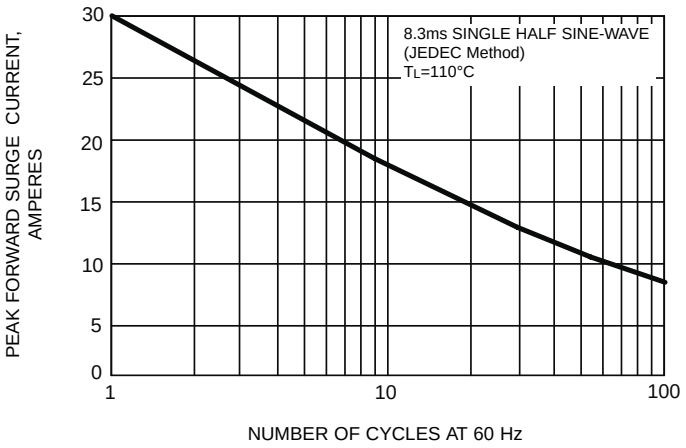


FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

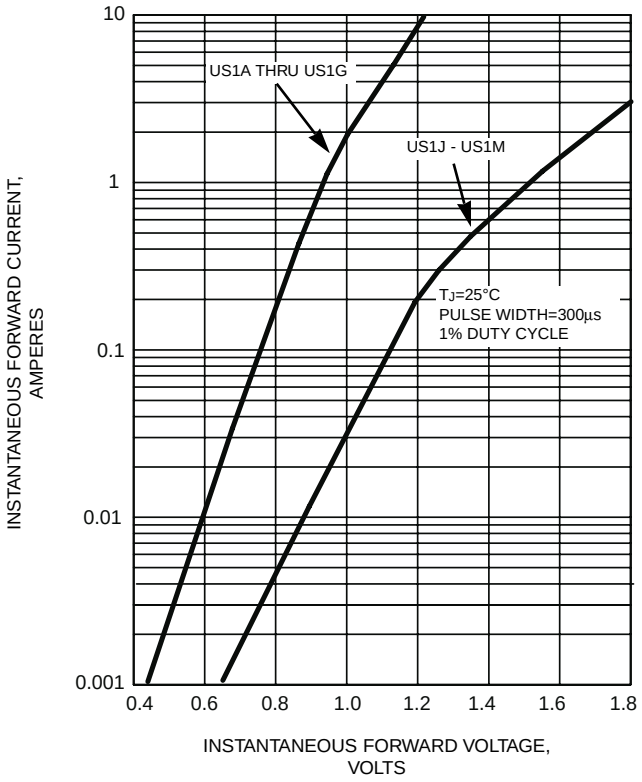


FIG. 4 - TYPICAL REVERSE LEAKAGE CHARACTERISTICS

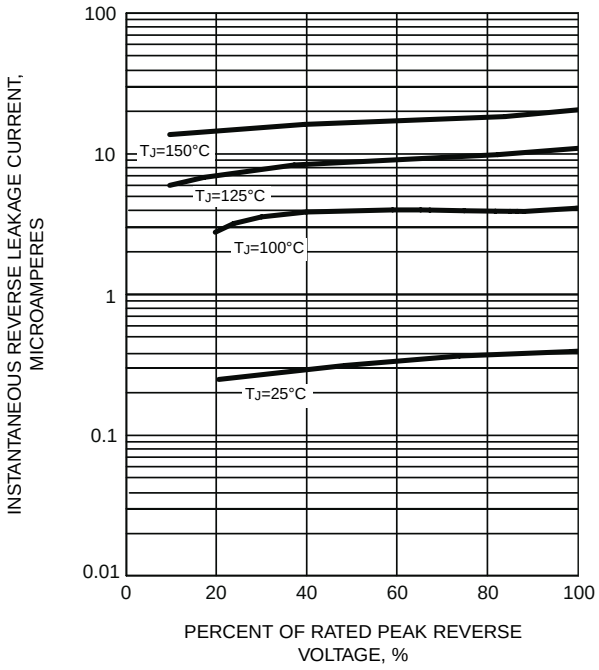


FIG. 5 - TYPICAL JUNCTION CAPACITANCE

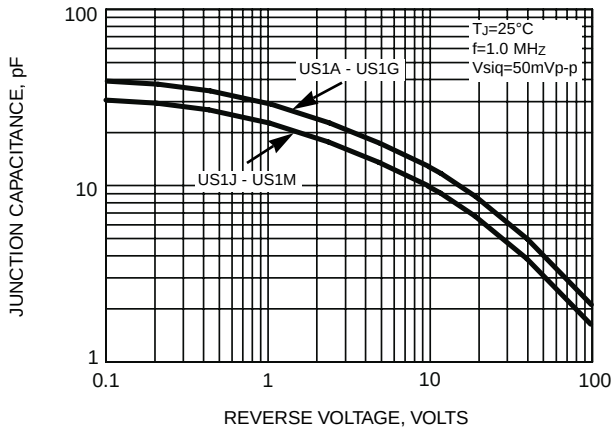
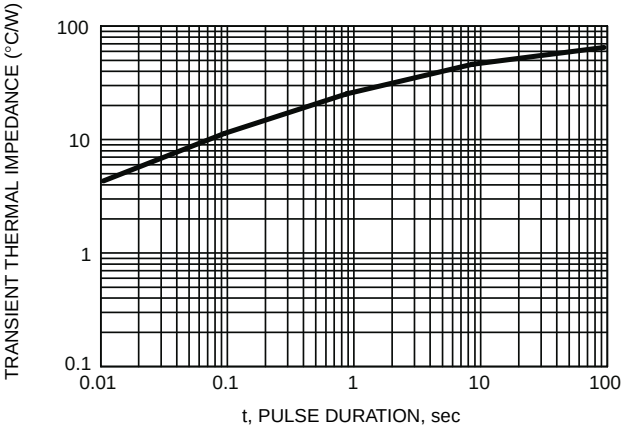


FIG. 6 - TYPICAL TRANSIENT THERMAL IMPEDANCE



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