

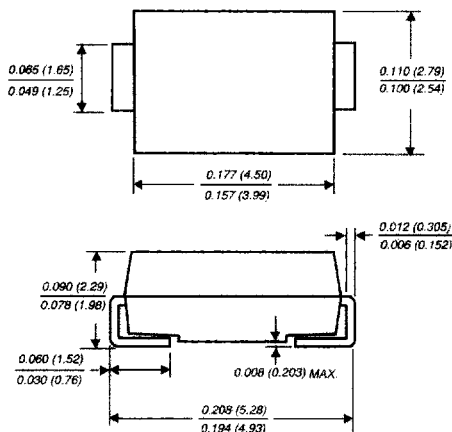
ES1A THRU ES1D

SURFACE MOUNT ULTRAFAST EFFICIENT PLASTIC RECTIFIER

Reverse Voltage - 50 to 200 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
- ◆ Low profile package
- ◆ Ideally suited for use in very high frequency switching power supplies, inverters and as a free wheeling diodes
- ◆ Ultrafast recovery times for high efficiency
- ◆ Low forward voltage
- ◆ Low leakage current
- ◆ Glass passivated chip junction
- ◆ 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	ES1A	ES1B	ES1C	ES1D	UNITS
Device marking code		EA	EB	EC	ED	
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	150	200	Volts
Maximum RMS voltage	V_{RMS}	35	70	105	140	Volts
Maximum DC blocking voltage	V_{DC}	50	100	150	200	Volts
Maximum average forward rectified current at $T_L=120^\circ\text{C}$	$I_{(AV)}$	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 0.6A at 1.0A	V_F	0.865 0.920				Volts
Maximum DC reverse current at rated DC blocking voltage $T_A=25^\circ\text{C}$ $T_A=100^\circ\text{C}$	I_R	5.0 100				μA
Maximum reverse recovery time (NOTE 1)	t_{rr}	15.0				ns
Maximum reverse recovery time (NOTE 2) $T_A=25^\circ\text{C}$ $T_A=100^\circ\text{C}$	t_{rr}	25.0 35.0				ns
Maximum stored charge (NOTE 2) $T_A=25^\circ\text{C}$ $T_A=100^\circ\text{C}$	Q_{rr}	10.0 25.0				nC
Typical junction capacitance (NOTE 3)	C_J	7.0				pF
Maximum thermal resistance (NOTE 4) $R_{\theta JA}$ $R_{\theta JL}$	$R_{\theta JA}$ $R_{\theta JL}$	85.0 35.0				$^\circ\text{C/W}$
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) t_{rr} and Q_{rr} measured at: $I_F=0.6\text{A}$, $V_R=30\text{V}$, $di/dt=50\text{A}/\mu\text{s}$, $I_{rr}=10\%$ I_{RM} for measurement of t_{rr}
- (3) Measured at 1.0 MHz and applied reverse voltage of 4.0 volts
- (4) P.C.B. mounted on 0.2 x 0.2" (5.0 x 5.0mm) copper pad area

RATINGS AND CHARACTERISTIC CURVES ES1A THRU ES1D

FIG. 1 - MAXIMUM FORWARD CURRENT DERATING CURVE

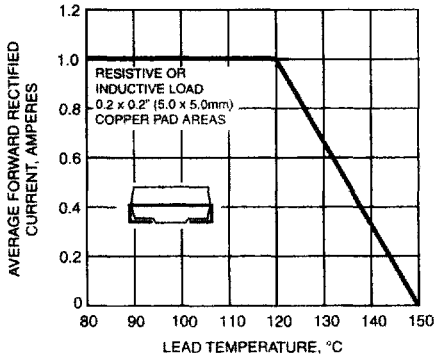


FIG. 2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

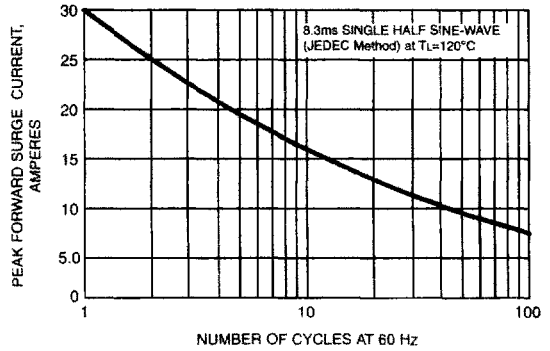


FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

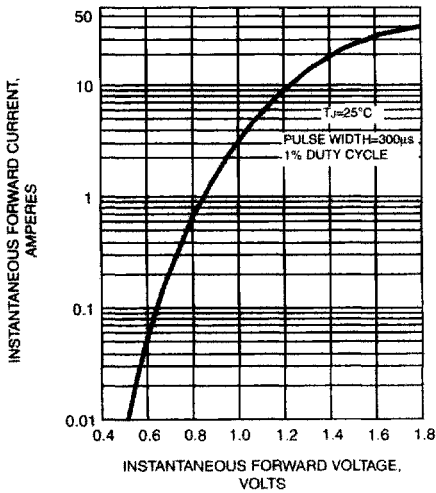


FIG. 4 - TYPICAL REVERSE LEAKAGE CHARACTERISTICS

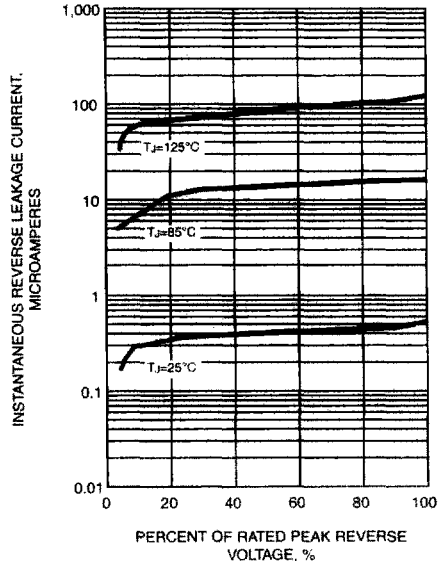


FIG. 5 - TYPICAL JUNCTION CAPACITANCE

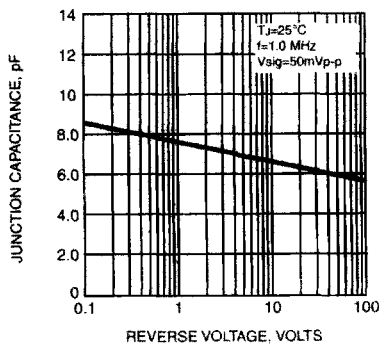


FIG. 5 - TYPICAL THERMAL IMPEDANCE

