

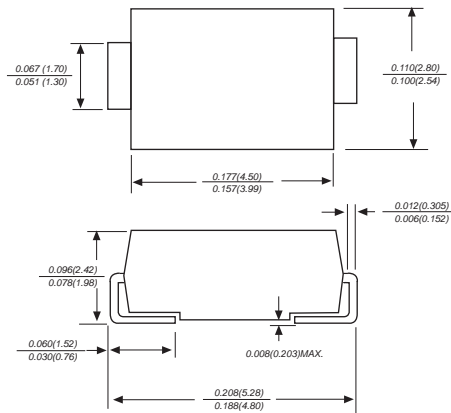


ES1A THRU ES1M

SURFACE MOUNT SUPER FAST RECTIFIER

Reverse Voltage - 50 to 600 Volts Forward Current - 1.0 Ampere

DO-214AC/SMA



Dimensions in inches and (millimeters)

FEATURES

- ◆ The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- ◆ For surface mounted applications
- ◆ Low reverse leakage
- ◆ Built-in strain relief, ideal for automated placement
- ◆ High forward surge current capability
- ◆ High temperature soldering guaranteed: 250°C/10 seconds at terminals
- ◆ Glass passivated chip junction

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

Mounting Position: Any

Weight: 0.002 ounce, 0.07 grams

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 current derate by 20%.

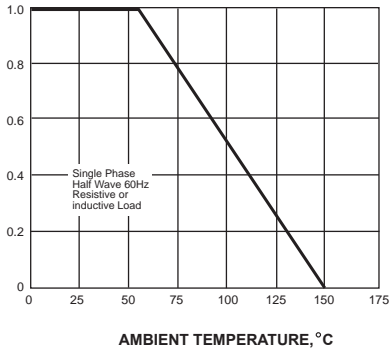
TYPE NUMBER	SYMBOLS	ES1A	ES1B	ES1C	ES1D	ES1E	ES1G	ES1J	ES1K	ES1M	UNITS	
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	150	200	300	400	600	600	600	VOLTS	
Maximum RMS voltage	V_{RMS}	35	70	105	140	210	280	420	420	420	VOLTS	
Maximum DC blocking voltage	V_{DC}	50	100	150	200	300	400	600	600	600	VOLTS	
Maximum average forward rectified current at $T_L=55^\circ\text{C}$	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	0.95			1.25		1.7				Volts	
Maximum DC reverse current $T_A=25^\circ\text{C}$ at rated DC blocking voltage $T_A=100^\circ\text{C}$	I_R	5.0				50.0						μA
Maximum reverse recovery time (NOTE 1)	t_{rr}	35									ns	
Typical junction capacitance (NOTE 2)	C_J	15.0									pF	
Typical thermal resistance (NOTE 3)	$R_{\theta JA}$	60.0									$^\circ\text{C}/\text{W}$	
Operating junction and storage temperature range	T_J, T_{STG}	-50 to +150									$^\circ\text{C}$	

Note: 1. Reverse recovery condition $I_F=0.5\text{A}$, $I_R=1.0\text{A}$, $I_{rr}=0.25\text{A}$
 2. Measured at 1MHz and applied reverse voltage of 4.0V D.C.
 3. P.C.B. mounted with 0.2x0.2" (5.0x5.0mm) copper pad areas

ES1A THRU ES1M

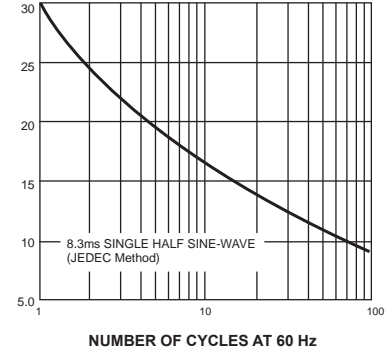
AVERAGE FORWARD RECTIFIED CURRENT,
AMPERES

FIG. 1- FORWARD CURRENT DERATING CURVE



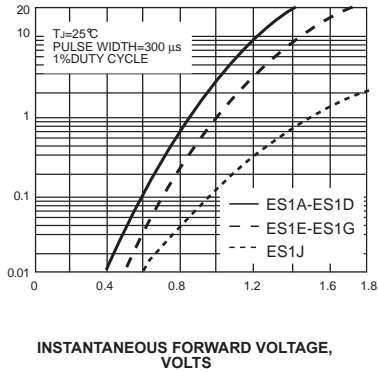
PEAK FORWARD SURGE CURRENT,
AMPERES

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



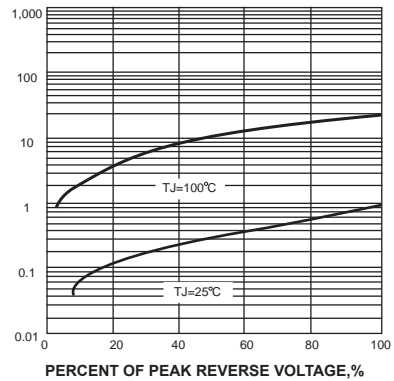
INSTANTANEOUS FORWARD CURRENT, AMPERES

FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



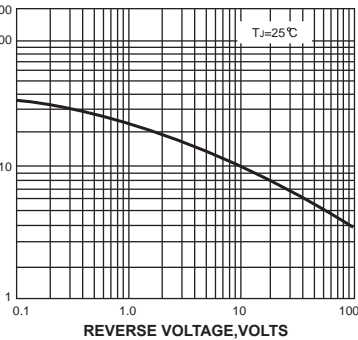
INSTANTANEOUS REVERSE CURRENT,
MICROAMPERES

FIG. 4-TYPICAL REVERSE CHARACTERISTICS



JUNCTION CAPACITANCE, pF

FIG. 5-TYPICAL JUNCTION CAPACITANCE



TRANSIENT THERMAL IMPEDANCE,
 $^\circ\text{C}/\text{W}$

FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE

