



ES8A THRU ES8J

SURFACE MOUNT SUPER FAST RECTIFIER

Reverse Voltage - 50 to 600 Volts Forward Current - 8.0 Amperes

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-214AB molded plastic body over passivated chip

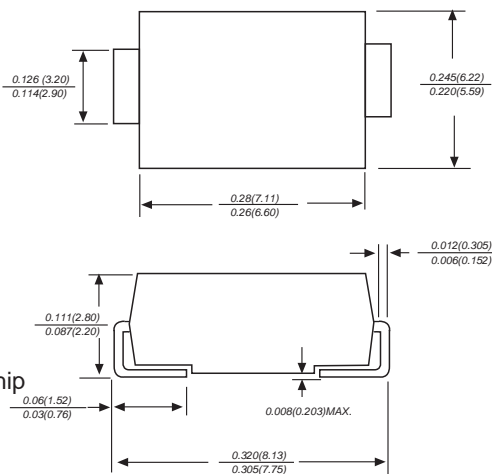
Terminals: Solder plated, solderable per MIL-STD-750, Method 2026

Polarity: Color band denotes cathode end

Mounting Position: Any

Weight: 0.0088 ounce, 0.25grams

DO-214AB



Dimensions in inches and (millimeters)

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%.

	SYMBOLS	ES8A	ES8B	ES8C	ES8D	ES8E	ES8G	ES8J	UNITS
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	150	200	300	400	600	V
Maximum RMS voltage	V_{RMS}	35	70	105	140	210	280	420	V
Maximum DC blocking voltage	V_{DC}	50	100	150	200	300	400	600	V
Maximum average forward rectified current at $T_L=100^\circ\text{C}$	$I_{(AV)}$	8.0							A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	175.0							A
Maximum instantaneous forward voltage at 8.0A	V_F	0.95			1.25		1.7		V
Maximum DC reverse current at rated DC blocking voltage $T_A=25^\circ\text{C}$ $T_A=125^\circ\text{C}$	I_R	5.0			150.0		μA		
Maximum reverse recovery time (NOTE 1)	t_{rr}	35			ns				
Typical junction capacitance (NOTE 2)	C_J	58.0			pF				
Typical thermal resistance (NOTE 3)	$R_{\theta JA}$	55.0			$^\circ\text{C}/\text{W}$				
Operating junction and storage temperature range	T_J, T_{STG}	-55 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.

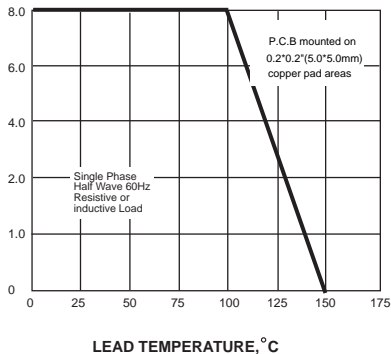
3. P.C.B. mounted with 0.2x0.2" (5.0x5.0mm) copper pad areas



RATINGS AND CHARACTERISTIC CURVES ES8A THRU ES8J

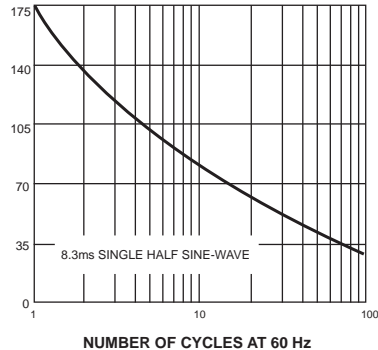
AVERAGE FORWARD RECTIFIED CURRENT, AMPERES

FIG. 1- FORWARD CURRENT DERATING CURVE



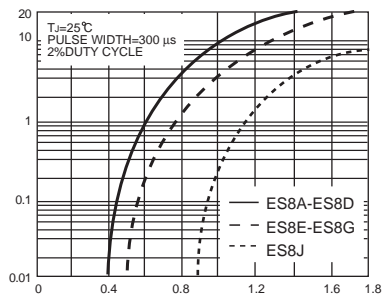
PEAK FORWARD SURGE CURRENT, AMPERES

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



INSTANTANEOUS FORWARD CURRENT, AMPERES

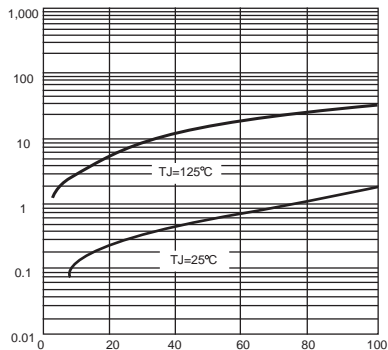
FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



INSTANTANEOUS FORWARD VOLTAGE, VOLTS

INSTANTANEOUS REVERSE CURRENT, MICROAMPERES

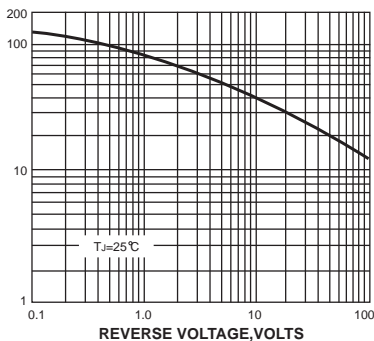
FIG. 4-TYPICAL REVERSE CHARACTERISTICS



PERCENTAGE OF PEAK REVERSE VOLTAGE, %

JUNCTION CAPACITANCE, pF

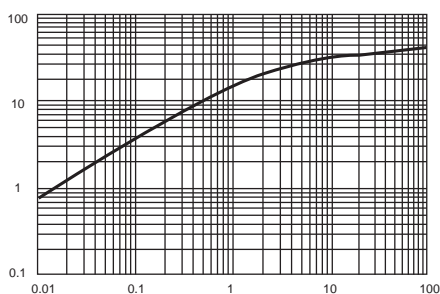
FIG. 5-TYPICAL JUNCTION CAPACITANCE



REVERSE VOLTAGE, VOLTS

TRANSIENT THERMAL IMPEDANCE, °C/W

FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE



t, PULSE DURATION, sec.