



Super Fast Surface Mount Rectifiers

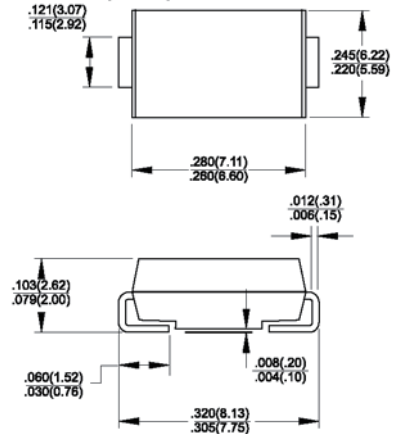
Reverse Voltage 50 to 1000 Volts Forward Current 5.0 Amperes

Features

- ◆ Glass passivated junction chip
- ◆ For surface mounted application
- ◆ Low profile package
- ◆ Built-in strain relief
- ◆ Ideal for automated placement
- ◆ Easy pick and place
- ◆ Superfast recovery time for high efficiency
- ◆ Glass passivated chip junction
- ◆ High temperature soldering:
250°C/10 seconds at terminals
- ◆ Plastic material used carries Underwriters Laboratory
Classification 94V-O



DO-214AB (SMC)



Dimensions in inches and (millimeters)

Mechanical Data

- ◆ Cases: Molded plastic
- ◆ Terminals: Solder plated
- ◆ Polarity: Indicated by cathode band
- ◆ Weight: 0.007 ounce, 0.21 gram

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, derate current by 20%

Parameter	Symbols	ES 5A	ES 5B	ES 5C	ES 5D	ES 5F	ES 5G	ES 5J		Units	
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	150	200	300	400	600		Volts	
Maximum RMS voltage	V_{RMS}	35	70	105	140	210	280	420		Volts	
Maximum DC blocking voltage	V_{DC}	50	100	150	200	300	400	600		Volts	
Maximum average forward rectified current See Fig. 1	$I_{(AV)}$						5.0				Amps
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) @ $T_L=100^\circ\text{C}$	I_{FSM}						150.0				Amps
Maximum instantaneous forward voltage @ 5.0A	V_F	0.95			1.3		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						10.0 300			μA μA	
Maximum reverse recovery time (Note 1)	t_{rr}						35				nS
Typical junction capacitance (Note 2)	C_J						58				pF
Typical thermal resistance (Note 3)	$R_{\theta JA}$ $R_{\theta JL}$						47 12				$^\circ\text{C}/\text{W}$
Operating junction temperature range	T_J						-55 to +150				$^\circ\text{C}$
Storage temperature range	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 MHz and Applied $V_R=4.0\text{ Volts}$
 3. Units Mounted on P.C.B. with 0.31 x 0.31" (8.0 x 8.0mm) Copper Pad Areas

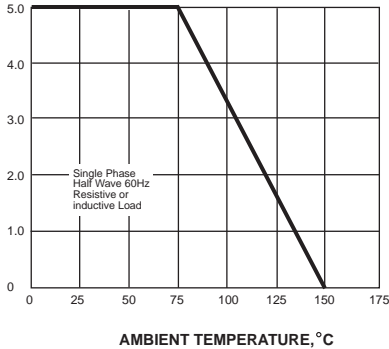


ES5A ~ ES5J

RATINGS AND CHARACTERISTIC CURVES ES5A THRU ES5J

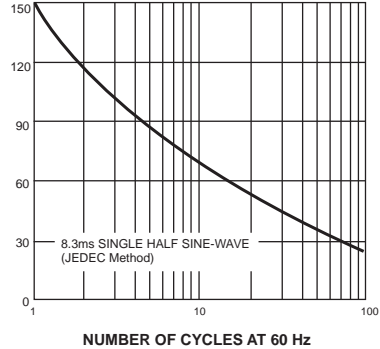
AVERAGE FORWARD RECTIFIED CURRENT,
AMPERES

FIG. 1- FORWARD CURRENT DERATING CURVE



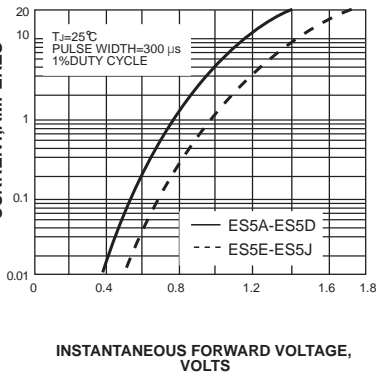
PEAK FORWARD SURGE CURRENT,
AMPERES

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



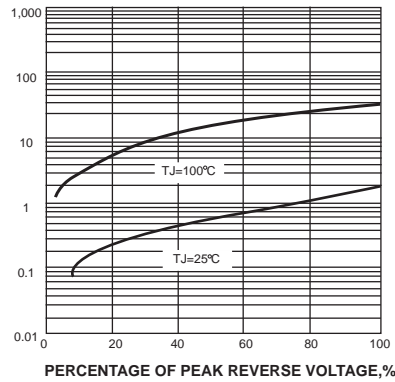
INSTANTANEOUS FORWARD CURRENT, AMPERES

FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



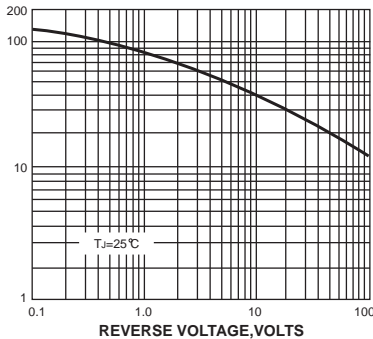
INSTANTANEOUS REVERSE CURRENT,
MICROAMPERES

FIG. 4-TYPICAL REVERSE CHARACTERISTICS



JUNCTION CAPACITANCE, pF

FIG. 5-TYPICAL JUNCTION CAPACITANCE



TRANSIENT THERMAL IMPEDANCE,
°C/W

FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE

