

# Kingtronics®

# ES3A THRU ES3J

## SURFACE MOUNT SUPER FAST RECTIFIER

**VOLTAGE RANGE** 50 to 600 Volts    **CURRENT** 3.0 Ampere

### FEATURES

- Plastic package has underwrites laboratory
- Flammability Classification 94V-0
- Glass passivated chip junction
- Built-in strain relief,
- Suoper Fast switching speed for high efficiency
- High temperature soldering guaranteed: 260°C/10 seconds

### MECHANICAL DATA

- Case:** JEDED DO-214AB transfer molded plastic
- Terminals:** Solder plated, solderable per MIL-STD-750 Method 2026
- Polarity:** Color band denotes cathode end
- Weight:** 0.007 ounce, 0.25 gram

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

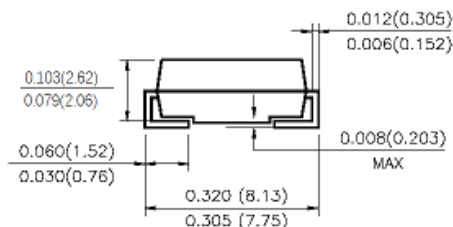
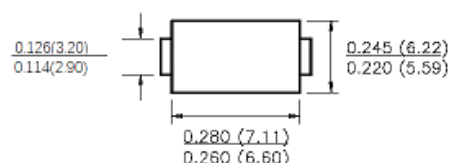
Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load derate current by 20%.

PARAMETER	SYMBOLS	ES3A	ES3B	ES3C	ES3D	ES3E	ES3G	ES3J	UNIT
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 at $T_L = 100^\circ\text{C}$	$I_{(AV)}$	3.0							Amps
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC method)	$I_{FSM}$	100							Amps
Maximum Instantaneous Forward Voltage @ 3.0A	$V_F$	0.95				1.25		1.7	Volts
Maximum DC Reverse Current at rated DC Blocking Voltage per element	$T_A = 25^\circ\text{C}$	5.0							$\mu\text{A}$
	$T_A = 125^\circ\text{C}$	300							
Typical Reverse Recovery Time Test conditions $I_F = 0.5\text{A}$ , $I_R = 1.0\text{A}$ , $I_{RR} = 0.25\text{A}$	$t_{rr}$	35							nS
Typical Junction Capacitance (Measured at 1.0MHz and applied reverse voltage of 4.0V)	$C_J$	45				30			pF
Typical Thermal Resistance (Note 1)	$R_{\theta JA}$	55							$^\circ\text{C/W}$
	$R_{\theta JL}$	17							
Operating Junction Temperature Range	$T_J$	-55 to +150							$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-55 to +150							$^\circ\text{C}$

1. Thermal resistance from Junction to ambient and from junction to lead mounted on P.C.B. with 0.3"×0.3"(8.0mm × 8.0mm) copper pad areas.

**Kingtronics® International Company**

### DO-214AB (SMC)



Dimensions in inches and (millimeters)

## RATINGS AND CHARACTERISTIC CURVES

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

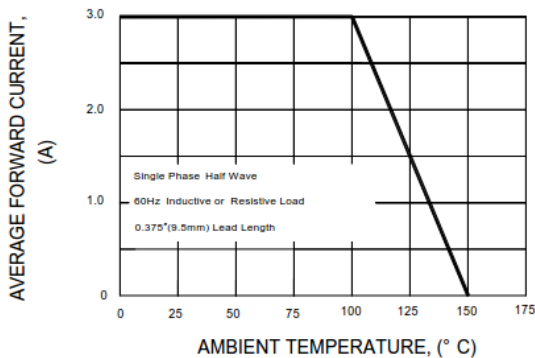


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

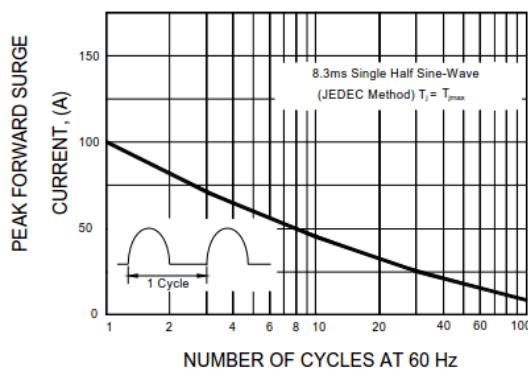


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

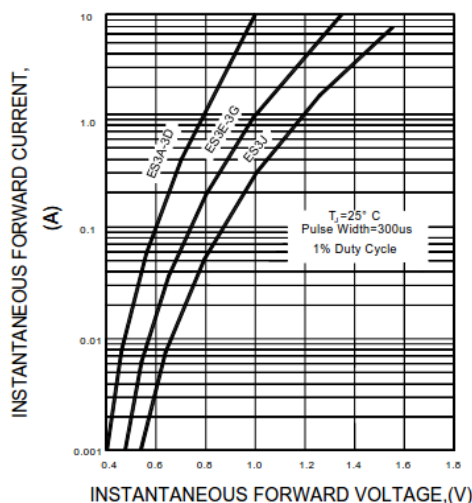


FIG.4-TYPICAL REVERSE CHARACTERISTICS

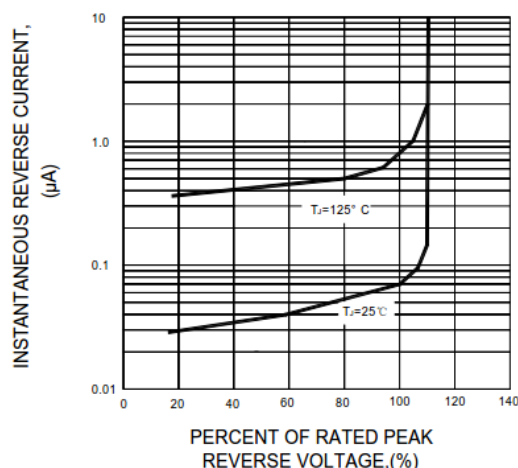


FIG.5-TYPICAL JUNCTION CAPACITANCE

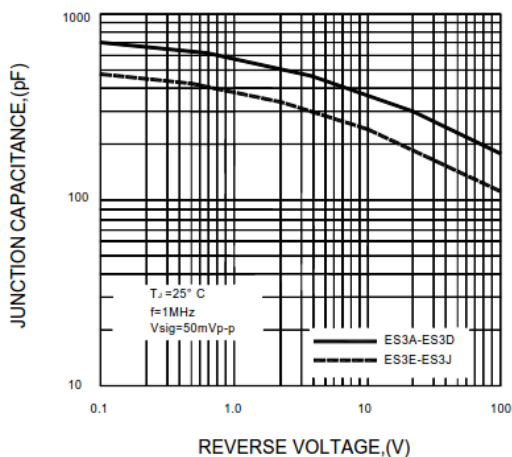
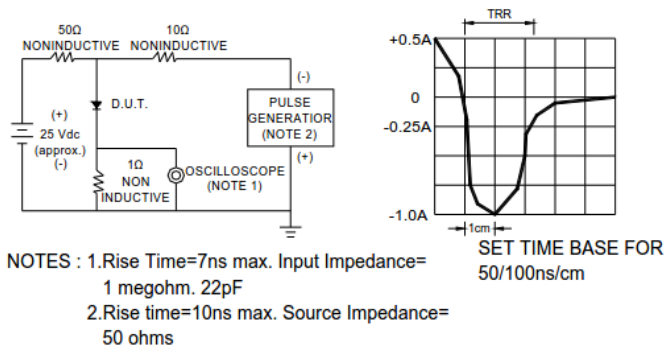


FIG.6-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



Note: Specifications are subject to change without notice.