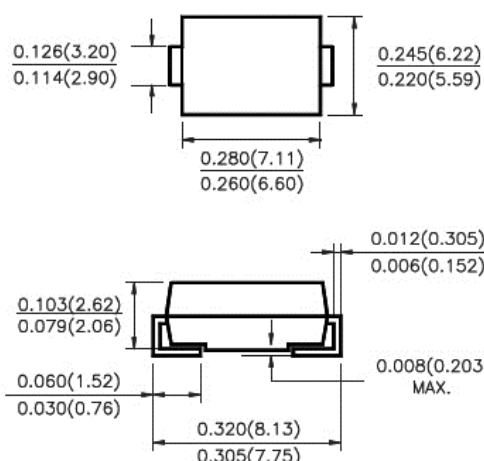


**Kingtronics**®**US5A THRU US5M****SURFACE MOUNT SUPER FAST RECTIFIER****REVERSE VOLTAGE 50 to 1000 Volts FORWARD CURRENT 5.0 Ampere****FEATURES**

Plastic package has UL flammability Classification 94V-0  
 For surface mounted applications  
 Low profile package  
 Built-in strain relief, ideal for automated placement  
 Glass Passivated chip junction  
 High temperature soldering:  
 250°C/10 second at terminals

**MECHANICAL DATA**

Case: JEDED DO-214AA molded plastic over glass passivated chip  
 Terminals: Solder plated, Solderable per MIL-STD-750, Method 2026  
 Polarity: Color band denotes cathode end  
 Weight: 0.007 ounce, 0.25 gram

**DO-214AB (SMC)****MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS** Dimensions in inches and (millimeters)

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  | SYMBOL          | US5A                    | US5B | US5D | US5G | US5J | US5K | US5M | UNIT                      |
|--|-----------------|-------------------------|------|------|------|------|------|------|---------------------------|
| Maximum Repetitive Peak Reverse Voltage  | $V_{RRM}$       | 50                      | 100  | 200  | 400  | 600  | 800  | 1000 | VOLTS                     |
| Maximum RMS Voltage  | $V_{RMS}$       | 35                      | 70   | 140  | 280  | 420  | 560  | 700  | VOLTS                     |
| Maximum DC Blocking Voltage  | $V_{DC}$        | 50                      | 100  | 200  | 400  | 600  | 800  | 1000 | VOLTS                     |
| Maximum Average Forward Rectified Current<br>At $T_L=105^\circ\text{C}$ (NOTE 1)                               | $I_{(AV)}$      | 5.0                     |      |      |      |      |      |      | Amps                      |
| Peak Forward Surge Current 8.3ms single half sine-wave<br>superimposed on rated load (JEDEC Method)            | $I_{FSM}$       | 150                     |      |      |      |      |      |      | Amps                      |
| Maximum instantaneous forward voltage at 5.0A  | $V_F$           | 1.0                     |      | 1.3  |      | 1.7  |      |      | VOLTS                     |
| Maximum DC Reverse Current<br>at Rated DC blocking voltage at  | $I_R$           | $T_A=25^\circ\text{C}$  |      |      |      |      |      |      | uA                        |
|  |                 | $T_A=125^\circ\text{C}$ |      |      |      |      |      |      |                           |
| Maximum Reverse Recovery Time<br>Test conditions $I_F=0.5\text{A}$ , $I_R=1.0\text{A}$ , $I_{RR}=0.25\text{A}$ | $t_{rr}$        | 50                      |      |      |      | 100  |      |      | nS                        |
| Typical Junction Capacitance(Measured at 1.0MHz<br>and applied reverse voltage of 4.0V)                        | $C_J$           | 80                      |      |      |      | 50   |      |      | pF                        |
| Typical Thermal Resistance (NOTE 1)  | $R_{\theta JA}$ | 47                      |      |      |      |      |      |      | $^\circ\text{C}/\text{W}$ |
|  | $R_{\theta JL}$ | 13                      |      |      |      |      |      |      |                           |
| Operating Junction Temperature   | $T_J$           | -55 to +150             |      |      |      |      |      |      | $^\circ\text{C}$          |
| Storage Temperature Rang   | $T_{STG}$       | -55 to +150             |      |      |      |      |      |      | $^\circ\text{C}$          |

1- Thermal resistance from Junction to ambient and from junction to lead mounted on P.C.B. with  $0.3 \times 0.3''$  ( $8.0 \times 8.0\text{mm}$ ) copper pad areas

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## RATINGS AND CHARACTERISTIC CURVES

FIG. 1-TYPICAL FORWARD CURRENT DERATING CURVE

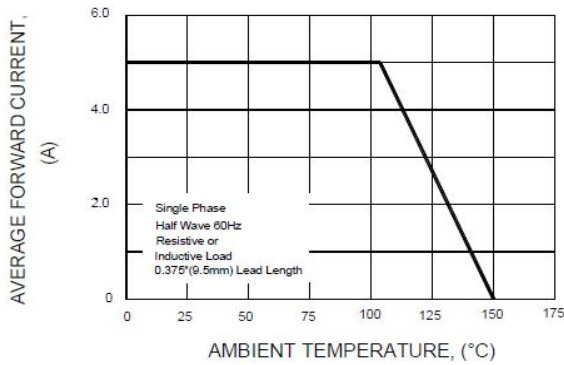


FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

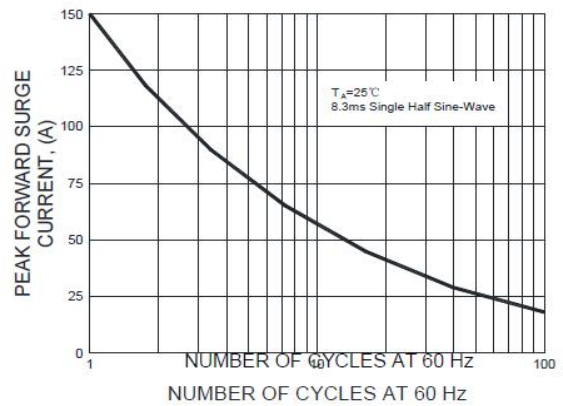


FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

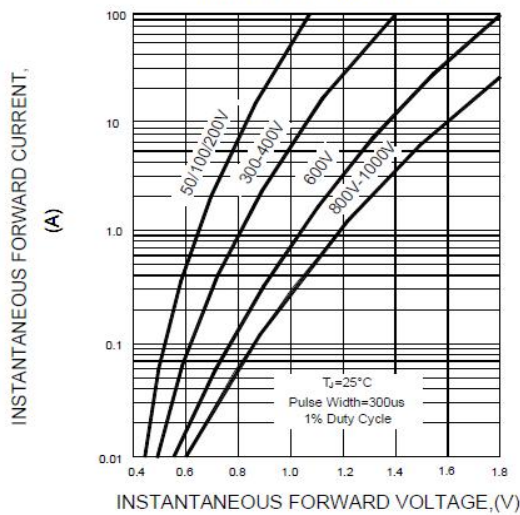


FIG. 4-TYPICAL REVERSE CHARACTERISTICS

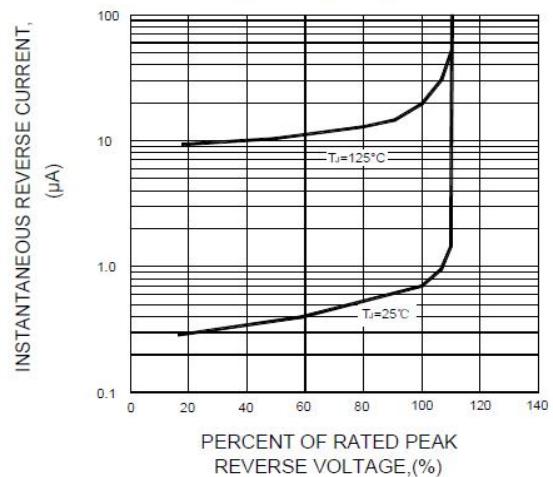


FIG. 5-TYPICAL JUNCTION CAPACITANCE

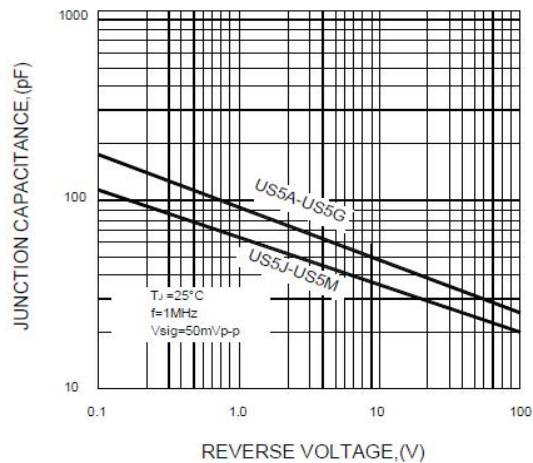
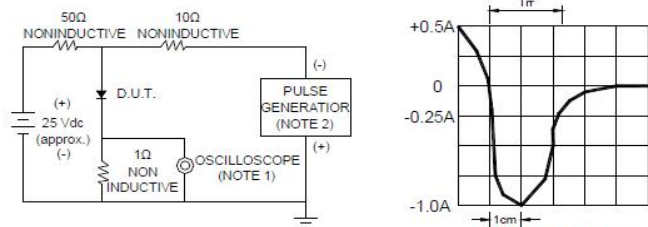


FIG. 6-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



- NOTES: 1. Rise Time=7ns max. Input Impedance= 1 megohm, 22pF  
2. Rise time=10ns max. Source Impedance= 50 ohms
- SET TIME BASE FOR 50/100ns/cm

Note: Specifications are subject to change without notice.