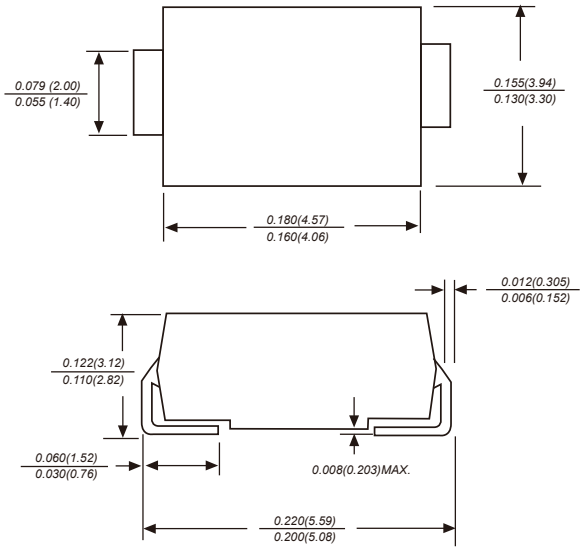
US5A THRU US5M

5.0 AMP Surface Mount High Efficiency Fast Recovery Rectifiers

FEATURES

The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
For surface mounted applications
Super fast switching for high efficiency
Low reverse leakage
Built-in strain relief,ideal for automated placement
High forward surge current capability
High temperature soldering guaranteed:
260°C/10 seconds at terminals

SMB / DO-214AA



Dimensions in inches and (millimeters)

MECHANICAL DATA

Case: JEDEC DO-214AA molded plastic body
Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
Polarity: Color band denotes cathode end
Mounting Position: Any
Weight:0.005 ounce, 0.138 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%.

	SYMBOLS	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 At T_L=105 (NOTE 1)	$I_{(AV)}$	5.0							Amps
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	180							Amps
Maximum Instantaneous Forward Voltage at 3.0A	V_F	1.0			1.3	1.7			Volts
Maximum DC Reverse Current at rated DC Blocking Voltage at T_A = 25	I_R	10							μA
Maximum DC Reverse Current at rated DC Blocking Voltage at T_A = 125	I_R	200							μA
Maximum Reverse Recovery Time Test conditions I_F=0.5A, I_R=1.0A, I_{RR}=0.25A	t_{rr}	50				75			nS
Typical Junction Capacitance (Measured at 1.0MHz and applied reverse voltage of 4.0V)	C_J	80				50			pF
Typical Thermal Resistance (Note 1)	$R_{\theta JA}$	55							/W
Typical Thermal Resistance (Note 1)	$R_{\theta JL}$	17							/W
Operating Junction Temperature	T_J	(-55 to +150)							
Storage Temperature Range	T_{STG}	(-55 to +150)							

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

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

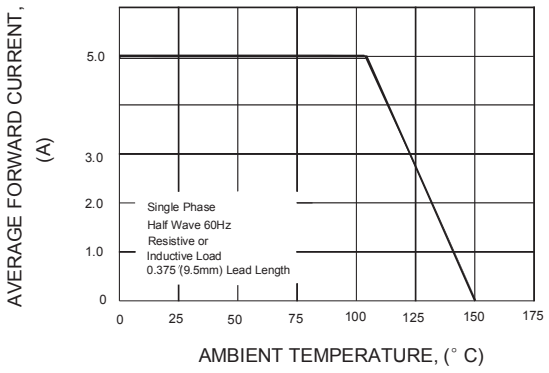


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

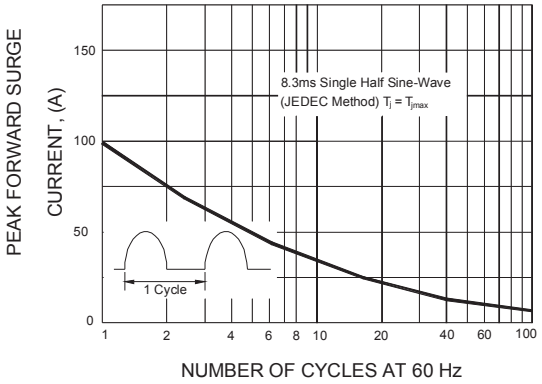


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

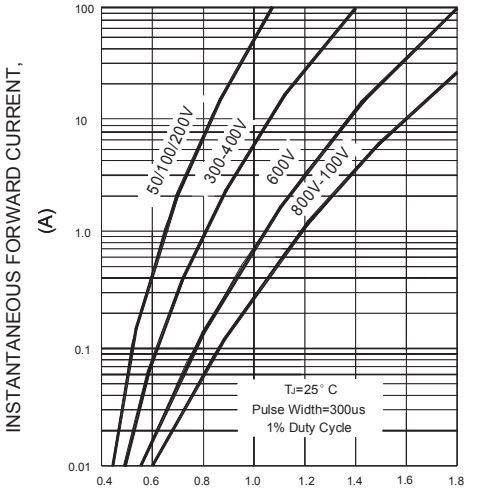


FIG.4-TYPICAL REVERSE CHARACTERISTICS

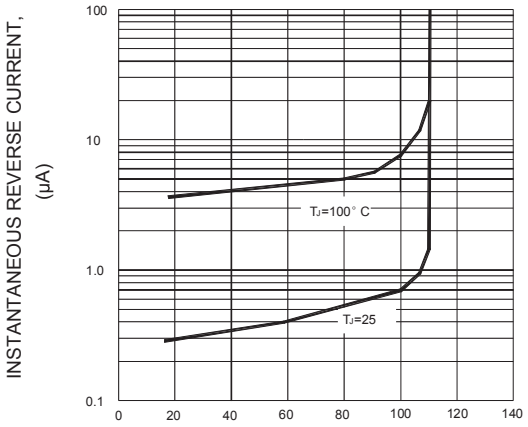
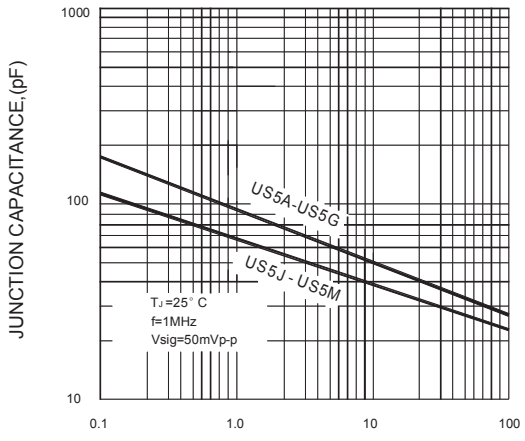
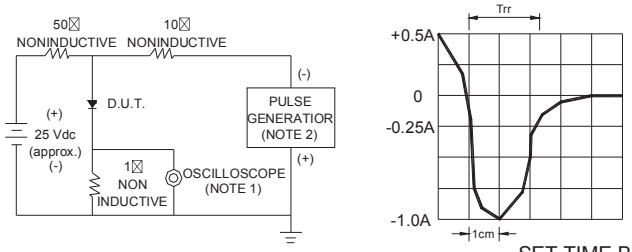


FIG.5-TYPICAL JUNCTION CAPACITANCE



F1G.6-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



SET TIME BASE FOR 50/100ns/cm

NOTES : 1.Rise Time=7ns max. Input Impedance= 1 megohm. 22pF
2.Rise time=10ns max. Source Impedance= 50 ohms