

### SURFACE MOUNT ULTRA FAST RECTIFIER

Reverse Voltage - 50 to 1000 Volts Forward Current - 5.0 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

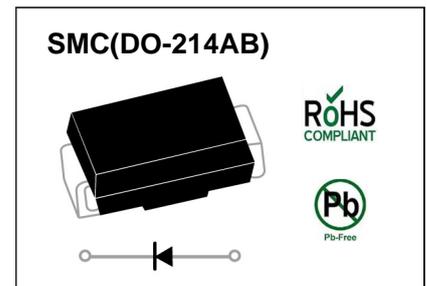
- Case: DO-214AB molded plastic body over passivated chip
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Mounting Position: Any
- Weight: 0.007 ounce, 0.25 grams

#### Specification

##### Maximum Rating 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%.



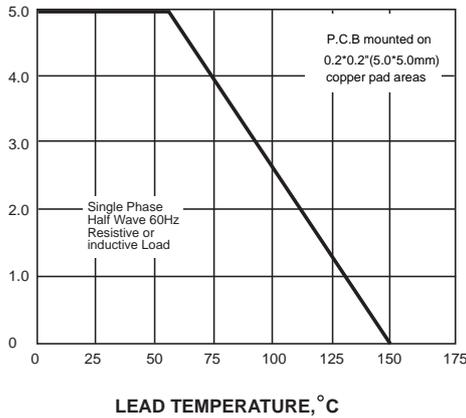
	SYMBOLS	UF5A	UF5B	UF5D	UF5G	UF5J	UF5K	UF5M	UNITS
Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	200	400	600	800	1000	V
Maximum RMS voltage	$V_{RMS}$	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	$V_{DC}$	50	100	200	400	600	800	1000	V
Maximum average forward rectified current at $T_L=55^\circ C$	$I_{(AV)}$	5.0							A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load	$I_{FSM}$	150.0							A
Maximum instantaneous forward voltage at 5.0A	$V_F$	1.0		1.4		1.7		V	
Maximum DC reverse current $T_A=25^\circ C$ at rated DC blocking voltage $T_A=100^\circ C$	$I_R$	5.0 100.0							$\mu A$
Maximum reverse recovery time (NOTE 1)	$t_{rr}$	50			75			ns	
Typical junction capacitance (NOTE 2)	$C_J$	98			82			pF	
Typical thermal resistance (NOTE 3)	$R_{\theta JA}$	55.0							$^\circ C/W$
Operating junction and storage temperature range	$T_J, T_{STG}$	-65 to +150							$^\circ C$

**Note:** 1. Reverse recovery condition  $I_F=0.5A, I_R=1.0A, I_{rr}=0.25A$   
 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 US5A thru US5M

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

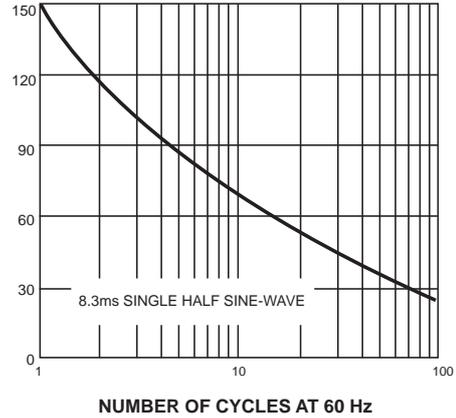
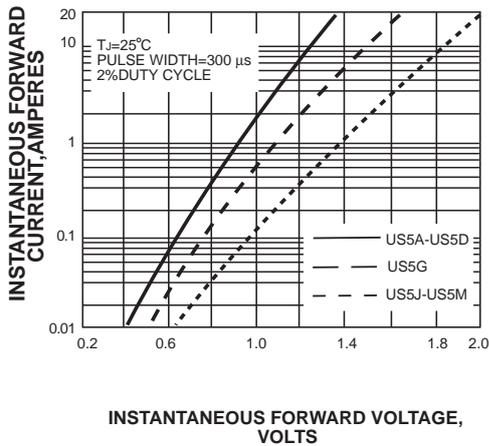


FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



INSTANTANEOUS REVERSE CURRENT, MICROAMPERES

FIG. 4-TYPICAL REVERSE CHARACTERISTICS

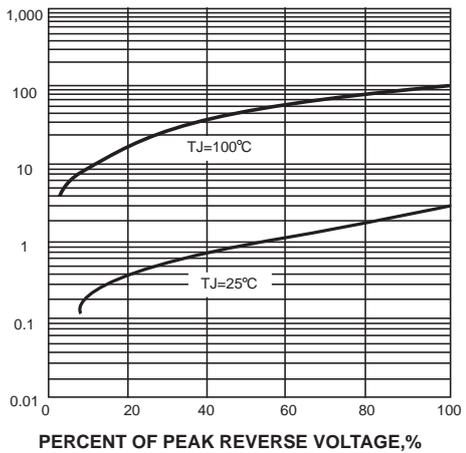
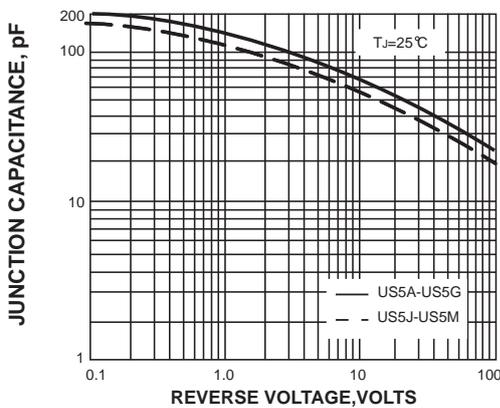
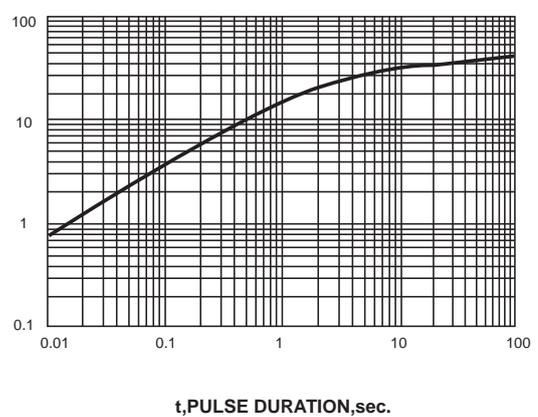


FIG. 5-TYPICAL JUNCTION CAPACITANCE



TRANSIENT THERMAL IMPEDANCE, °C/W

FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE



### Marking and packing illustration

#### 1、Marking



SYMBOL	Explanation
A	Product Name

#### 2、Packaging



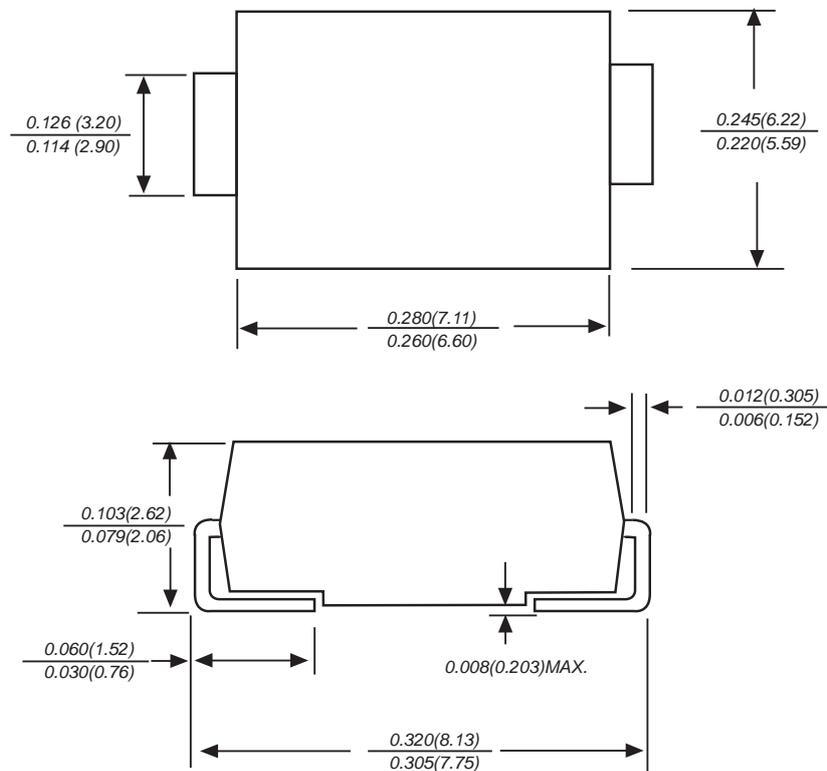
SPECIFICATIONS mm(inch)		PACKAGE	SPECIFICATIONS mm(inch)		PACKAGE
ITEM	SYM BOL	SMC (DO-214AB)	ITEM	SYM BOL	SMC (DO-214AB)
Carrier width	A	6.15(0.242)Max	Carrier depth	K	2.54(0.100)Typ
Carrier length	B	8.41(0.331)Max	Punch hole pitch	P	8.00(0.315)Typ
Sprocket hole	d	ø1.55(0.061)Typ	Sprocket hole pitch	P0	4.00(0.157)Typ
Reel outer diameter	D	330.0(13.0)Typ	Embossment center	P1	2.00(0.079)Typ
Reel inner diameter	D1	74.0(2.913)Min	Overall tape thickness	T	0.25(0.010)Typ
Feed hole diameter	D2	13.0(0.512)Typ	Tape width	W	16.0(0.430)Typ
Sprocket hole position	J	1.75(0.069)Typ	Reel width	W1	16.5(0.650)Min
Punch hole position	H	7.50(0.295)Typ			

#### 3、Ordering Information

Part Number	Compliance	Case	Packaging
USXX	Standard	SMC	3000/Tape & Reel

### Dimension

#### SMC(DO-214AB)



*Dimensions in inches and (millimeters)*

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