

### SURFACE MOUNT TRENCH SCHOTTKY RECTIFIER

Reverse Voltage - 40 to 100 Volts Forward Current - 5.0 Amperes

#### Features

- The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- Metal silicon junction, majority carrier conduction
- High efficiency operation
- Ultra low forward voltage drop, low power losses
- High forward surge current capability
- High temperature soldering guaranteed:  
260°C/10 seconds, 0.375" (9.5mm) lead length  
5 lbs. (2.3kg) tension

#### Mechanical Data

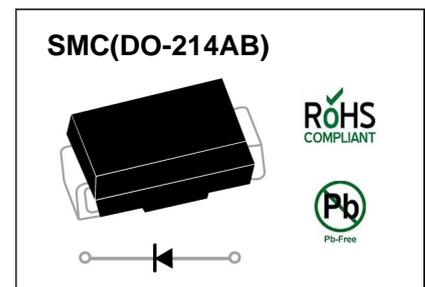
- Case: DO-214AB molded plastic body
- Terminals: Leads solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Mounting Position: Any
- Weight: 0.007 ounce, 0.25 grams

#### 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	ST54C	ST56C	ST510C	UNITS
Maximum repetitive peak reverse voltage	$V_{RRM}$	40	60	100	V
Maximum RMS voltage	$V_{RMS}$	28	42	70	V
Maximum DC blocking voltage	$V_{DC}$	40	60	100	V
Maximum average forward rectified current 0.375" (9.5mm) lead length (see fig.1)	$I_{(AV)}$	5.0			A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	100.0	90.0		A
Maximum instantaneous forward voltage at 5.0A	$V_F$	0.43	0.50	0.70	V
Maximum DC reverse current $T_A=25^\circ\text{C}$ at rated DC blocking voltage $T_A=100^\circ\text{C}$	$I_R$	0.10	0.05	0.03	mA
		20.0		10.0	
Typical junction capacitance (NOTE 1)	$C_J$	500			pF
Typical thermal resistance (NOTE 2)	$R_{\theta JA}$	60			°C/W
Operating junction temperature range	$T_J$	-55 to +125	-55 to +150		°C
Storage temperature range	$T_{STG}$	-55 to +150			°C

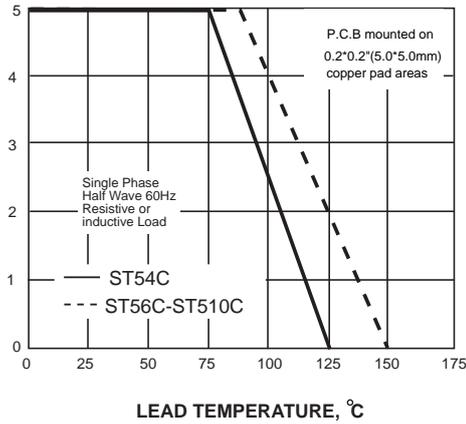
**Note:** 1. Measured at 1MHz and applied reverse voltage of 4.0V D.C.

2. Thermal resistance from junction to ambient at 0.375" (9.5mm) lead length, P.C.B. mounted

### Ratings and characteristic curves ST54C thru ST510C

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

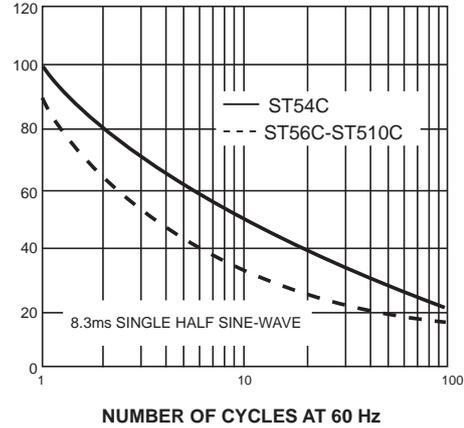
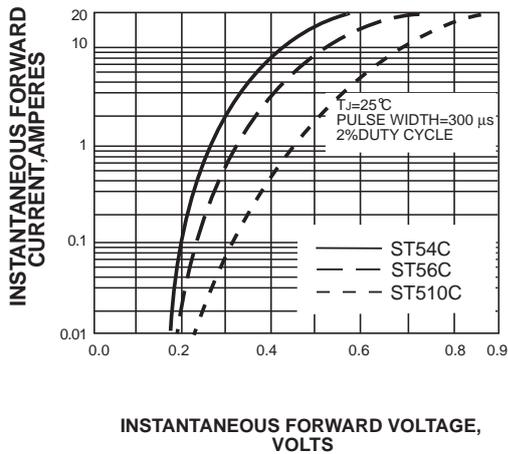


FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



INSTANTANEOUS REVERSE CURRENT, MILLIAMPERES

FIG. 4-TYPICAL REVERSE CHARACTERISTICS

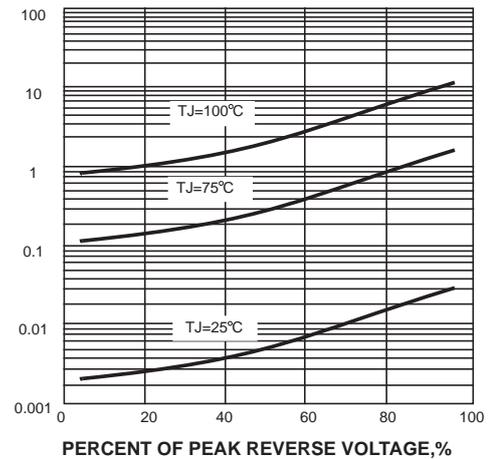
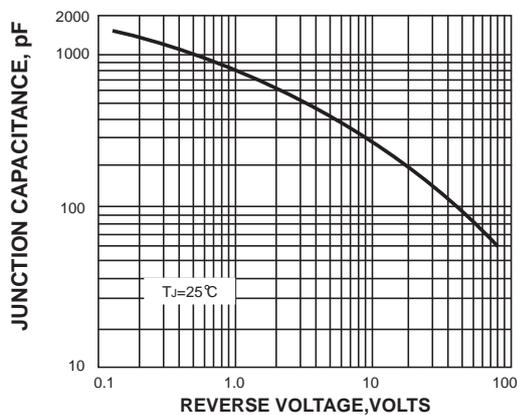
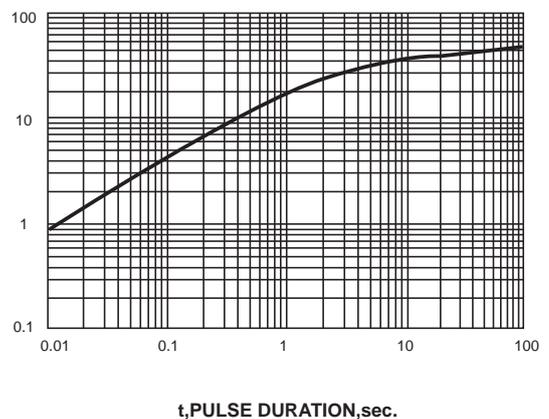


FIG. 5-TYPICAL JUNCTION CAPACITANCE



TRANSIENT THERMAL IMPEDANCE, °C/W

FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE



### Marking and packing illustration

#### 1、Marking



SYMBOL	Explanation
A	Product Name

#### 2、Packaging



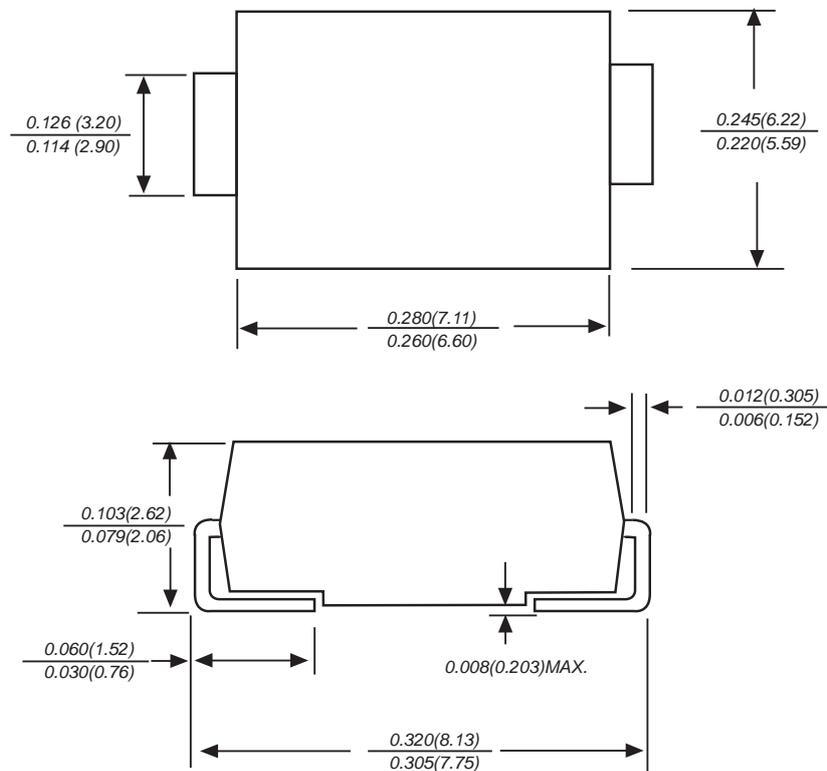
SPECIFICATIONS mm(inch)		PACKAGE	SPECIFICATIONS mm(inch)		PACKAGE
ITEM	SYM BOL	SMC (DO-214AB)	ITEM	SYM BOL	SMC (DO-214AB)
Carrier width	A	6.15(0.242)Max	Carrier depth	K	2.54(0.100)Typ
Carrier length	B	8.41(0.331)Max	Punch hole pitch	P	8.00(0.315)Typ
Sprocket hole	d	ø1.55(0.061)Typ	Sprocket hole pitch	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
SSXX	Standard	SMC	3000/Tape & Reel

### Dimension

#### SMC(DO-214AB)



*Dimensions in inches and (millimeters)*

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