# SURFACE MOUNT TRENCH SCHOTTKY RECTIFIER

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

## Features

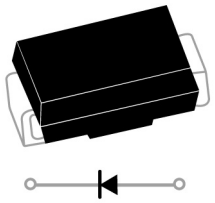
- The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- Metal silicon junction, majority carrier conduction
- High efficiency operation
- Ultra low forward voltage drop,low power losses
- High forward surge current capability
- High temperature soldering guaranteed: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

## Mechanical Data

- Case:DO-214AC molded plastic body
- Terminals:Leads solderable per MIL-STD-750,Method 2026
- Polarity: Color band denotes cathode end
- Mounting Position: Any
- Weight: 0.002 ounce, 0.07 grams

## Specification

**SMA(DO-214AC)**



RoHS COMPLIANT

Pb Pb-Free

### 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* | ST54A | ST56A | ST510A | 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 | 80.0 | | A |
| Maximum instantaneous forward voltage at 5.0A | $V_F$ | 0.43 | 0.50 | 0.70 | V |
| Maximum DC reverse current $T_A$=25℃ | $I_R$ | 0.10 | 0.05 | 0.03 | mA |
| at rated DC blocking voltage $T_A$=100℃ | | 20.0 | | 10.0 | |
| Typical junction capacitance (NOTE 1) | $C_J$ | 500 | | | pF |
| Typical thermal resistance (NOTE 2) | $R_{\theta JA}$ | 80 | | | °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 ST54A thru ST510A

FIG. 1- FORWARD CURRENT DERATING CURVE

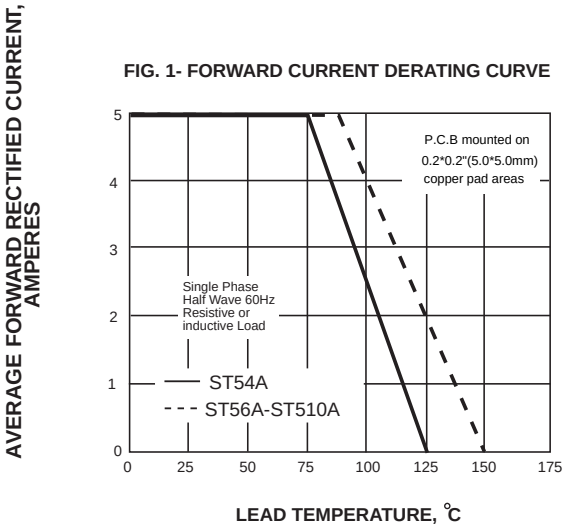



FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

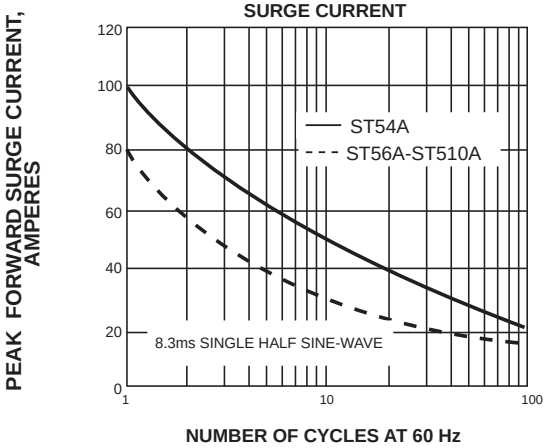



FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

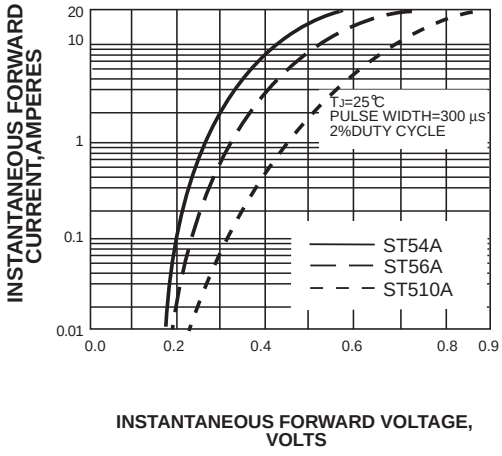



FIG. 4-TYPICAL REVERSE CHARACTERISTICS

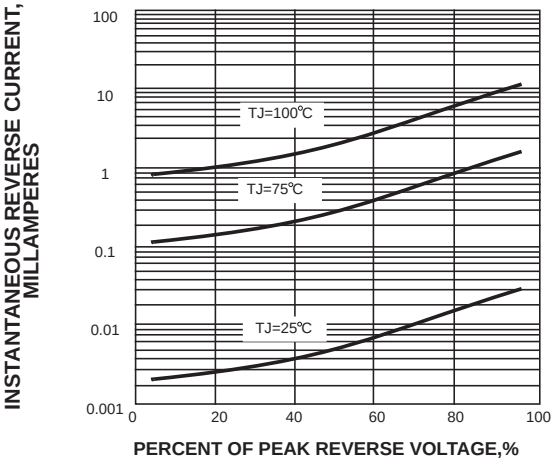



FIG. 5-TYPICAL JUNCTION CAPACITANCE

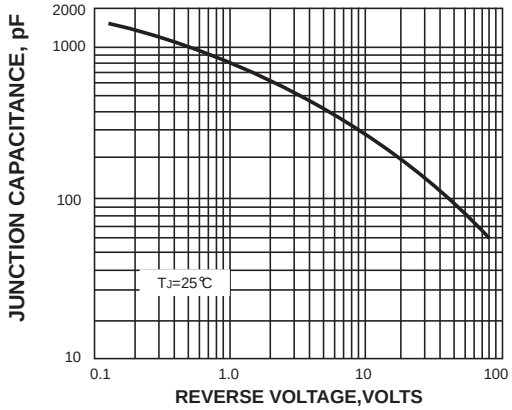
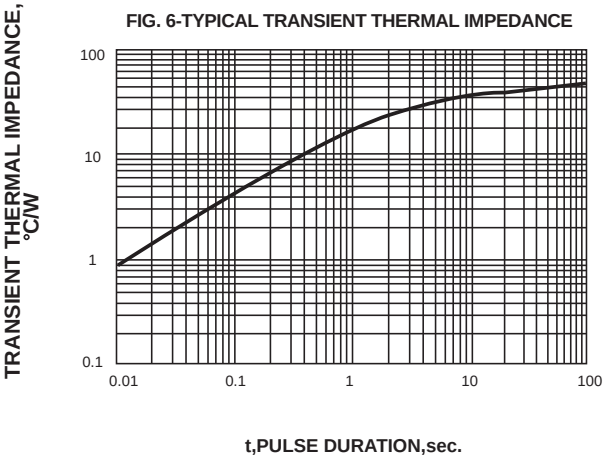



FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE

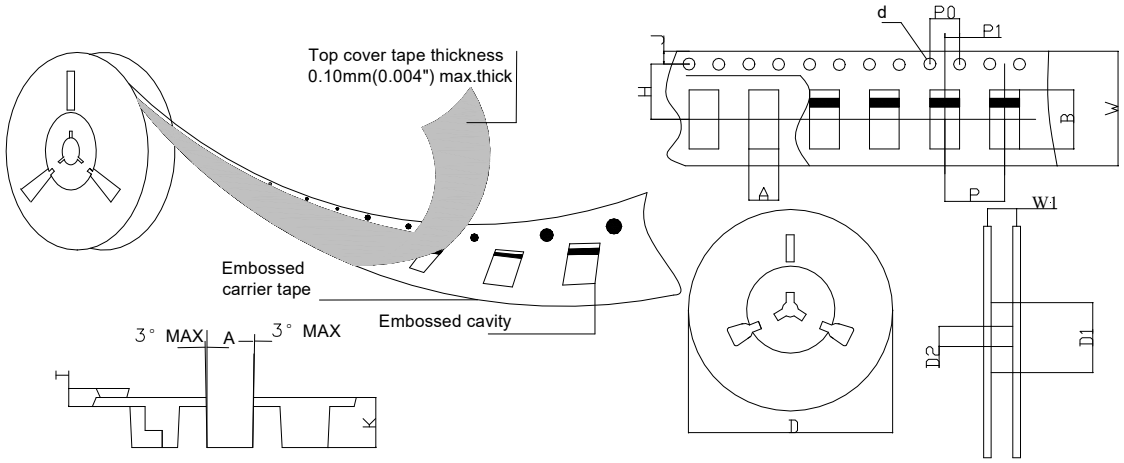


# Marking and packging illustration

## 1、Marking


| SYMBOL | Explanation |
|---|---|
| A | Product Name |

## 2、Packaging



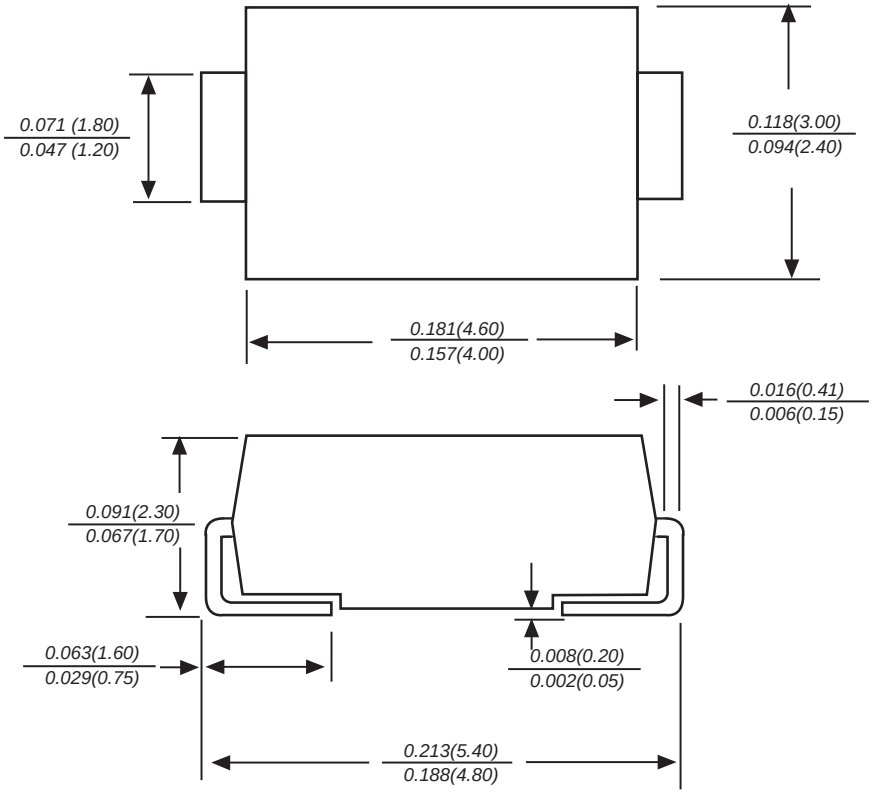

| SPECIFICATIONS mm(inch) | | PACKAGE | SPECIFICATIONS mm(inch) | | PACKAGE |
|---|---|---|---|---|---|
| ITEM | SYM BOL | SMA (DO-214AC) | ITEM | SYM BOL | SMA (DO-214AC) |
| Carrier width | A | 3.17(0.125)Max | Carrier depth | K | 2.42(0.095)Typ |
| Carrier length | B | 5.81(0.229)Max | Punch hole pitch | P | 4.00(0.157)Typ |
| Sprocket hole | d | ø1.55(0.061)Typ | Sprocket hole pitch | P0 | 4.00(0.157)Typ |
| Reel outer diameter | D | 178.0(7)Typ | Embossment center | P1 | 2.00(0.079)Typ |
| Reel inner diameter | D1 | 50.0(1.969)Min | Overall tape thickness | T | 0.30(0.012)Typ |
| Feed hole diameter | D2 | 13.0(0.512)Typ | Tape width | W | 12.0(0.472)Typ |
| Sprocket hole position | J | 1.75(0.069)Typ | Reel width | W1 | 12.4(0.488)Min |
| Punch hole position | H | 5.55(0.219)Typ | | | |

## 3、Ordering Information

| Part Number | Compliance | Case | Packaging |
|---|---|---|---|
| SSXX | Standard | SMA | 2000/Tape & Reel |

## Dimension

### SMA(DO-214AC)




*Dimensions in inches and (millimeters)*

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