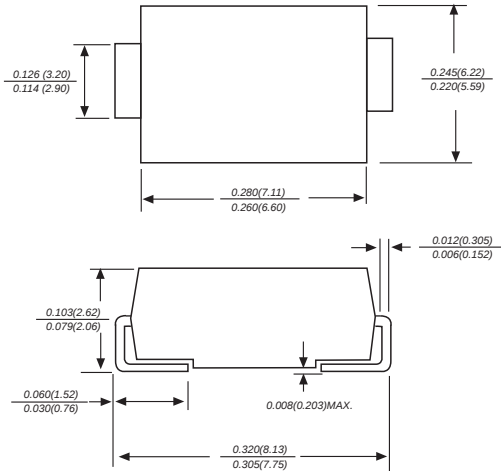


ST54C THRU ST510C

SURFACE MOUNT TRENCH SCHOTTKY RECTIFIER

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

DO-214AB



Dimensions in inches and (millimeters)

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: JEDEC 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, 0.25grams

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	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°C at rated DC blocking voltage T _A =100°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 _{θJA}	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

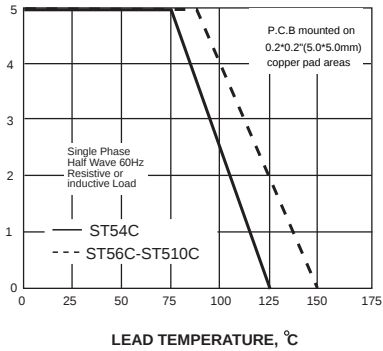
Note: 1. Measured at 1MHz and applied reverse voltage of 4.0V D.C.

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

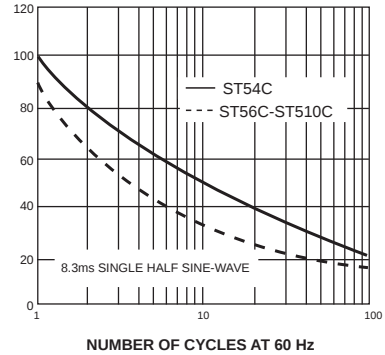
AVERAGE FORWARD RECTIFIED CURRENT,
AMPERES

FIG. 1- FORWARD CURRENT DERATING CURVE



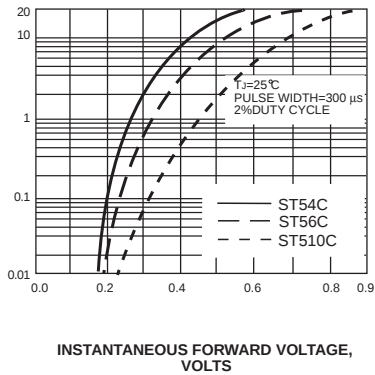
PEAK FORWARD SURGE CURRENT,
AMPERES

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



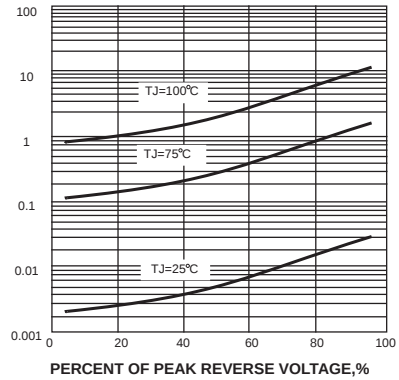
INSTANTANEOUS FORWARD
CURRENT,AMPERES

FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



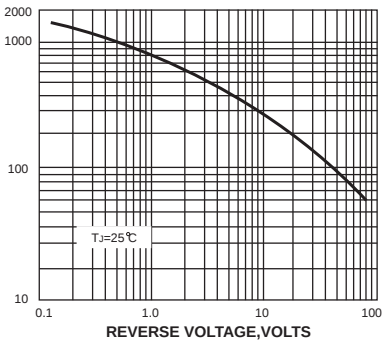
INSTANTANEOUS REVERSE CURRENT,
MILLIAMPERES

FIG. 4-TYPICAL REVERSE CHARACTERISTICS



JUNCTION CAPACITANCE, pF

FIG. 5-TYPICAL JUNCTION CAPACITANCE



TRANSIENT THERMAL IMPEDANCE,
°C/W

FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE

