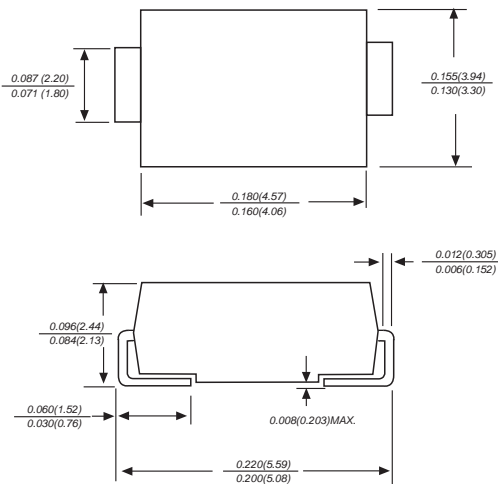




ST54B THRU ST510B

SURFACE MOUNT TRENCH SCHOTTKY RECTIFIER
 Reverse Voltage - 40 to 100 Volts Forward Current - 5.0 Amperes

DO-214AA/SMB



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-214AA molded plastic body
Terminals: leads solderable per MIL-STD-750, Method 2026
Polarity: Color band denotes cathode end
Mounting Position: Any
Weight: 0.003 ounce, 0.093 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%.

MDD Catalog Number	SYMBOLS	ST54B	ST56B	ST510B	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	0.60	V	
Maximum DC reverse current at rated DC blocking voltage	I_R	$T_A=25^\circ C$ 0.10	0.05	0.03	mA	
$T_A=100^\circ C$		20.0		10.0		
Typical junction capacitance (NOTE 1)	C_J	500			pF	
Typical thermal resistance (NOTE 2)	$R_{\theta JA}$	75			°C/W	
Operating junction temperature range	T_J	-55 to +125	-55 to +150		°C	
Storage temperature range	T_{STG}	-55 to +150				°C

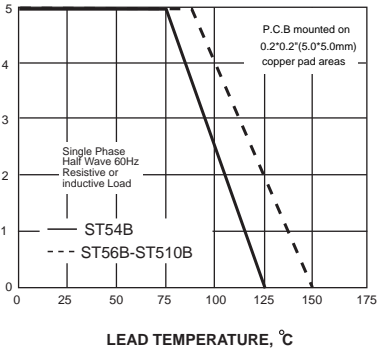
Note: 1. Measured at 1MHz and applied reverse voltage of 4.0V D.C.
 2. Thermal resistance from junction to ambient at 0.375" (9.5mm) lead length, P.C.B. mounted



RATINGS AND CHARACTERISTIC CURVES ST54B THRU ST510B

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

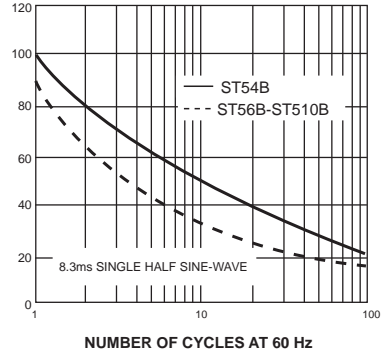


FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

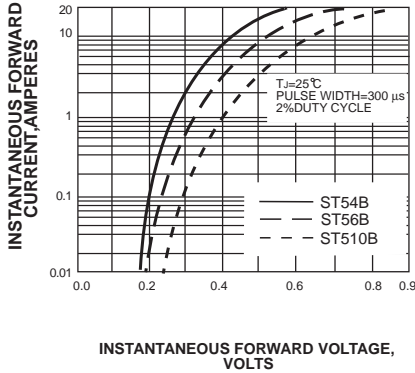


FIG. 4-TYPICAL REVERSE CHARACTERISTICS

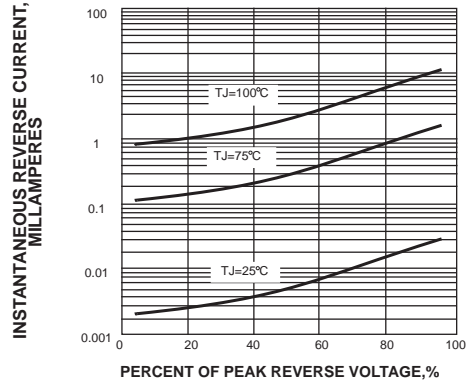
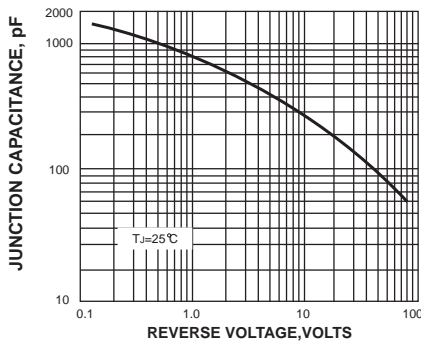
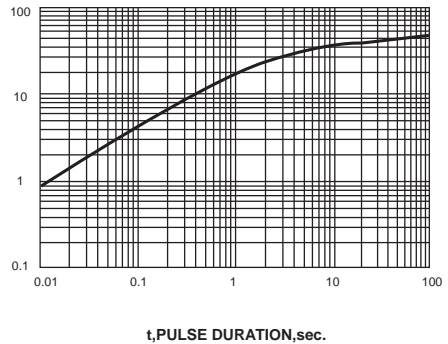


FIG. 5-TYPICAL JUNCTION CAPACITANCE



TRANSIENT THERMAL IMPEDANCE, $^{\circ}\text{C}/\text{W}$

FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE



The curve graph is for reference only, can't be the basis for judgment (曲线图仅供参考)!



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