

Pb Free Plating Product

STTH502B thru STTH512B



5.0 Ampere Surface Mount Single Positive Type Ultra Fast Recovery Rectifier Diode

<p>Features</p> <ul style="list-style-type: none"> ※ ThinkSemi latest&matured process FRD/FRED ※ Low forward voltage drop ※ High current capability ※ Low reverse leakage current ※ High surge current capability <p>Application</p> <ul style="list-style-type: none"> ※ Automotive Inverters and Solar Inverters ※ Car Audio Amplifiers and Sound Device Systems ※ Plating Power Supply, Motor Control, UPS and SMPS etc. <p>Mechanical Data</p> <ul style="list-style-type: none"> ※ Case: Surface Mount TO-252AB/DPAK(TO-252AA) package ※ Epoxy: UL 94V-0 rate flame retardant ※ Terminals: Solderable per MIL-STD-202 method 208 ※ Polarity: As marked on diode body ※ Mounting position: Any ※ Weight: 1.0 gram approximately 	<p>TO-252AB/DPAK(TO-252AA) Unit: inch(mm)</p> <p>Internal Configuration</p>
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MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25°C ambient temperature unless otherwise specified.
 Single phase, half wave, 60Hz, resistive or inductive load.
 For capacitive load, derate current by 20%.

PARAMETER	SYMBOL	STTH502B	STTH504B	STTH506B	STTH508B	STTH510B	STTH512B	UNIT
Maximum Recurrent Peak Reverse Voltage	VRRM	200	400	600	800	1000	1200	V
Maximum RMS Voltage	VRMS	140	280	420	560	700	840	V
Maximum DC Blocking Voltage	VDC	200	400	600	800	1000	1200	V
Maximum Average Forward Rectified Current TC=125°C (Total Device 5.0A)	IF(AV)	5.0						A
Peak Forward Surge Current, 8.3ms single Half sine-wave superimposed on rated load (JEDEC method)	IFSM	160						A
Maximum Instantaneous Forward Voltage @5.0A	VF (Typical)	0.85-0.95	1.00-1.25	1.25-1.50	1.50-1.70			V
Maximum DC Reverse Current @TJ=25°C At Rated DC Blocking Voltage @TJ=125°C	IR	1.0 100						µA µA
Maximum Reverse Recovery Time (Note1)	Trr	25-30			30-50			nS
Typical Junction Capacitance (Note 2)	CJ	100						pF
Typical Thermal Resistance (Note 3)	RθJC	6.5						°C/W
Operating Junction and Storage Temperature Range	TJ,TSTG	-55 to +175						°C

Note:(1)Reverse recovery test conditions IF = 1A di/dt=-200A/us VR=30V.
 Note:(2)Measured at 1.0 MHz and applied reverse voltage of 4.0 Volts DC.
 Note:(3)Thermal Resistance junction to case.

FIG.1 - FORWARD CURRENT DERATING CURVE

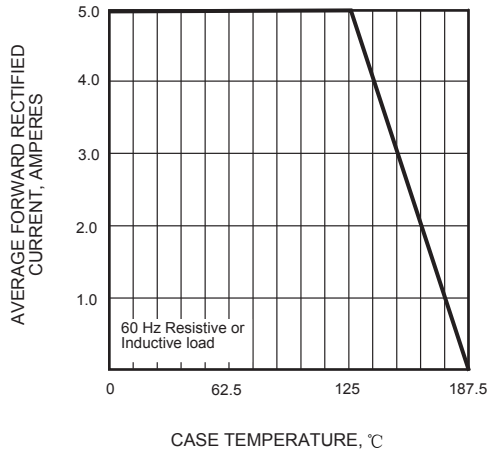


FIG.2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

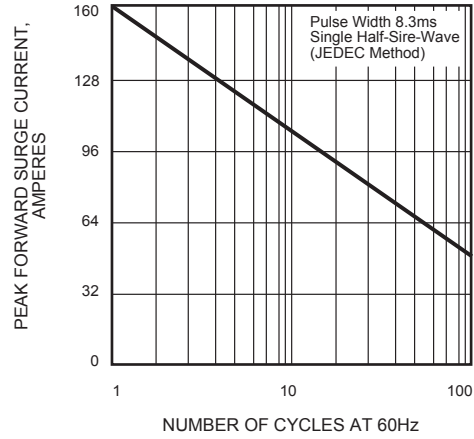


FIG.3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

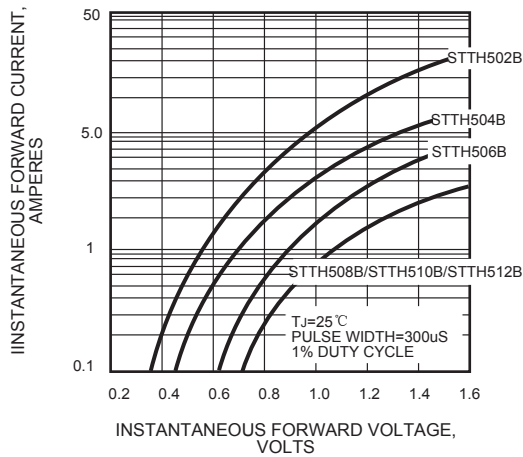


FIG.4 - TYPICAL REVERSE CHARACTERISTICS

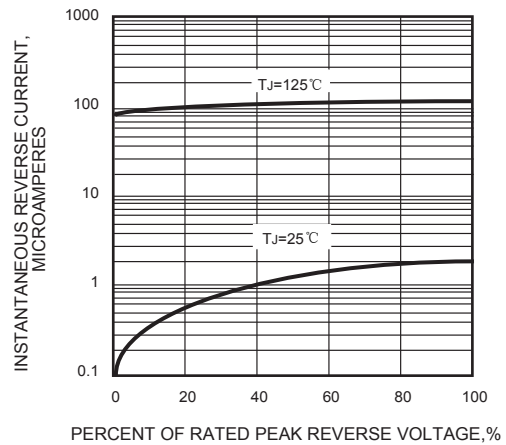


FIG.5 - TYPICAL JUNCTION CAPACITANCE

