



# STPA62 THRU STPA270

## SOLID STATE TELECOMMUNICATION PROTECTION ARRESTOR

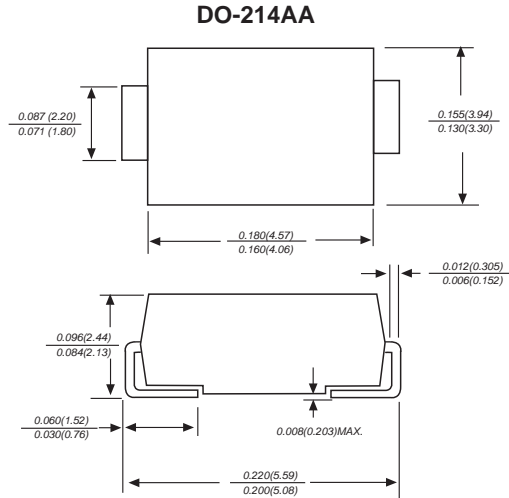
Breakdown Voltage - 62 to 270 Volts Holding Current - 150 Milliampere

### FEATURES

The plastic package carries Underwriters Laboratory Flammability Classification 94V-0  
 Bidirectional crowbar protection  
 Fast response  
 High forward surge current capability  
 High temperature soldering guaranteed  
 250°C/10 seconds on terminals

### MECHANICAL DATA

**Case:** JEDEC DO-214AA molded plastic body  
**Terminals:** Solder plated, solderable per MIL-STD-750, Method 2026  
**Polarity:** Color band denotes cathode end  
**Mounting Position:** Any  
**Weight:** 0.003 ounce, 0.093 grams



Dimensions in inches and (millimeters)

Complies with the following standards:	Peak surge voltage (V)	Voltage waveform (μ s)	Current waveform (μ s)	Admissible Ipp (A)	Necessary resistor (Ω)
(CCITT)ITU-K20	1000	10/700	5/310	25	--
(CCITT)ITU-K17	1500	10/700	5/310	38	--
VDE0433	2000	10/700	5/310	50	--
VDE0878	2000	1.2/50	1/20	50	--
IEC-1000-4-5	level 3 level4	10/700 1.2/50	5/310 8/20	50 100	-- --
FCC Part 68, lightning surge type A	1500 800	10/160 10/560	10/160 10/560	75 55	12.5 6.5
FCC Part 68, lightning surge type B	1000	9/720	5/320	25	--
BELLCORE TR-NWT-001089 First level	2500 1000	2/10 10/1000	2/10 10/1000	150 50	11.5 10
BELLCORE TR-NWT-001089 Second level	5000	2/10	1/20	150	11.5
CNET131-24	1000	0.5/700	0.8/310	25	--



## ABSOLUTE MAXIMUM RATINGS ( $T_A=25^{\circ}\text{C}$ )

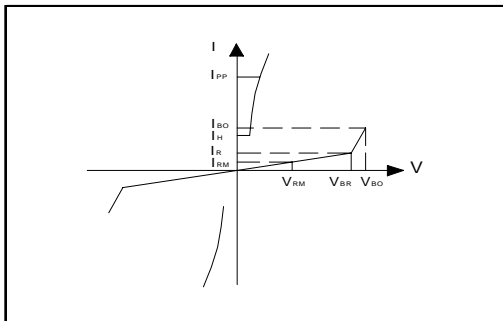
Symbol	Parameter	Value	Unit	
P	Power dissipation on infinite heatsink	$T_{\text{amb}}=50^{\circ}\text{C}$	1.7	W
$I_{\text{pp}}$	Peak pulse current	$10/1000 \mu\text{s}$ $8/20 \mu\text{s}$	50 100	A
$I_{\text{FSM}}$	Non repetitive surge peak on-state current	$t_p=20\text{ms}$	30	A
$I^2t$	$I^2t$ value for fusing	$t_p=20\text{ms}$	9	$\text{A}^2\text{s}$
dV/dt	Critical rate of rise of off-state voltage	$V_{\text{RM}}$	5	$\text{KV}/\mu\text{s}$
$T_{\text{stg}}$	Storage temperature range	-55to+150		$^{\circ}\text{C}$
$T_j$	Maximum junction temperature	150		$^{\circ}\text{C}$
$T_L$	Maximum leadtemperature for soldering during 10sat 5mmform case	230		$^{\circ}\text{C}$

## THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{\text{th}}(j-l)$	Junction to leads ( $L_{\text{lead}}=10\text{mm}$ )	60	$^{\circ}\text{C}/\text{W}$
$R_{\text{th}}(j-a)$	Junction to ambient on printed circuit ( $L_{\text{lead}}=10\text{mm}$ )	100	$^{\circ}\text{C}/\text{W}$

Type	$I_{\text{RM}} @ V_{\text{RM}}$		$V_{\text{BR}} @ I_{\text{R}}$		$V_{\text{BO}} @ I_{\text{BO}}$		$I_{\text{H}}$ min. note2 mA	C max. note3 $\mu\text{F}$
	$\mu\text{A}$	V	V	mA	V	mA		
TPA62	2	56	62	1.0	82	800	150	150
TPA68	2	61	68	1.0	90	800	150	150
TPA100	2	90	100	1.0	133	800	150	100
TPA120	2	108	120	1.0	160	800	150	100
TPA130	2	117	130	1.0	173	800	150	100
TPA180	2	162	180	1.0	240	800	150	100
TPA200	2	180	200	1.0	267	800	150	100
TPA220	2	198	220	1.0	293	800	150	100
TPA240	2	216	240	1.0	320	800	150	100
TPA270	2	243	270	1.0	360	800	150	100

## ELECTRICAL CHARACTERISTICS ( $T_A=25^{\circ}\text{C}$ )



Note2: See test circuit2.

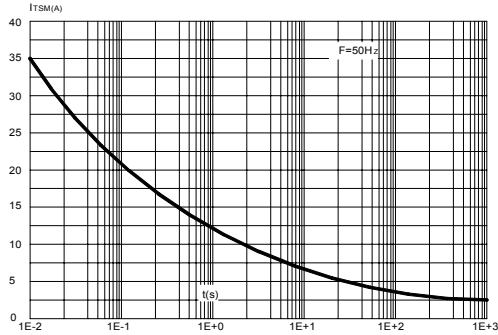
Symbol	Parameter
$V_{\text{RM}}$	Stand-off voltage
$I_{\text{RM}}$	Leakage current at stand-off voltage
$V_{\text{R}}$	Continuous reverse voltage
$V_{\text{BR}}$	Breakdown voltage
$V_{\text{BO}}$	Breakover voltage
$I_{\text{H}}$	Holding current
$I_{\text{BO}}$	Breakover current
$I_{\text{PP}}$	Peak pulse current
C	Capacitance

Note1: Measured at 50Hz (1 cycle) See test circuit 1.  
Note3:  $V_{\text{R}}=1\text{V}$ ,  $F=1\text{MHz}$ , Refer to fig.3 for C versus  $V_{\text{R}}$ .

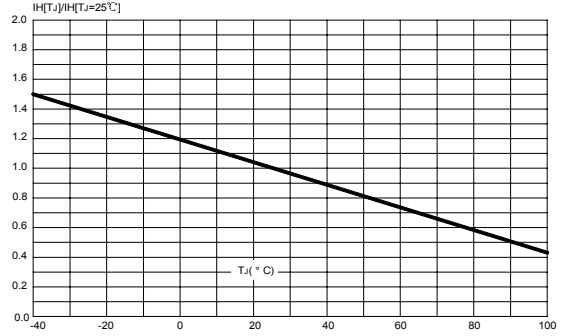


## RATINGS AND CHARACTERISTIC CURVES STPA62 THRU STPA270

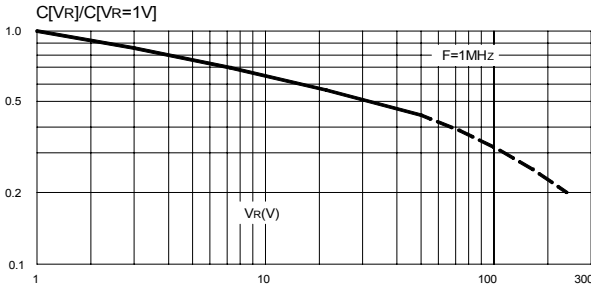
**FIG.1 – NON REPETITIVE SURGE PEAK ON-STATE CURRENT VERSUS OVERLOAD DURATION ( $T_J \text{ Initial} = 25^\circ\text{C}$ ).**



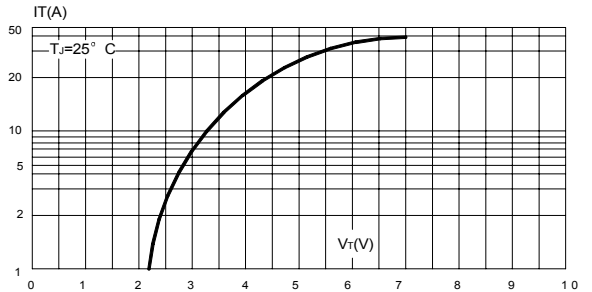
**FIG.2 – RELATIVE VARIATION OF GOIDING CURRENT VERSUS JUNCTION TEMPERATURE.**



**FIG.3 – RELATIVE VARIATION OF JUNCTION CAPACITANCE VERSUS REVERSE APPLIED VOLTAGE**



**FIG.4 – ON-STATE CURRENT VERSUS ON-STATE VOLTAGE**



**FIG.5 – TRANSIENT THERMAL IMPEDANCE JUNCTION TO AMBIENT VERSUS PULSE DURATION**

