

# SM7032A Thyristor Surge Protective Devices

Revision:A

### General Description

SM7032A is solid state crowbar devices designed to protect telecom equipment during hazardous transient conditions. It is a two terminal solid state device capable to drain a surge current pulse to ground when a transient voltage appears in between its two terminals when a specific maximum voltage delimited by the maximum breakover voltage of the device is reached.

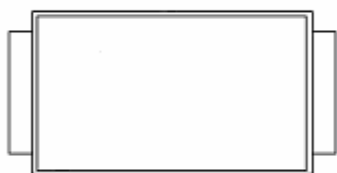
### Features

- Bidirectional crowbar protection
- Continuous reverse voltage :6V
- Low leakage current: IR=10uA max.
- Holding current: IH=50mA min.

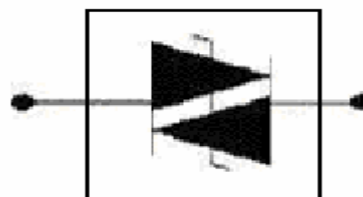
### Main applications

- Data line
- Interface circuit
- Analog line cards

### Functional diagram



SMA

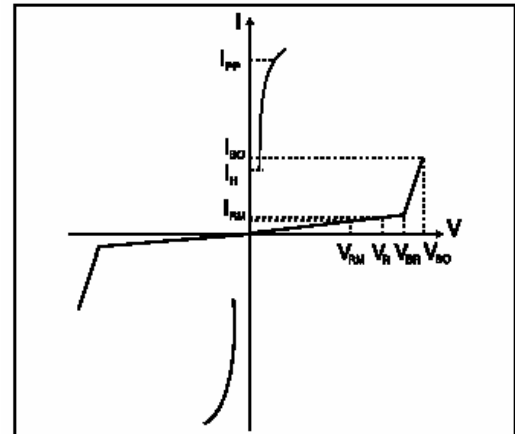


### Absolute Ratings (Tamb=25°C)

Symbol	Parameter	Value	Unit	
Ts	Storage temperature range	-40 to +150	°C	
Tj	Maximum junction temperature	150	°C	
I <sub>PP</sub>	Repetitive peak pulse current:	10/1000μs	45	A
		10/560μs	50	
		10/160μs	90	
		8/20μs	150	
		2/10μs	150	
I <sub>TSM</sub>	Non repetitive surge peak on-state current (sinusoidal)	t=16.6ms	20	A

**Electrical Parameters**

Symbol	Parameter
$V_{RM}$	Stand-off voltage
$V_{BR}$	Breakdown voltage
$V_{BO}$	Switching Voltage
$I_{BO}$	Breakover current
$I_{RM}$	Leakage current at $V_{RM}$
$I_{PP}$	Peak pulse current
$I_H$	Holding current
$V_T$	On-state Voltage at $I_T$
$C_O$	Off-state Capacitance



**Electrical Characteristics ( $T_{amb}=25^{\circ}C$ )**

Type	$V_{RM}$	$I_{RM}$	$V_{BO}$	$I_{BO}$	$V_T$	$I_T$	$C_O$	$I_H$
	Min.		Max.	Max.	Max.		Max.	Min.
	V	$\mu A$	V	mA	V	A	pF	mA
SM7032A	6	10	25	800	4	1	50	50

**Typical Characteristics**

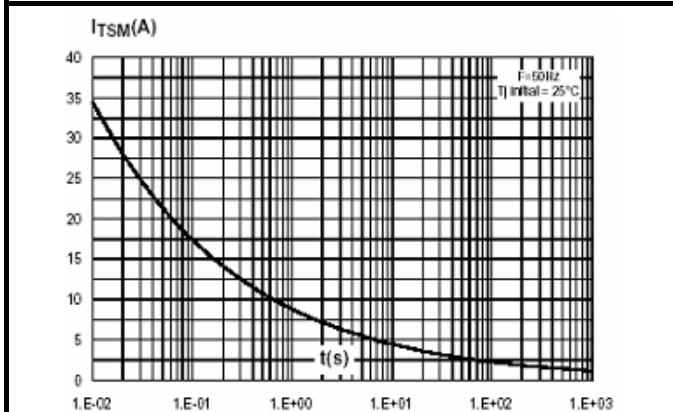


Fig.1: Non repetitive surge peak on-state current versus overload duration

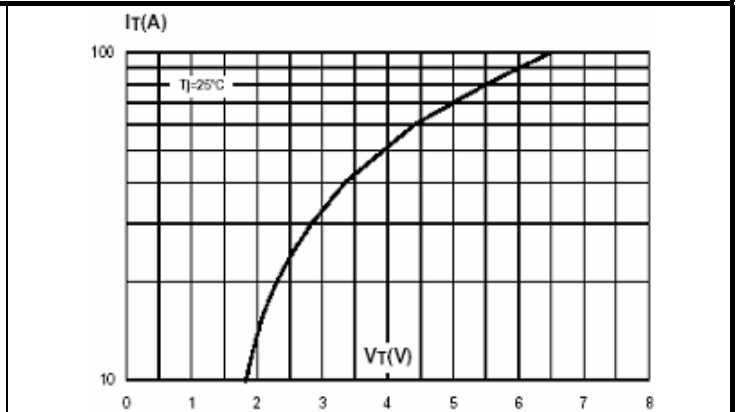


Fig.2: On-state voltage versus on-state current (typical values)

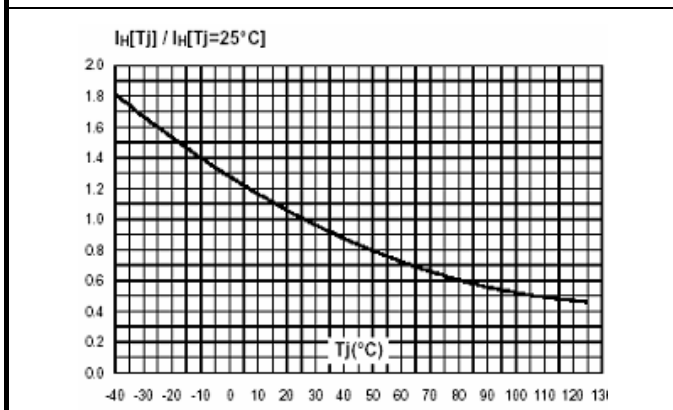


Fig.3: Relative variation of holding current versus junction temperature

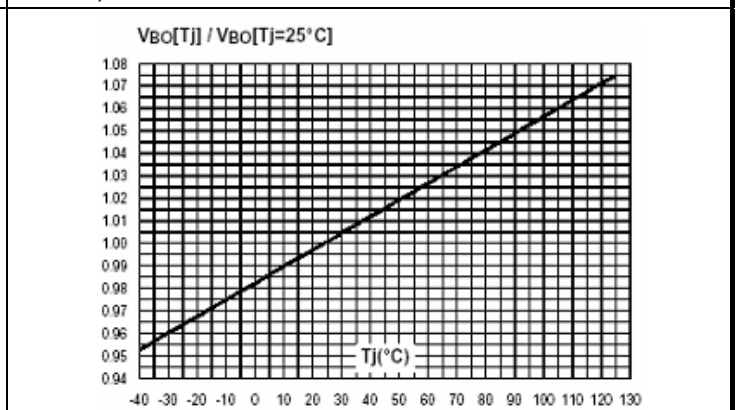


Fig.4: Relative variation of breakover voltage versus junction temperature

# SM7032A

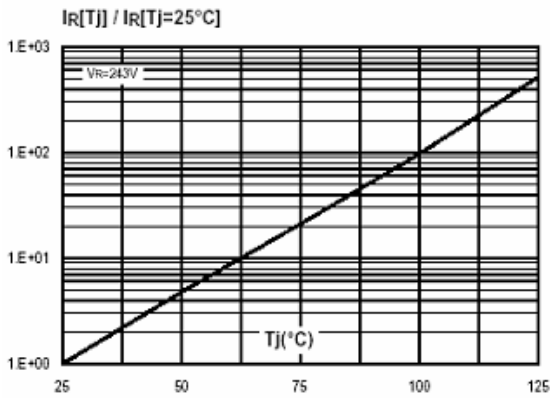


Fig.5:Relative variation of leakage current versus reverse voltage applied(typical values)

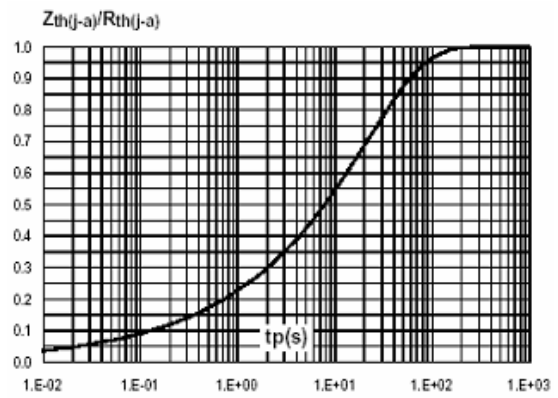
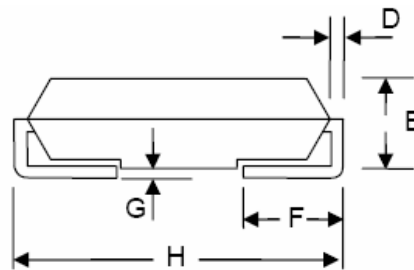
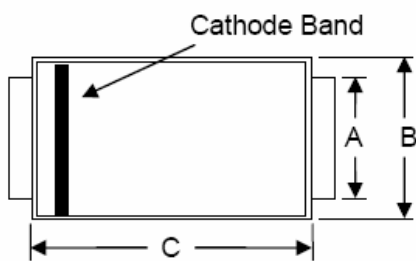


Fig.6:Variation of thermal impedance junction to ambient versus pulse duration(Printed circuit board FR4,Scu=35um,recommended pad layout)

## SMA Mechanical Dimensions



Item	Inches		Millimeters	
	Min.	Max.	Min.	Max
A	0.049	0.065	1.250	1.650
B	0.100	0.110	2.540	2.790
C	0.157	0.177	3.990	4.500
D	0.006	0.012	0.152	0.305
E	0.078	0.090	1.980	2.290
F	0.030	0.060	0.760	1.520
G	-	0.008	-	0.203
H	0.194	0.208	4.930	5.280

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