Thyristor Surge Suppresser

Version: A1 2021-12-02

Features

- Excellent capability of absorbing transient surge
- Quick response to surge voltage (nS Level)
- Eliminates overvoltage caused by fast rising transients
- Moisture sensitivity level: Level 1
- Non degenerative

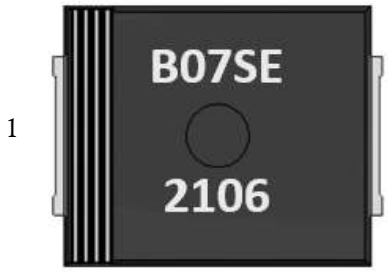
Exterior

SMK

Application Information

- DC Port

Package (Top View)



Agency Approvals

Icon	Description
RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003

Schematic Symbol

Part Number and Electrical Parameter

Part Number	I_{DRM}@ V_{DRM}		I_{DRM}①@ V_{DRM}		V_S②@ I_S		V_T@ I_T		I_H	C_O ③
	μA	V	μA	V	V	mA	V	A	mA	pF
	MAX		MAX		MAX		MAX		MAX	MAX
BS0750S-E1	5	75	5	360	120	800	4	2.2	150	600

Absolute maximum ratings measured at TA= 25°C RH = 45%-75% (unless otherwise noted).

① I_{DRM} is measured at V_{DRM}=360V (Pin 1 to pin 2)

② Vs is measured at 100KV/S

③ Off-state capacitance is measured at V_{DC}=2V, V_{RMS}=1V, f=1MHz

Thyristor Surge Suppresser

Part Numbering System

BS	0750	S	-	E	1
(1)	(2)	(3)		(4)	(5)

(1) Bencent Semiconductor Surge Arrester

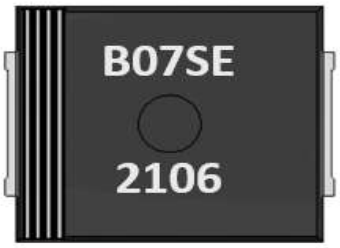
(2) Off-state Voltage, e.g.0750=0750×10^0=75V

(3) Package: SMK

(4) Rating Surge Voltage: 10KA (8/20μs)

(5) UNI-directional

Mark

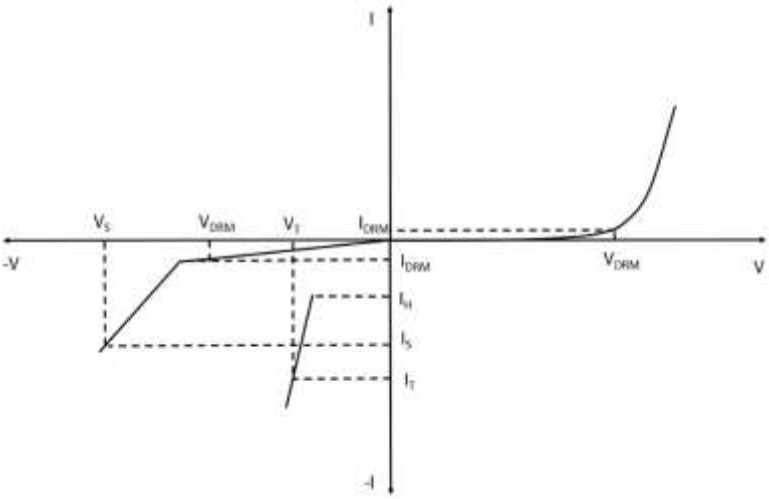


B07SE: Part Number

2106: June, 2021

V-I Curve

Parameters	Definition
V_{DRM}	Peak off-state voltage
I_{DRM}	Off-state Current
V_S	Switching Voltage
I_S	Switching Current
I_H	Holding Current
V_T	On-state voltage
I_T	On-state current
C_O	Off-state capacitance



Surge Ratings

Current Waveform	8/20μs
Voltage Waveform	1.2/50μs
Ipp	10KA

-Peak pulse current rating (I_{PP}) is repetitive and guaranteed for the life of the product;

Thermal Considerations

Symbol	Parameter	Value	Unit
TJ	Operating Junction Temperature Range	-40 to +125	℃
TS	Storage Temperature Range	-40 to +125	℃

Product Characteristics

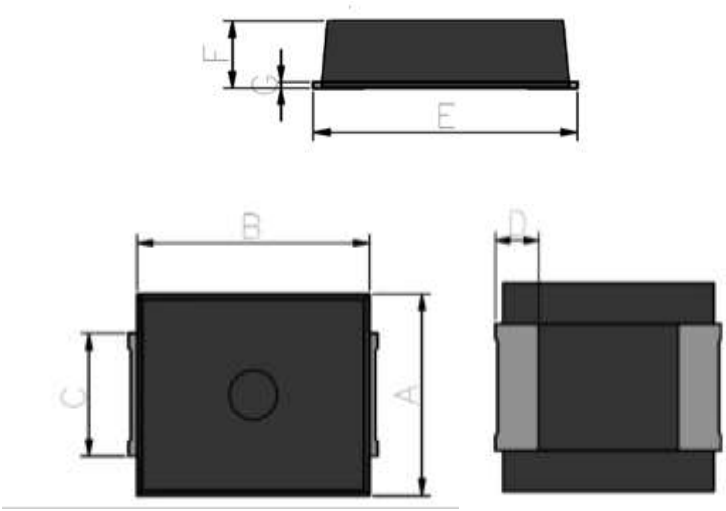
Lead Material	Copper Alloy
Terminal Finish	100% Matte-Tin Plated

Environmental Characteristics

Testing items	Technical standards
High temperature Reverse Bias Test	Temperature: 125±3℃, Bias=80%V_{DRM} Time: 168H
High Temperature Life Test	Temperature: 125℃ Time: 168H
High-low Temperature Cycle test	Temperature: From -40℃ to125℃ Dwell time: 30min, 100cycles
High Temperature &High Humidity Test	Temperature: 85℃, Humidity: 85% Test time: 168H
Pressure cooker Test	Temperature: 121℃, 2atm, Humidity: 100% Test time: 96H
Resistance of soldering heat	Temperature: 260±5℃ Time of dip soldering: 10s

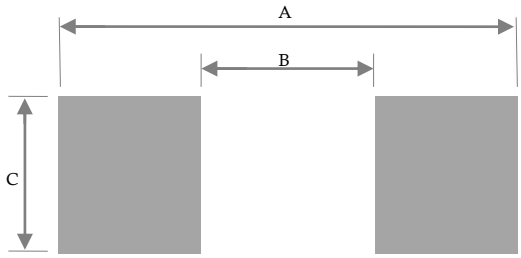
Note: The above testing items can be specified by customer's special request

Product Dimensions



REF	mm		Inch	
	Min	Max	Min	Max
A	7.95	8.55	0.313	0.337
B	9.7	10.3	0.382	0.406
C	4.8	5.2	0.189	0.205
D	1.7	2.3	0.067	0.091
E	10.4	10.8	0.409	0.425
F	1.65	2.85	0.065	0.112
G	0.15	0.3	0.006	0.012

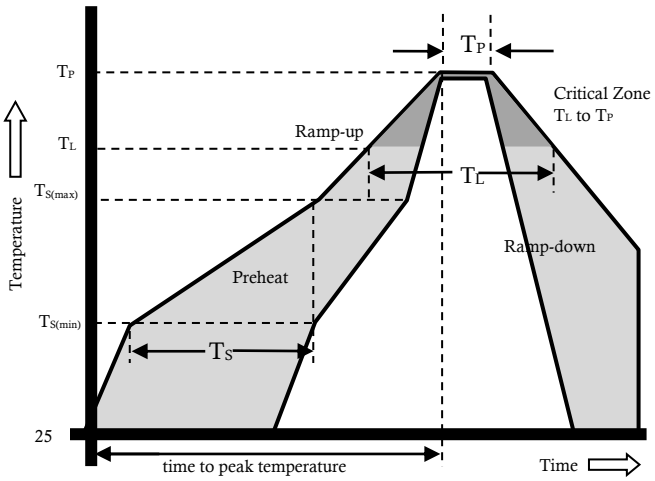
Recommended Soldering Pad



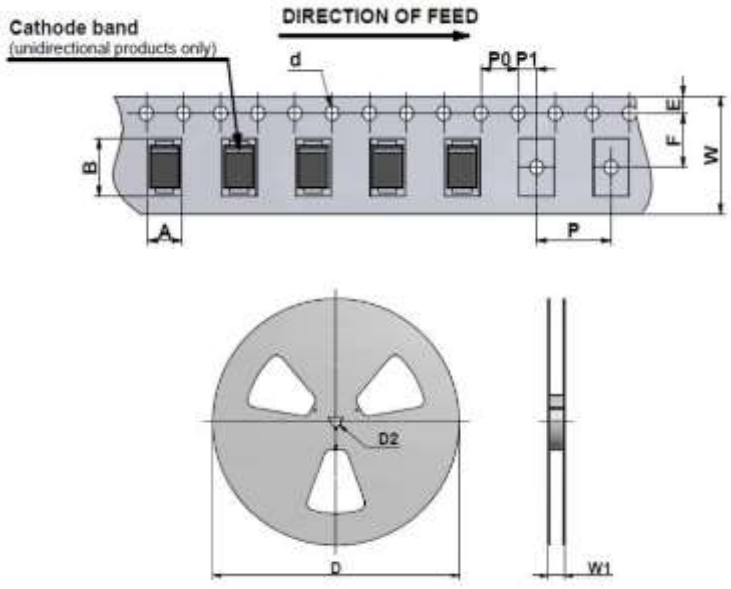
REF	mm	Inch
A	12.4	0.489
B	7. 4	0.291
C	5.4	0.213

Reflow Profile

Reflow Condition		Pb-Free assembly
Pre Heat	Temperature Min	150°C
	Temperature Max	200°C
	Time (min to max)	60 – 180 secs
Average ramp up rate (Liquid) Tamp (T_L) to peal		3°C/second max
T_S(max) to T_L - Ramp-up Rate		3°C/second max
Reflow	- Temperature (T_L) (Liquid)	217°C
	- Temperature (T_L)	60 – 150 seconds
Peak Temperature (T_P)		260+0/-5 °C
Time within 5°C of actual peak Temperature (T_P)		8-15secs
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_P)		8 minutes Max.
Do not exceed		260°C



Package Reel Information



REF	mm		Inch	
	Min	Min	Min	Min
A	8.3	8.9	0.327	0.350
B	10.7	11.3	0.421	0.445
d	1.4	1.6	0.055	0.063
D	ϕ330		ϕ13	
D2	12.7	13.3	0.500	0.524
E	1.55	1.95	0.061	0.077
F	11.3	11.7	0.445	0.461
P	11.8	12.2	0.465	0.480
P0	3.8	4.2	0.150	0.165
P1	1.8	2.2	0.071	0.087
W	23.5	24.5	0.925	0.965
W1	27.5	28.5	1.083	1.122

OUTLINE	REEL (PCS)	PER CARTON (PCS)	REEL DIAMETERS (mm)	CARTON SIZE(mm)		
				L	W	H
TAPING	1500	24,000	330	360	360	385