



INTRODUCTION

The Thermally Protected High Energy, TPHE, Series is designed for safe disconnection of the Varistor from the circuit due to abnormal operating conditions. The TPHE Series is designed to withstand the rigors of UL1449 4th Edition Type 1 and Type 2 applications while still meeting the requirements of typical High Energy Varistor applications.

The FSS design is for new and existing applications requiring high current surge capabilities, with integrated thermal protection accommodating form, and fit allowing for a drop in replacement for existing product offerings.

The FSD design is also for new and existing applications. It is packaged in a DIN-RAIL mounting configuration. The FSD design is available with 1, 2, 3, and 4 pole configurations for Delta and Wye connections.

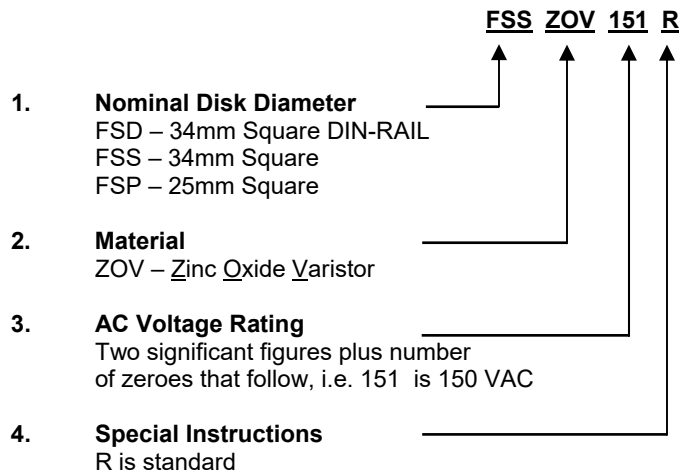
The FSP design is similar to the FSS. It utilizes a smaller package to accommodate lower profile applications.

Current ranges: I_N – (10kA, and 20kA)
 I_{MAX} – (25kA, and 50kA)

STYLE DESIGNATION

The Maida Style Number is the typical means to identify our components when ordered. The style number identifies several parameters that are important for the characteristics of the device. An alternative ordering method, if known, is by our Item Number.

The following example is the standard part numbering system when ordering our Thermally Protected Series components by the Maida Style Number:



STANDARD MARKING

Minimum marking shall consist of an abbreviated style designation and, when space is available, the manufacturer's initials or company logo.

Example:

MDC
 FSS
 151

Where:

MDC – Company initials/Logo
 FS - Fail Safe
 S - 34 mm
 151 - AC Voltage Rating (150VAC)

A manufacturing date code and/or special markings are available upon request. Other safety agency designations are included where applicable.

The FSP, FSS and FSD TPHE Designs



THERMALLY PROTECTED HIGH ENERGY (TPHE) SERIES

SPECIFICATIONS

THROUGH HOLE VARISTORS

Maida Style Number	Recognitions To Safety Agency Standards						Nominal Size (mm)	Minimum Marking	MCOV (AC)	Peak Current (8x20us)		VPR (V)	SCCR (kA)	Thermal Properties		UL SPD Type
										# of pulses				Operating Temp (°C)	Flame Rating (UL 94)	
										1	15 (I _N)					
	A	B	C	D	E	F				(kA)	(kA)					
FSPZOV151R	X	X					25	MDC-FSP-151	150	25	10	600	200	-40 to 80	V0	2CA
FSPZOV181R	X	X					25	MDC-FSP-181	180	25	10	800	200	-40 to 80	V0	2CA
FSPZOV321R	X	X					25	MDC-FSP-321	320	25	10	1000	200	-40 to 80	V0	2CA
FSPZOV421R	X	X					25	MDC-FSP-421	420	25	10	1200	200	-40 to 80	V0	2CA
FSPZOV551R	X	X					25	MDC-FSP-551	550	25	10	1800	200	-40 to 80	V0	2CA
FSPZOV681R	X	X					25	MDC-FSP-681	690	25	10	2000	200	-40 to 80	V0	2CA
FSSZOV151CR	X	X					34	MDC-FSS-151C	150	50	20	600	200	-40 to 85	V0	2CA
FSSZOV151R	X						34	MDC-FSS-151	150	50	20	600	200	-40 to 85	V0	1CA
FSSZOV181CR	X	X					34	MDC-FSS-181	180	50	20	600	200	-40 to 85	V0	2CA
FSSZOV181R	X						34	MDC-FSS-181	180	50	20	600	200	-40 to 85	V0	1CA
FSSZOV271CAR	X	X					34	MDC-FSS-271CA	275	50	20	800	200	-40 to 85	V0	2CA
FSSZOV271AR	X						34	MDC-FSS-275A	275	50	20	800	200	-40 to 85	V0	1CA
FSSZOV321CR	X	X					34	MDC-FSS-321CR	275	50	20	1000	200	-40 to 85	V0	2CA
FSSZOV321R	X						34	MDC-FSS-321	320	50	20	1000	200	-40 to 85	V0	1CA
FSSZOV421CR	X	X					34	MDC-FSS-421CR	420	50	20	1500	200	-40 to 85	V0	2CA
FSSZOV421R	X						34	MDC-FSS-421	420	50	20	1500	200	-40 to 85	V0	1CA
FSSZOV551CR	X	X					34	MDC-FSS-551CR	550	50	20	1500	200	40 to 85	V0	2CA
FSSZOV551R	X						34	MDC-FSS-551	550	50	20	1500	200	-40 to 85	V0	1CA
FSSZOV681CR	X	X					34	MDC-FSS-681CR	690	50	20	2000	200	-40 to 85	V0	2CA
FSSZOV681R	X						34	MDC-FSS-681	690	50	20	2000	200	-40 to 85	V0	1CA

NOTES:

Appendix A lists the single-pulse peak current and energy ratings on file with the Safety Agencies.

Maximum transient rating specified in this table are valid. They may differ from those shown in Appendix A.

A = UL1449 File E321173 - Surge Protective Devices

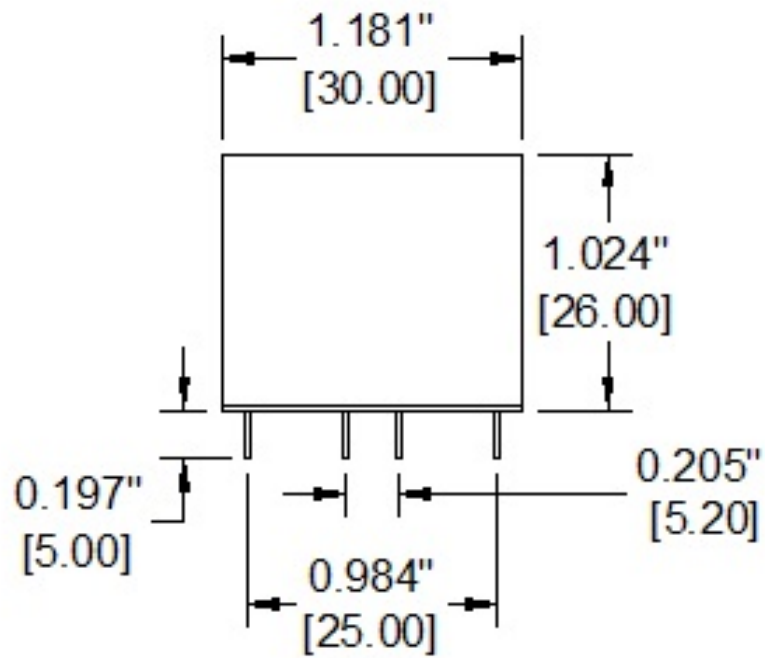
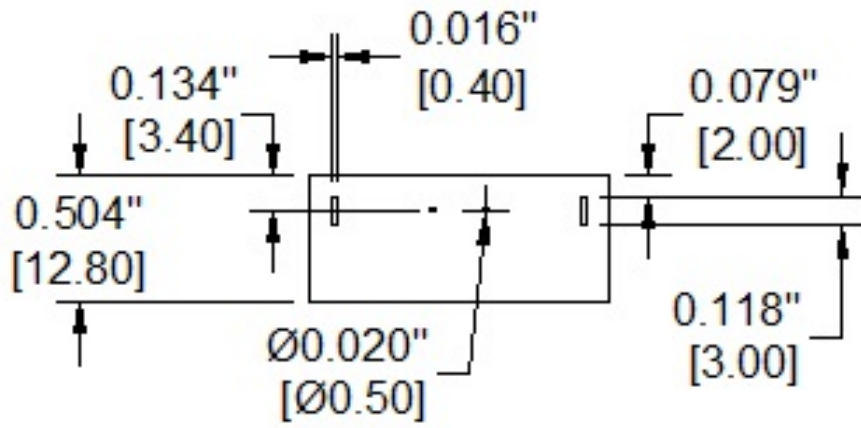
B = cUL File E321173 - Surge Protective Devices

C = CSA C22.2 File 033468

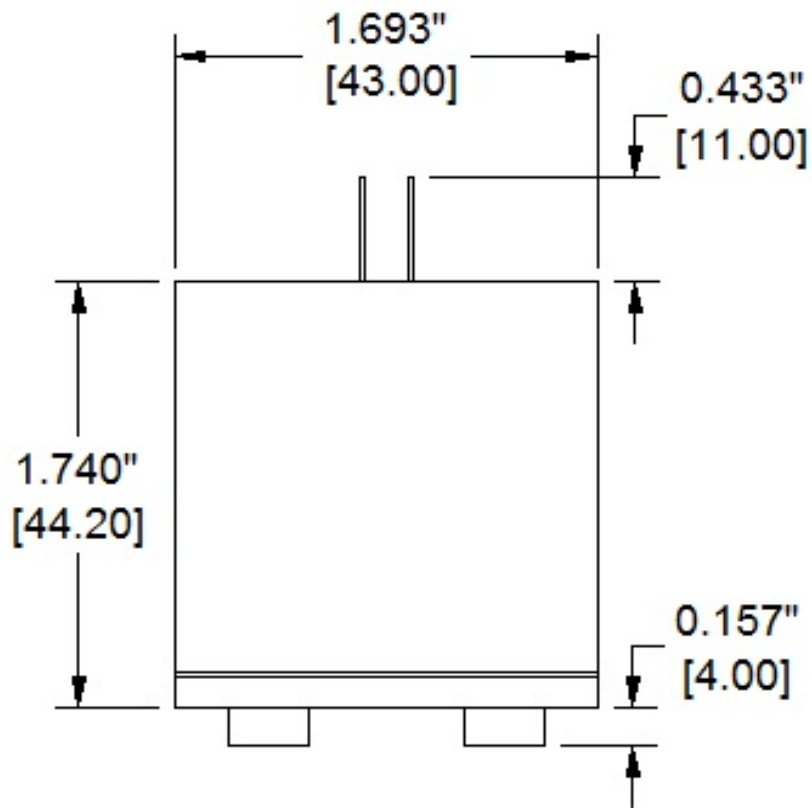
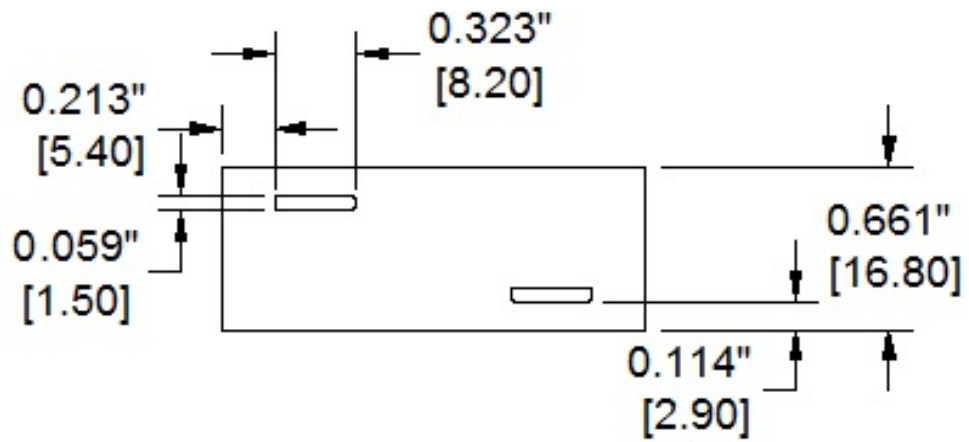
D = VDE File 40017480

E = SEV - 96.7 70250.01

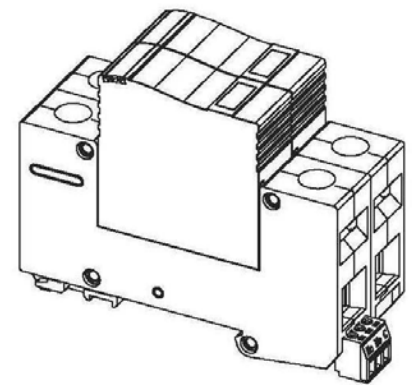
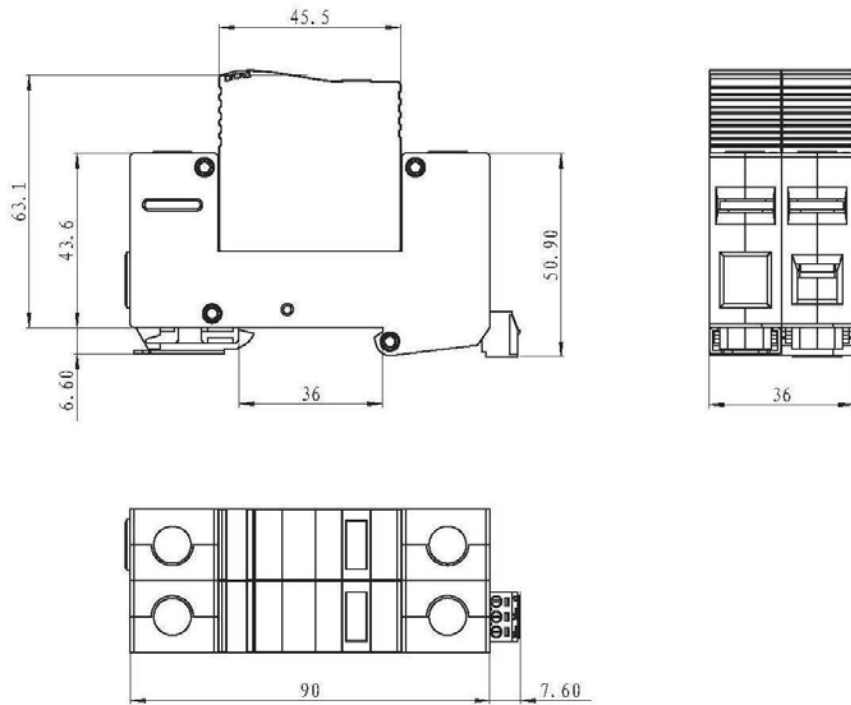
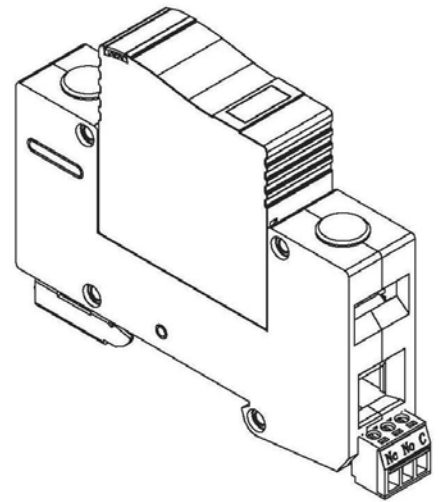
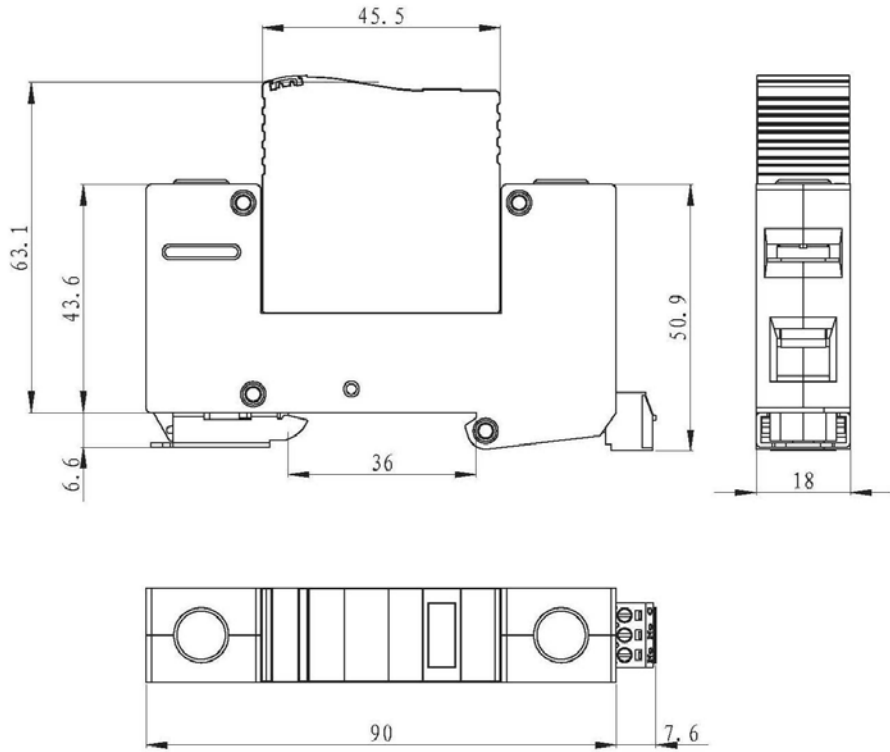
FSP Dimensions



FSS Dimensions



FSD Dimensions



FSD Dimensions (cont.)

