Maida Development Company
Date 01/16/2021

HIGH ENERGY SERIES

MAIDA STYLE NUMBER D7580ZOV481RA820

MAIDA ITEM NUMBER 01-1818

The High Energy Series is our large tab-leaded and wire-leaded varistors. They are available in round and square shapes. These varistors are available in 25mm, 32mm, 34mm, 40mm, and 53mm configurations including single and dual designs. They are available with maximum continuous operating voltages (MCOV) ranging from 130VAC to 1000VAC (up to 1500VAC upon request). The High Energy Series is designed for pulse repetition and/or very large surge current environments. Numerous tab forms are available for all sizes, with limited wire leaded options.

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 HE Series components by the Maida Style Number:

D 78 80 ZOV 131 RA 21

Coating Designation

D – Standard Epoxy Coating
P – Phenolic Coating
S – Square Disc Epoxy Coating
PS – Square Disc Phenolic Coating
None – Denotes no conformal coating.

Nominal Sizes

S66 - 25mm Square
78 - 32mm
S75 - 34mm Square
75 - 40mm
77 - 53mm

Lead Configuration

Material Identifier

Zinc Oxide Varistor

AC Voltage Rating

Two significant figures plus number of zeroes that follow, i.e. 131 is 130VAC

Special Instructions

RA is standard

Rating Code

Up to four numbers

Electrical Specifications

Continuous AC Voltage	480	VAC
Continuous DC Voltage	640	VDC
Maximum DC Leakage @ 640 VDC	200	uA
Low Varistor Voltage Limit	679	VDC
High Varistor Voltage Limit	829	VDC
Nominal Varistor Voltage	754	VDC
Current for Varistor Voltage	1	mA
Maximum Clamp Voltage	1300	V
Maximum Clamp Voltage Test Current	300	A
Peak Current Rating (1 Pulse)	40000	A
Peak Current Rating (2 Pulse)	32000	A
Energy Rating (8X20us)	820	J
Typical Capacitance	1500	pF
Impulse Response Time	< 50	ns
Minimum Hipot of Coating	2500	VDC
Minimum I.R. of Coating	1000	MΩ
Current/Energy Derating Above 85°C	-2.5	%/°C

Special Notes:

Safety Agency Recognitions

UL 1449 File Number	E321173
- Tested to Type:	5-5kA
C-UL File Number	E321173
VDE File Number	
CSA File Number	
SEV File Number	

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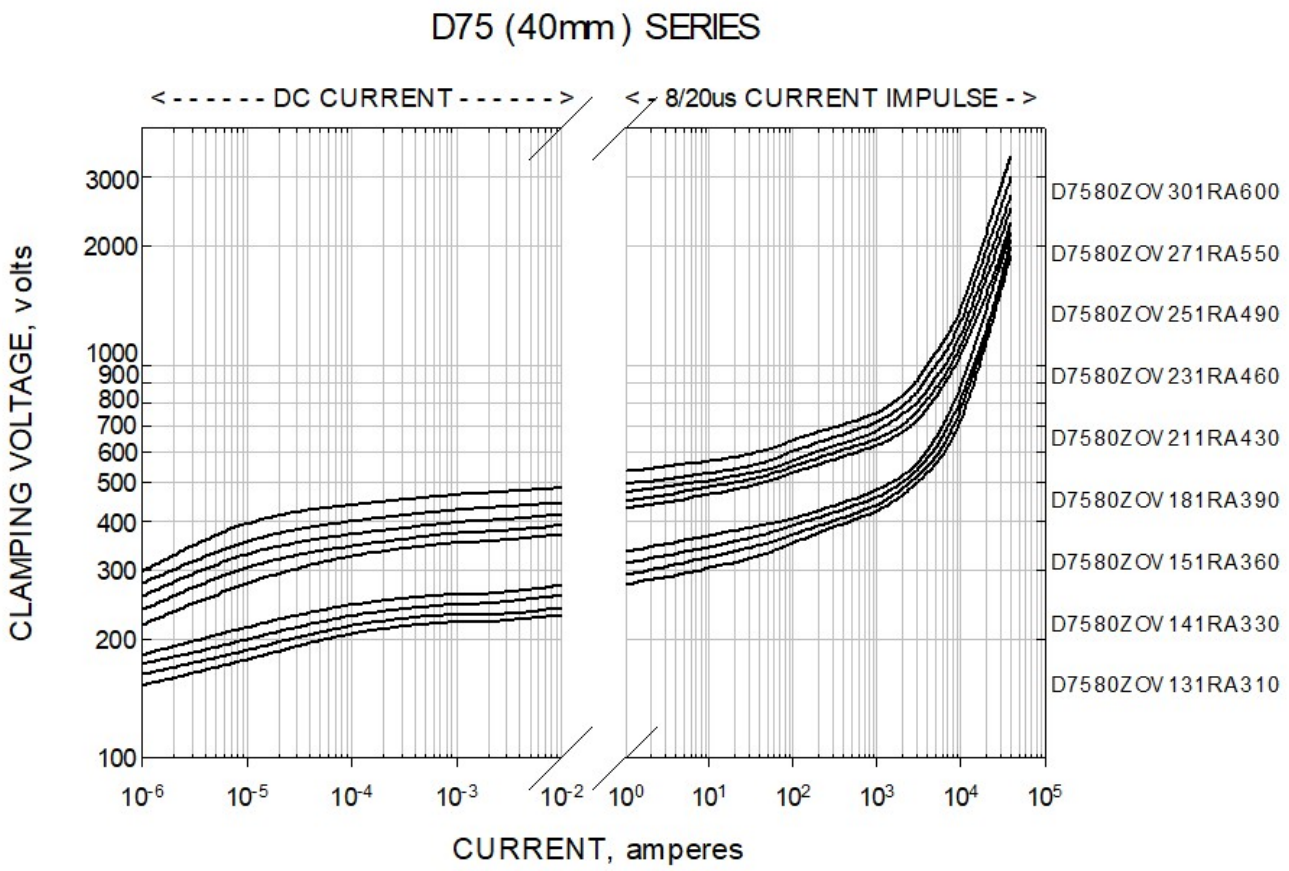
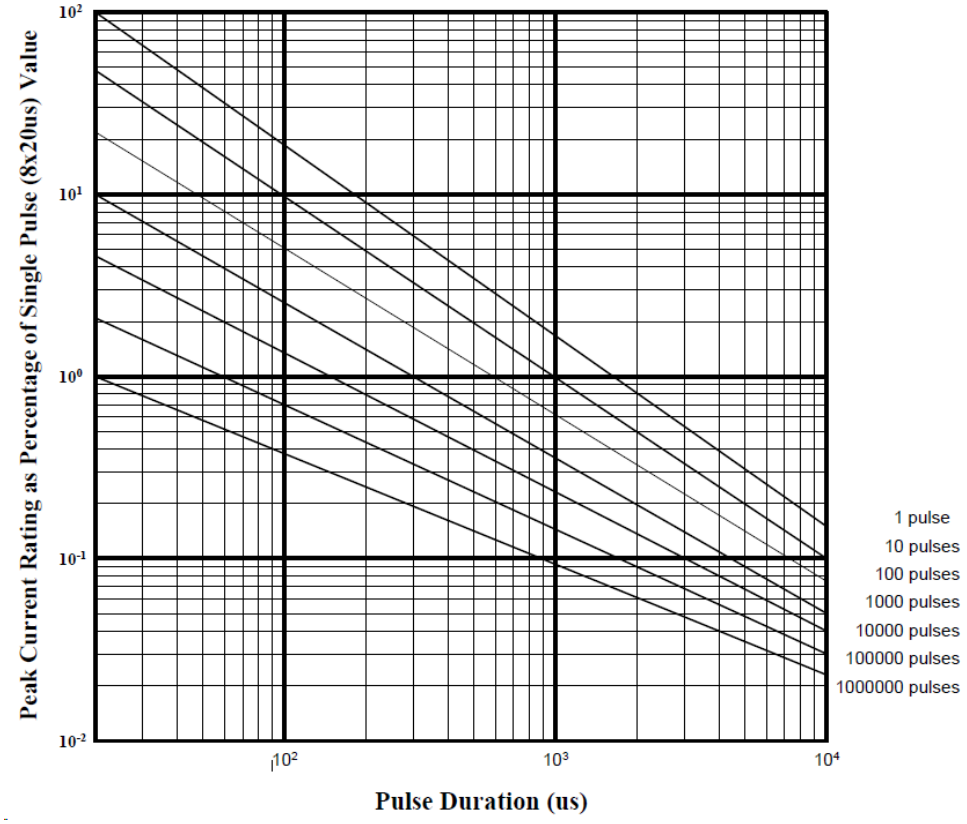
Characteristic Graphs





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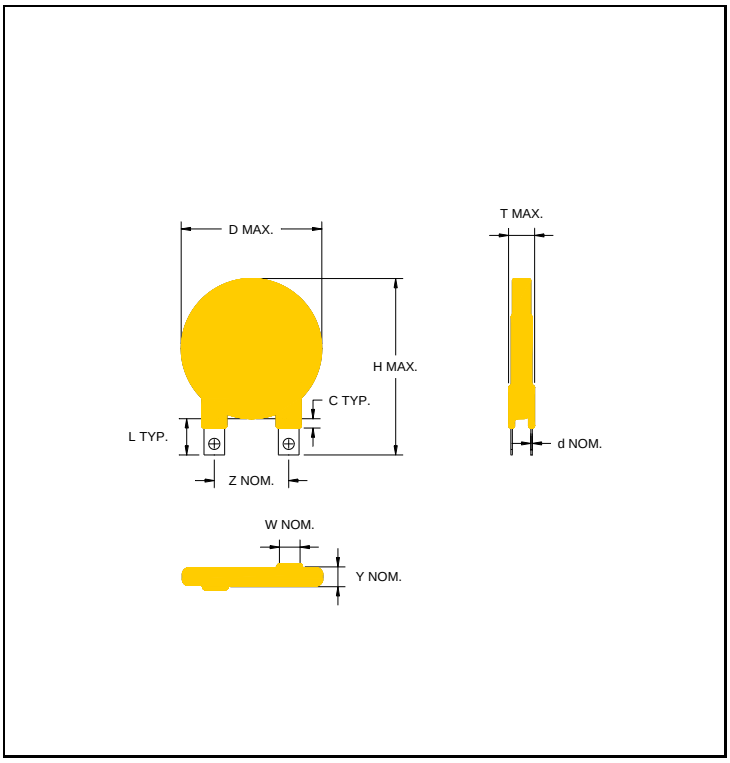


* Contact Maida for a more detailed configuration drawing.

Physical Specifications

Lead Style	165	
X Nominal	1	in.
X Tolerance	0.02	in.
Y Nominal	0.205	in.
Y Tolerance	0.04	in.
Z Nominal		in.
Z Tolerance		in.
Lead Length Nominal		in.
Lead Length Tolerance		in.
d Nominal	0.02	in.
Wire Gauge	24	AWG
Minimum Marking	Z481-820UL	
Nominal Disk Size	40	mm
D Maximum	1.89	in.
T Maximum	0.35	in.
H Maximum	2.37	in.
Coating Type	EPOXY	

Thermal Specifications

Minimum Operating Temperature	-40	°C
Maximum Operating Temperature	85	°C
Varistor Voltage Temperature Coeff	-0.05	%/°C
Minimum Storage Temperature	-50	°C
Maximum Storage Temperature	125	°C
Recommended Solder Temperature	260	°C
Recommended Reflow Temperature	260	°C

Environmental Compliances

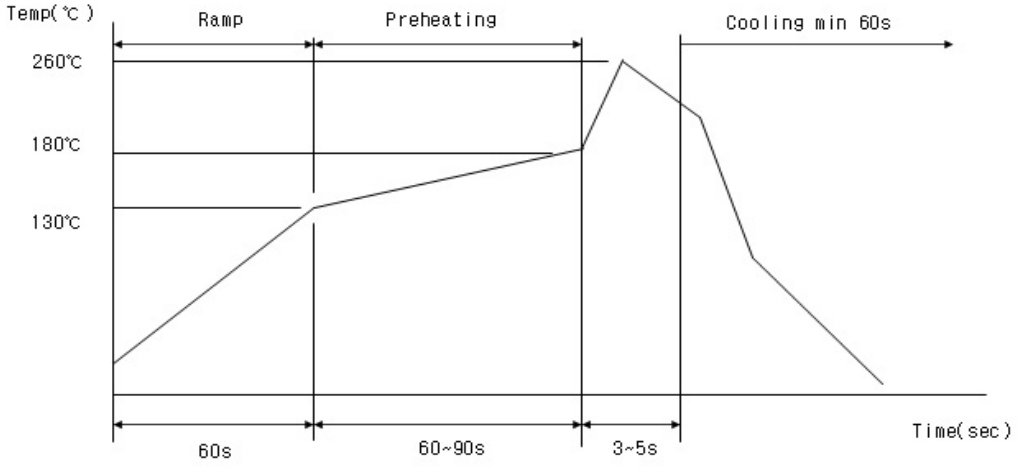
RoHS COMPLIANT

Conflict Minerals

Prop 65

REACH COMPLIANT

Recommended Soldering Profile



MOV Terminology

TECHNICAL TERM	DESCRIPTION
Operating Temperature	Operating Temperature Range without Derating.
Storage Temperature	Storage Temperature Range without Voltage Applied.
Curent / Energy Derating	Derating of maximum Values when Operated above +85°C
Varistor Voltage Temperature Coefficient	$\frac{Vv \text{ at } 85°C - Vv \text{ at } 25°C}{Vv \text{ at } 25°C} \times \frac{1}{60°C} \times 100$ Where Vv is varistor voltage at 1mADC
Insulation Resistance	Minimum resistance between shorted terminals and varistor surface.
HiPot Encapsulation	Minimum voltage applied for one minute between shorted terminals and varistor surface.
Impulse Response Time	Time lag between application of surge and varistor's "turn-on" conduction state.
DC Leakage Current	Maximum current with specified DC voltage applied.
Applied Voltage - AC	Maximum continuous sinusoidal RMS voltage which may be applied (MCOV).
Applied Voltage - DC	Maximum continuous DC voltage which may be applied.
Transient Energy (Joules)	The maximum energy absorbed with a varistor voltage change of less than ± 10% when one impulse of an 8x20us current waveform is applied.
Transient Peak Current	The maximum current with a varistor voltage change of less than ± 10% when one impulse of an 8x20us current waveform is applied.
Varistor Voltage	Voltage across the varistor measured at 1mADC
Maximum Clamping Voltage	Peak voltage across the varistor with a specific peak impulse current applied (8x20us).
Capacitance	Typical value measured at 1Vrms and a test frequency of 1KHz.