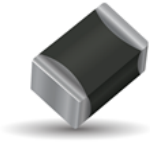


## Glass Encapsulated TransGuard® Multilayer Varistors

for Industrial and General applications



The Glass Encapsulated TransGuard® multilayer varistors provide bi-directional overvoltage protection as well as EMI/RFI attenuation in a single SMT package. Glass encapsulation extends the range into high energy applications and in addition provides enhanced resistance against harsh environment or process such as acidic environment, salts or chlorite flux.

### Electrical Characteristics

#### Operating Temperature

-55 to +125°C

Case Size	V <sub>W</sub> (DC)	V <sub>W</sub> (AC)	V <sub>B</sub>	V <sub>C</sub>	I <sub>VC</sub>	I <sub>L</sub>	E <sub>T</sub>	PP	I <sub>P</sub>	Cap	Cap Tol
EIA	Vdc	Vac	V	V	A	μA	J	W	A	pF	-
2220	56	40	68.0±10%	110	10	15	9	6800	1000	2000	+100/-50%

V<sub>W</sub>(DC) DC Working Voltage [V]

V<sub>W</sub>(AC) AC Working Voltage [V]

V<sub>B</sub> Typical Breakdown Voltage [V @ 1mA<sub>DC</sub>]

V<sub>C</sub> Clamping Voltage [V @ I<sub>VC</sub>]

I<sub>VC</sub> Test Current for V<sub>C</sub> [A, 8x20μs]

I<sub>L</sub> Maximum leakage current at the working voltage [μA]

PP Peak Power Rating [W, 10x1000μs]

E<sub>T</sub> Transient Energy Rating [J, 10x1000μs]

I<sub>P</sub> Peak Current Rating [A, 8x20μs]

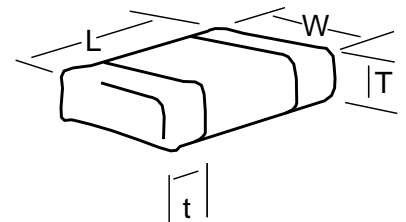
Cap Typical capacitance [pF] @1kHz and 0.5VRMS

Cap tol Capacitance tolerance from typical value

### Dimensions

mm (inches)

Size (EIA)	Length (L)	Width (W)	Thickness (T)	Terminal (t)
2220	5.70±0.40	5.00±0.40	2.5 max	1.00 max
	(0.224±0.016)	(0.197±0.016)	(0.098 max)	(0.039 max)



### Termination

Ni barrier/100% Sn plated termination for lead free soldering.



RoHS  
COMPLIANT

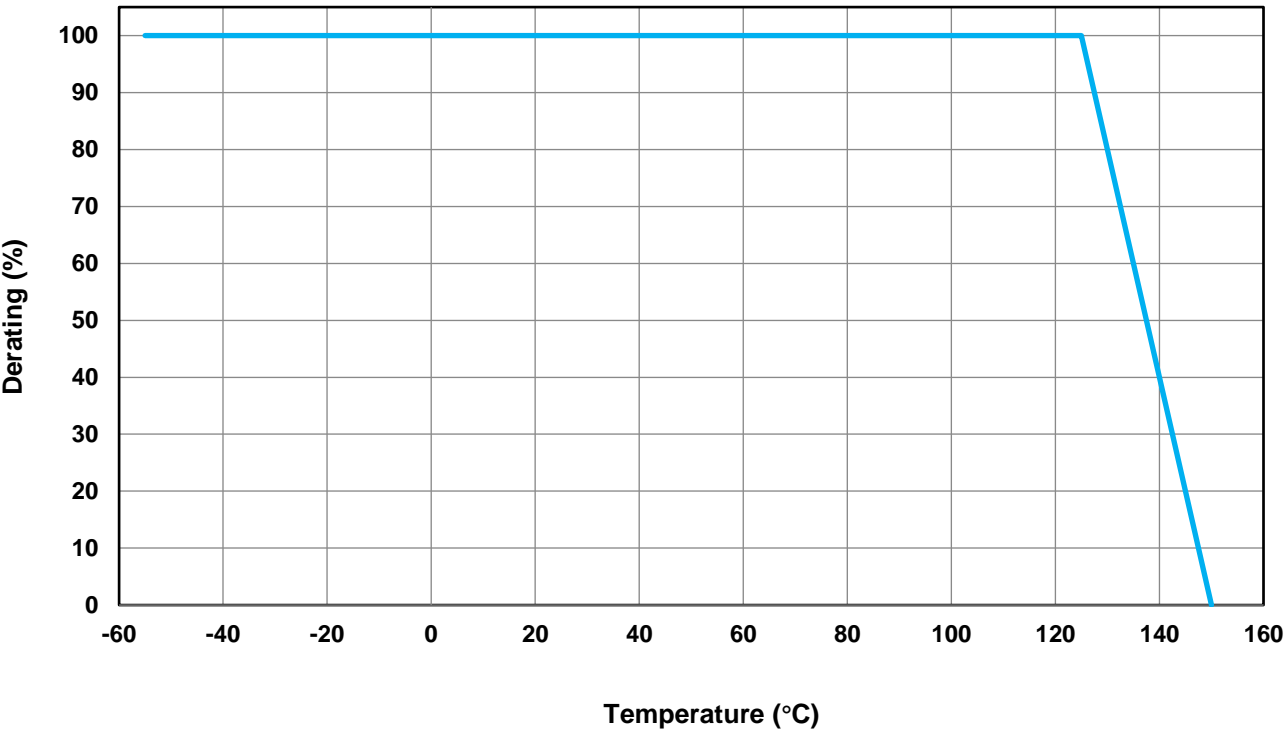
MSL 1

Pb Free 260°C

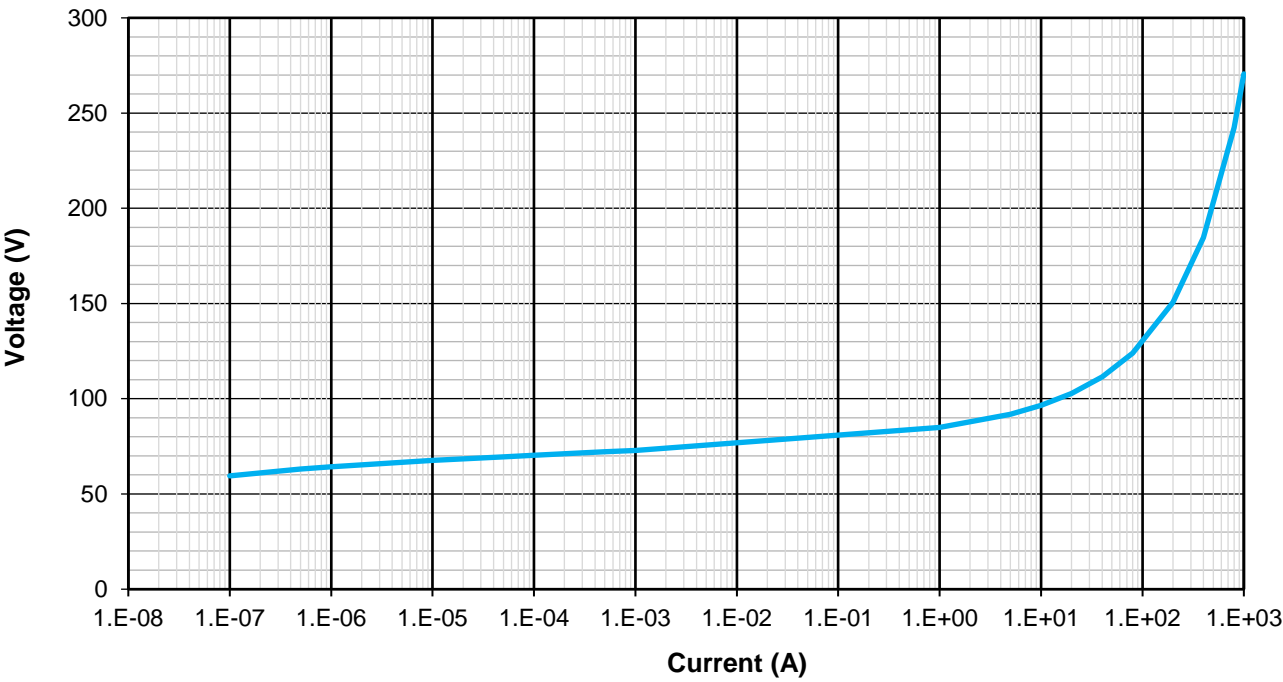
How to order (Packaging options)

<b>VG</b>	<b>2220</b>	<b>56</b>	<b>Y</b>	<b>111</b>	<b>T</b>	<b>P</b>
Varistor Glass Encapsulated	Case Size	Working Voltage	Energy Rating	Clamping Voltage	Packaging	Termination
		56 = 56Vdc	Y = 9J	111 = 110V	D = 7" reel (1,000pcs) T = 13" reel (4,000pcs)	P = Ni/Sn

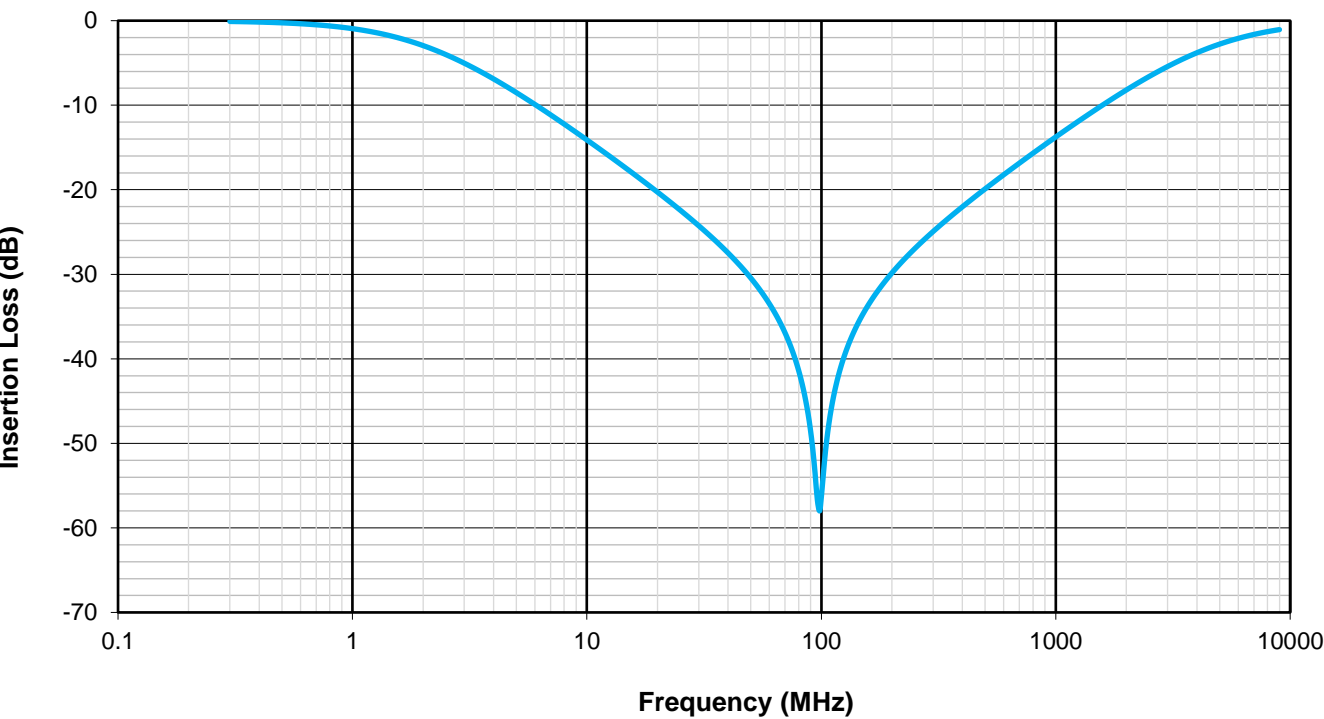
Typical Energy Derating Curve (Transient Energy, Peak Current, Power)



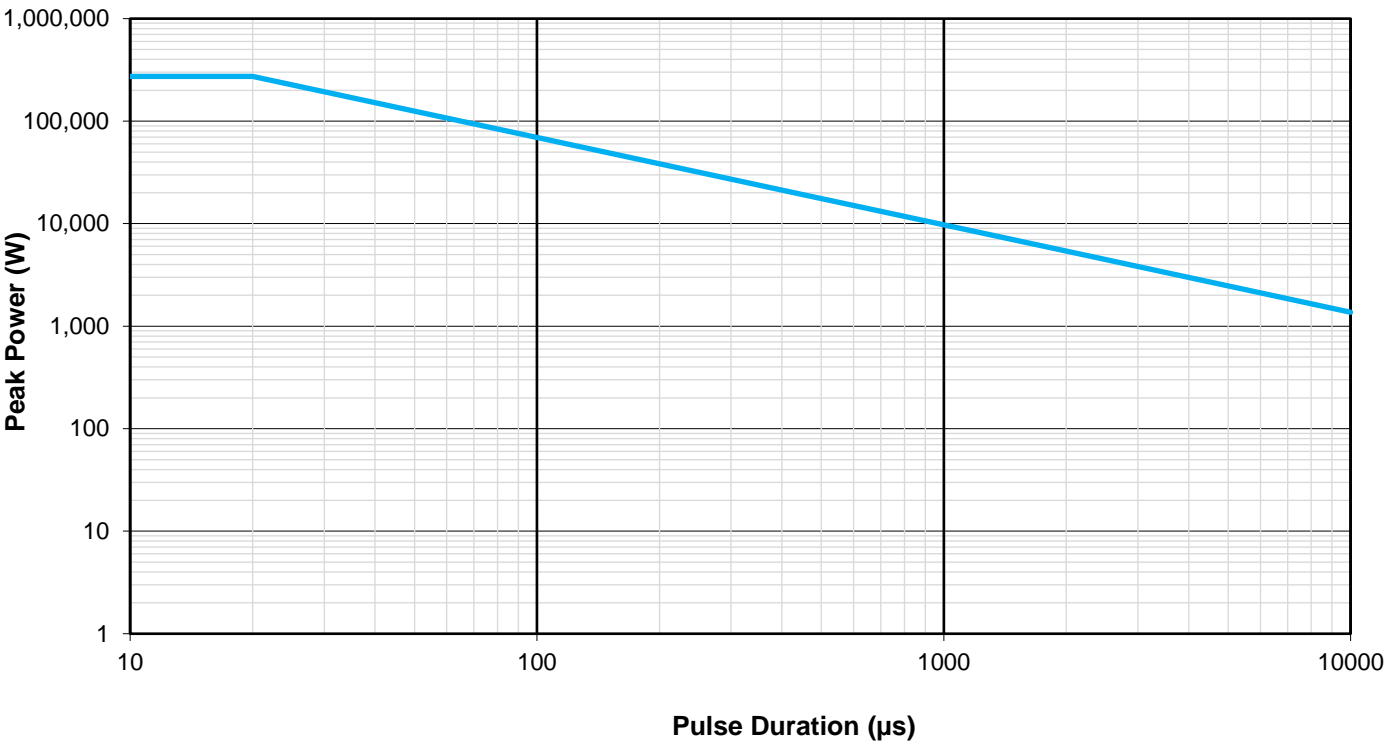
Voltage / Current Characteristics



S21 Characteristics



Power Derating



NOTICE: Specifications are subject to change without notice. All statements, information and data given herein are beleived to be accurate and reliable, but are presented without guarantee or responsibility of any kind, expressed or implied. Specifications are typical and may not apply to all applications.