

# Medium Power MLV (VJ13, 14, 15, 20)



## Medium Power Multilayer Chip Varistor

### Transient Voltage Suppression, ESD Protection Devices & EMI Devices

#### AUTOMOTIVE SERIES – VJ13, 14, 15, 20

#### FEATURES

- Pd/Ag Terminations
- High Energy Ratings (up to 25 Joules with 2220 case size)
- Multiple Strike Capability
- Provides EMC Capacitance
- Well suited to protect against automotive related transients
- Specified with “Load Dump” and “Jump Start” Test Requirements

#### GENERAL CHARACTERISTICS

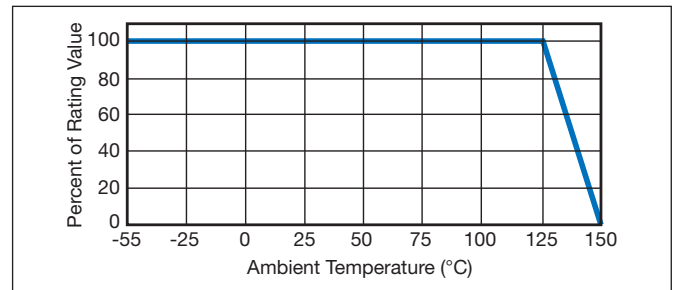
Storage Temperature: -55°C to +125°C  
 Operating Temperature: -55°C to +125°C

#### TARGET APPLICATIONS

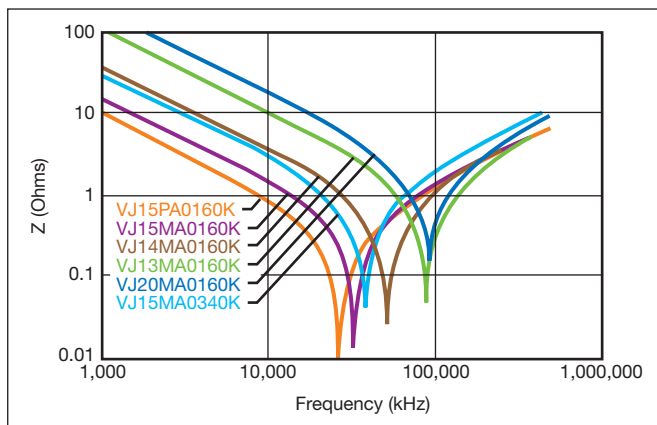
Automotive and other Consumer Products

#### TEMPERATURE CHARACTERISTICS

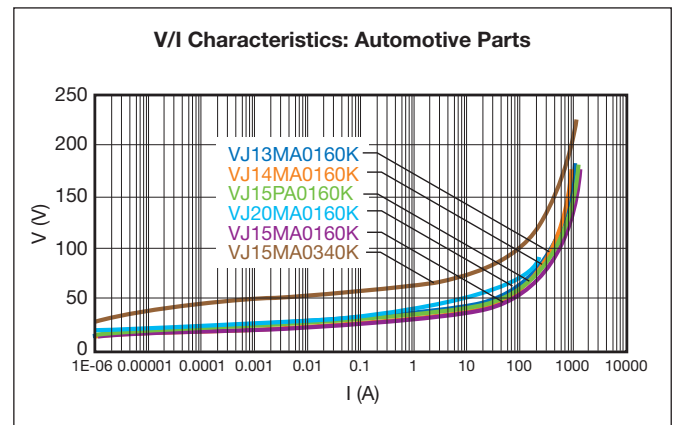
For Current, Energy and Power



#### IMPEDANCE CHARACTERISTICS



#### V/I CHARACTERISTICS



#### PART NUMBERS

Part Number	Case Size	Operating Voltage		Vnominal At 1mA DC			Vclamp (8x20µs)		Leakage At Vdc µA	Energy (10x1000µs) J	Load Dump (10x) J	Jump Start 5min Max V	Max.Peak Current (8x20µs) Ip (A)	Mean Power Dissipation W	CAP (1kHz/.5Vrms) pF
		Vrms	Vdc	min	Nom	max	Vp	Ip(A)							
VJ20MA0160KBA	1206	14	16	22	24.5	27	40	1	50	0.6	1.5	24.5	200	0.008	900
VJ13MA0160KBA	1210	14	16	22	24.5	27	40	2.5	25	1.6	3	24.5	400	0.010	1800
VJ14MA0160KBA	1812	14	16	22	24.5	27	40	5	100	2.4	6	24.5	800	0.015	5000
VJ15MA0160KBA	2220	14	16	22	24.5	27	40	10	100	5.8	12	24.5	1200	0.030	11000
VJ15PA0160KBA	2220	14	16	22	24.5	27	40	10	100	5.8	25	24.5	1200	0.030	16000
VJ15MA0340KBA	2220	30	34	42.3	47	51.7	77	10	100	12	12	50	1200	0.030	4000



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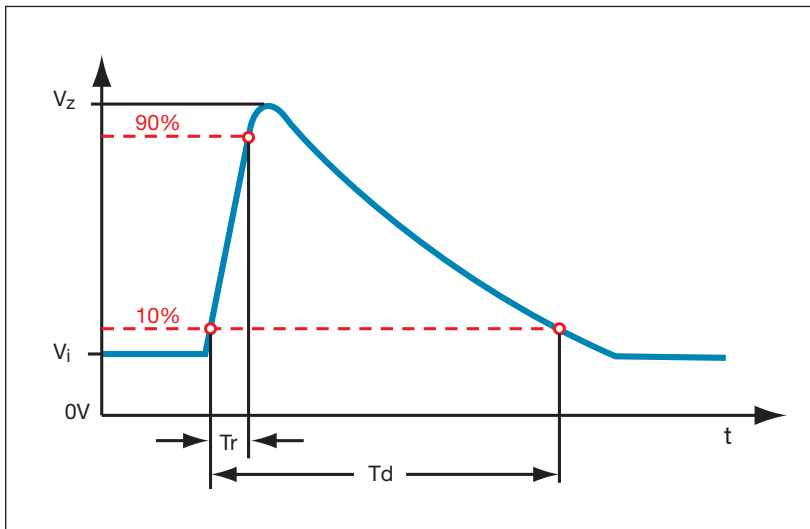
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#### AUTOMOTIVE LOAD DUMP TEST

(According to ISO DP7637/2 Pulse 5)



When using the test method indicated below, the amount of Energy dissipated by the varistor must not exceed the Load Dump Energy value specified in the product table.

Voltage Pulse applied to the varistor:

#### 12V Network

$V_i = 13.5V$

$T_d = 100$  to  $350ms$

$R_i = 2$  Ohms (Internal Resistance)

$V_z = 70$  to  $200V$

Number of Pulses = 10 Pulses

Other Load Dump Simulations can be achieved

#### 24V Network

$V_i = 27V$

$T_d = 100$  to  $350ms$

$R_i = 2$  Ohms (Internal Resistance)

$V_z = 70$  to  $200V$

Number of Pulses = 10 Pulses

#### PULSE DEGRADATION

