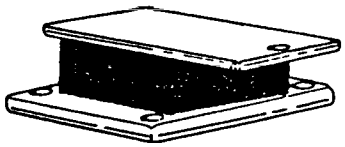
MPZ5-16 - MPZ5-32 - MPZ5-180 Series

Silicon power transient suppressor designed for applications requiring protection of voltage sensitive electronic devices in danger of destruction by high energy voltage transients. Individual cells are matched to insure current-sharing under high current pulse conditions.



MAXIMUM RATINGS

Transient Power Dissipation: 40 kW
Pulse Width: 0.1 ms, (See Figure 1)

DC Power Dissipation: 350 Watts @ Tc = 25°C
(Derate 2.33 W/° C above 25° C)

Operating Junction & Storage Temperature
Range: - 65° C to +175° C

Polarity:
Anode-to-Case is Standard
Cathode-to-Case Available Upon Request

ELECTRICAL CHARACTERISTICS (TA = 25°C) (VF = 1.5 V max @ 10 A for all types)

Type	Nominal Operating Voltage (Note 1)		Maximum Device Clamping Factor $CF = \frac{VZ @ IZ (pulse)}{VZ @ IZT}$ (Note 2)	Minimum Zener Voltage		Maximum Zener Voltage Pulse Width = 1.0 ms		Maximum Reverse Current IR(max)	Typical Capacitance C (typ)
	V_{OP} (PK) Vdc	$V_{OP(RMS)}$ V rms		VZ(min) @ IZT Vdc	Adc	V_Z(max) @ I_Z (pulse) Vdc	Adc	@ $V_R = V_{OP}$ (PK) uAdc	@$V_R = V_{OP(PK)}$ uF
MPZ5-16A	14	10	1.25	16	0.4	24	200	50	0.025
-16B	14	10	1.25	16	0 4	20	200	50	0.025
-32A	28	20	1.25	32	0.2	50	100	50	0.011
-32B	28	20	1.25	32	0.2	45	100	50	0.011
-32C	28	20	1.25	32	0.2	40	100	50	0.011
-180A	165	117	1.14	180	003	250	20	50	0.0012
-180B	165	117	1.14	180	0.03	225	20	50	0.0012
-180C	165	117	1.14	180	0.03	205	20	50	0.0012

FIGURE 1 – MAXIMUM NON-REPETITIVE SURGE POWER
(RECTANGULAR WAVEFORM)

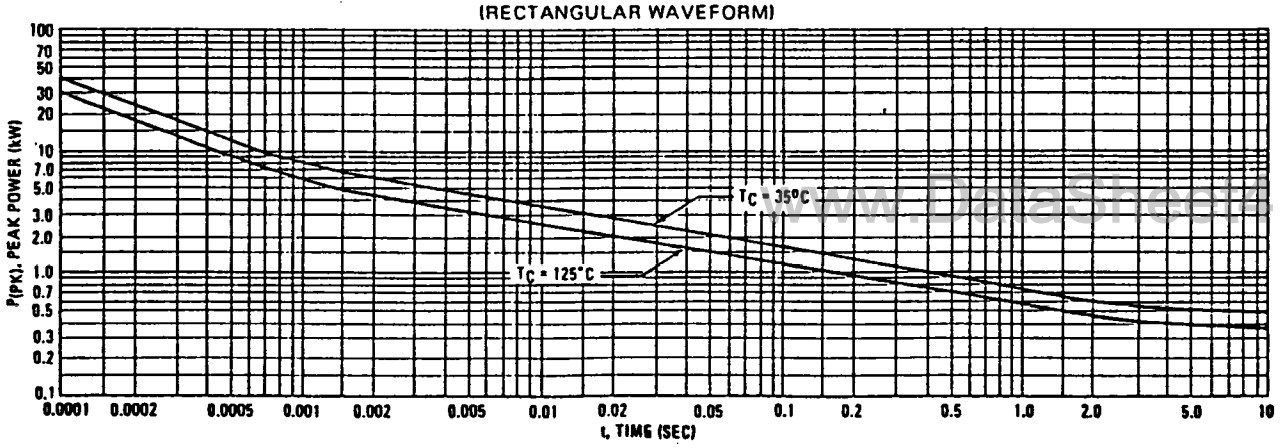
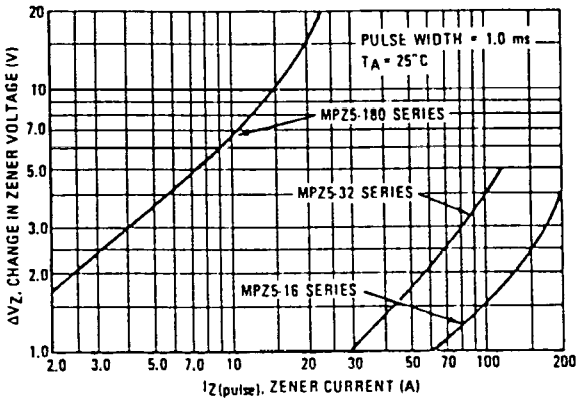


FIGURE 2 – TYPICAL DYNAMIC ZENER VOLTAGE CHARACTERISTICS (Note 2)



NOTE t: Nominal operating voltage is defined as normal input voltage to device for non-operating condition. If non-sinusoidal wave or dc input is present, peak voltage input values $V_{OP(PK)}$ should be used to select device type.

NOTE 2: The maximum device clamping factor CF is a ratio of VZ measured at IZ (pulse) given in the Electrical Characteristics Table divided by VZ measured at IZT under steady state conditions. This value guarantees the sharpness of the voltage breakdown of individual devices. Figure 2 demonstrates the typical sharpness of the breakdown, and indicates the voltage regulation over a wide range of currents.

$$\Delta VZ = VZ @ IZ(pulse) - VZ @ IZT$$