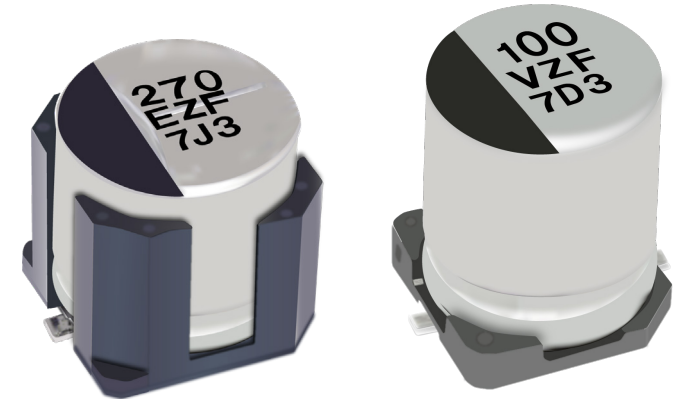
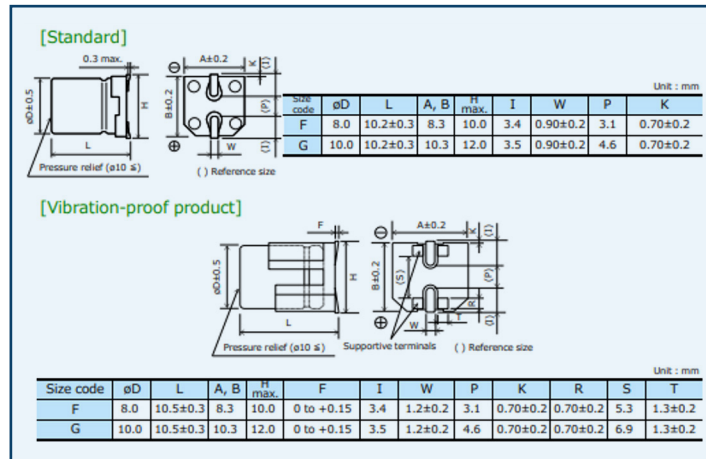


# CONDUCTIVE POLYMER HYBRID ALUMINUM ELECTROLYTIC CAPACITORS

ZF-SERIES: SMD/THT VARIANT IN HYBRID SUITABLE FOR HIGH TEMPERATURE APPLICATIONS

## ZF-Series Added Value

- Temperature range: -55°C to 150°C
- High capacitance: 33 to 330 $\mu$ F
- Ripple current ratings up to 1 Arms at 150°C
- ESR as low as 20m $\Omega$
- Size:  $\varnothing$ 8 x 10.2mm,  $\varnothing$ 10 x 10.2mm



Size/Specifications		Rated Voltage			
		25V	35V	50V	63V
$\varnothing$ 8 x 10.2	Cap. [ $\mu$ F]	150	100	56	33
	ESR [m $\Omega$ ]	27	30	35	40
	Ripple [mA] at 150°C	800	770	700	650
$\varnothing$ 10 x 10.2	Cap. [ $\mu$ F]	270	150	100	56
	ESR [m $\Omega$ ]	20	23	28	30
	Ripple [mA] at 150°C	1,000	950	900	840

# CONDUCTIVE POLYMER HYBRID ALUMINUM ELECTROLYTIC CAPACITORS

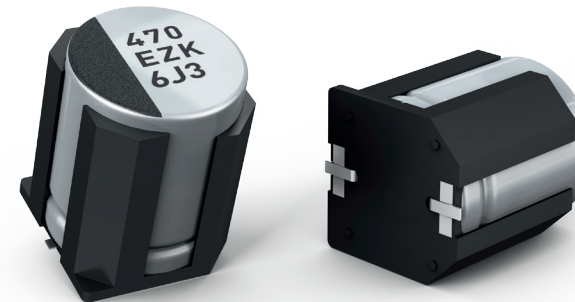
**Panasonic**  
INDUSTRY

PRODUCT LINE-UP OF HYBRID CAPACITOR

	ZA	ZC	ZK	ZKU	ZT <small>NEW</small>	ZS	ZSU <small>NEW</small>	ZU <small>NEW</small>	ZE	ZF
Endurance	105°C 10,000h	125°C 4,000h	125°C 4,000h	125°C 4,000h	125°C 4,000h	125°C 4,000h	125°C 4,000h	125°C 4000h (135°C 4000h)	145°C 2,000h	150°C 1,000h
Rated Voltage [V DC]	25 – 80	25 – 80	25 – 35	25 – 35	25 – 63	25 – 63	25 – 63	25 – 63	25 – 63	25 – 63
Rated Capacitance [ $\mu$ F]	10 – 330	10 – 330	33 – 470	39 – 560	33-330	150 – 560	120-1000	100-560	33 – 330	33 – 270
E S R [m $\Omega$ ]	20 – 120	20 – 120	20 – 100	20 – 100	16-32	11 – 19	11 – 19	08 – 12	20 – 40	20 – 40
Ripple Current [Arms@Peak Temperature]	0.75 – 2.5	0.5 – 2	0.75 – 2.8	0.75 - 2.8	2.4-3.5	3.0-4.0	3.0-4.0	4.6-5.8 (3.2-4.0)	0.6 – 0.9	0.65 – 1
Leakage Current	0.01 CV									
Damp Heat	85°C 85% RH 2,000 h									

## Anti-vibration SMD Capacitors

Specification	
Acceleration	294m/S <sup>2</sup> (30G)
Frequency [Hz]	5~2000
Amplitude [mm]	max. 5 (peak to peak)
Direction and Duration of Vibration	X, Y, Z axes for 2 hours each



Panasonic Industry Europe GmbH  
[capacitor@eu.panasonic.com](mailto:capacitor@eu.panasonic.com)  
[industry.panasonic.eu](http://industry.panasonic.eu)

For complete and current  
 Panasonic capacitor portfolio,  
 please also visit [industrial.panasonic.com](http://industrial.panasonic.com)