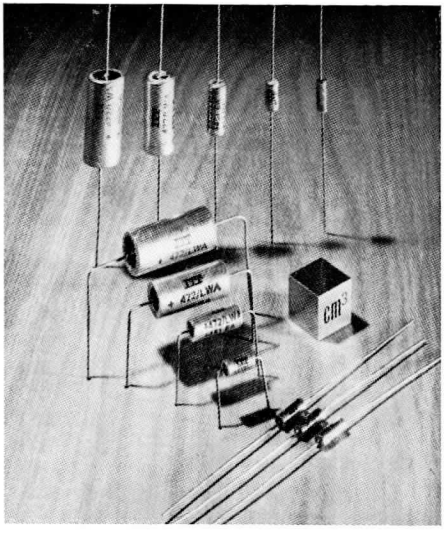
Resin End Sealed Solid Tantalum Capacitors
Code : TAR



BRIEF DATA

CAPACITANCE RANGE
0,1μF to 680μF

CAPACITANCE TOLERANCE
$\pm$20% standard
($\pm$10% special selection)

WORKING VOLTAGES
6 10 15 20 and 35V d.c.

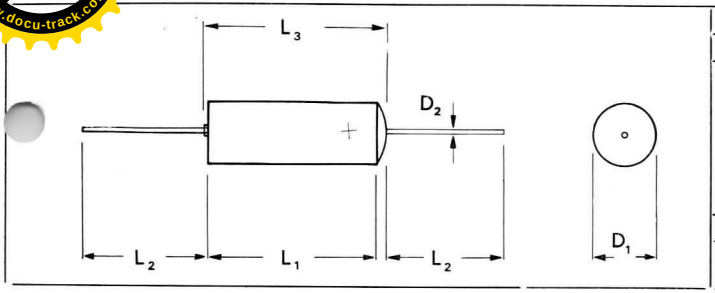
RATED TEMPERATURE RANGE
$-$40°C to +85°C

This new series of axial capacitors offers a wide range of capacitance values in the E12 series. Nearly four decades of capacitance values are covered by five case sizes, the four largest of which offer approximately twice the CV of the comparable case sizes in the standard glass-to-metal sealed TAA range (previously coded 472-400 and 472-420 etc.). The TAR range has the high performance and reliability associated with ITT tantalum capacitors together with an encapsulation that provides a 21 day humidity rating and a high resistance to damage from mechanical vibration and shock. The capacitors are encapsulated in a metal case with a resin end seal. The metal case is supplied either uninsulated or insulated.

ITT Components Group Europe
Standard Telephones and Cables Limited
Capacitor Product Division, Brixham Road, Paignton, Devon
Telephone : Paignton 50762 (STD Code 0803) Telex 42951

ITT
COMPONENTS

Capacitance µF	Working Voltage D.C. 6	10	15	20	35
0,10					1
0,12					1
0,15					1
0,18					1
0,22					1
0,27					1
0,33					1
0,39					1
0,47					1
0,56					1
0,68					1
0,82					1
1,0					1
1,2					1
1,5					1
1,8					2
2,2				1	2
2,7				1	3
3,3				1	3
3,9				2	3
4,7			1	2	3
5,6			2		3
6,8		1			3
8,2		2			3
10	1				3
12	1				3
15	2			3	4
18				3	4
22				3	4
27				3	4
33			3		4
39		3			4
47		3			4
56	3				4
68	3			4	
82	3			4	
100				4	
120			4		
150			4	5	
180		4		5	
220		4		5	
270	4		5		
330	4	5			
390	4	5			
470	5				
560	5				
680	5				
	Surge Voltage D.C. 8	13	20	26	46



FIXED CAPACITO
TANTALUM ELECTROLYTIC
Solid Electrolyte :
Porous Anode :
Polar :
Resin Filled Cylindrical
Metal Case :
Insulated and
Uninsulated Case :
Axial Terminations
General Application

Case Size	L_1 Nom. mm ±0,79	L_3 Max. mm	D_1 Nom. mm ±0,38	D_2 Max. mm	Capacitance Range and Rated Voltage Range	Typical Weight g
1	7,06	9,0	2,57	0,56	12μF 6V to 0,1μF 35V	0,32
2	6,35	8,2	3,18	0,56	15μF 6V to 1,8μF 35V	0,44
3	11,13	13,0	4,45	0,56	82μF 6V to 2,7μF 35V	1,2
4	16,51	18,3	7,09	0,69	390μF 6V to 15μF 35V	4,0
5	19,05	20,9	8,66	0,69	680μF 6V to 150μF 20V	6,8

NOTE 1 Length of terminations (L_2) 32mm minimum.

NOTE 2 Marking for polarity shall be indicated, as shown, near the positive terminal.

NOTE 3 Basic case dimensions for the insulated style shall be the same as for the uninsulated style.

NOTE 4 The case insulation shall extend beyond the ends of the capacitor body by the amounts shown below and shall lap over the ends of the body.

Case Size	Overlap each end of body	
	Min. mm	Max. mm
1 & 2	0,4	1,1
3 4 & 5	0,4	1,5

NOTE 5 The increase in maximum diameter for insulated types shall not exceed 0,25mm.

NOTE 6 The terminal wires must not be bent closer than 2,0mm to the body of the capacitor.

NOTE 7 The complete capacitance/rated voltage range is given in Table 1.

NOTE 8 The tolerance on the wire diameter is +10% −0,05mm.

MANUFACTURER'S CODES

Style reference TAR followed by the capacitance, rated voltage and tolerance. EXAMPLE : TAR 33μF/35V ±20% insulated case.

Note.—The unsleeved style is standard. If an insulated case is required it must be specified.

TINGS (including limiting conditions of use) and characteristics (reference BS 9070)

Reference temperature 20°C unless otherwise stated.

Capacitance range	0,1μF to 680μF (E 12 range of BS 2488 IEC 68)
Standard selection tolerance	±20% (±10% available on request)
Climatic category	40/85/21
Rated temperature range	−40°C to +85°C
Power factor at 120 Hz	≤150μF Tan delta 0,06 max. >150μF≥330μF Tan delta 0,10 max. >330μF Tan delta 0,20 max.
Maximum leakage current after 3 minutes at rated voltage	0,02μA/μFV or 1,0μA whichever is the greater

Working Voltage	6	10	15	20	35	V d.c.
Surge Voltage	8	13	20	26	46	V d.c.

Maximum reverse voltage	0,5 volts
Vibration severity	5 to 5000 Hz 0,75mm or 98 m/s²
Acceleration	98lm/s²
Low air pressure	200 N/m² (mean altitude 130 000ft)
Robustness of terminations	Tensile 1kg Bending ½kg 2 bends through 90°
Solderability	Solder globule method 2 s without ageing 3 s with ageing
Insulation of sleeve	>1000 MΩ at 500V d.c.
Breakdown voltage of sleeve	>2000V d.c.
Ripple voltage ratings	See Figs. 1 to 4

NOTE 1 The above curves are based on an ambient temperature of 20°C. For higher temperatures derate the 20°C figures as follows:—
at 50°C derate to 70%
at 85°C derate to 50%

NOTE 2 The sum of the peak a.c. voltage and the d.c. voltage must not exceed the d.c. working voltage of the capacitor.

NOTE 3 The sum of the negative peak a.c. voltage and the applied d.c. voltage shall not allow a voltage reversal exceeding 0,5 volt.

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APPLICATION NOTES

These capacitors are suitable for coupling and decoupling and general applications in electronic circuits. The reliability of these capacitors depends on circuit impedance. In very low impedance circuits (i.e. less than 3Ω/volt), such as power supplies, particular care is necessary to ensure that the surge voltage rating is not exceeded. The main mode of failure is high leakage current and short circuit.

Performance figures and data quoted in this document are typical and must be specifically confirmed in writing by Standard Telephones and Cables Limited before they become applicable to any particular tender, order or contract.

RAPHS OF TYPICAL PERFORMANCE

Fig. 1. Ripple voltage characteristics, case sizes 1 and 2

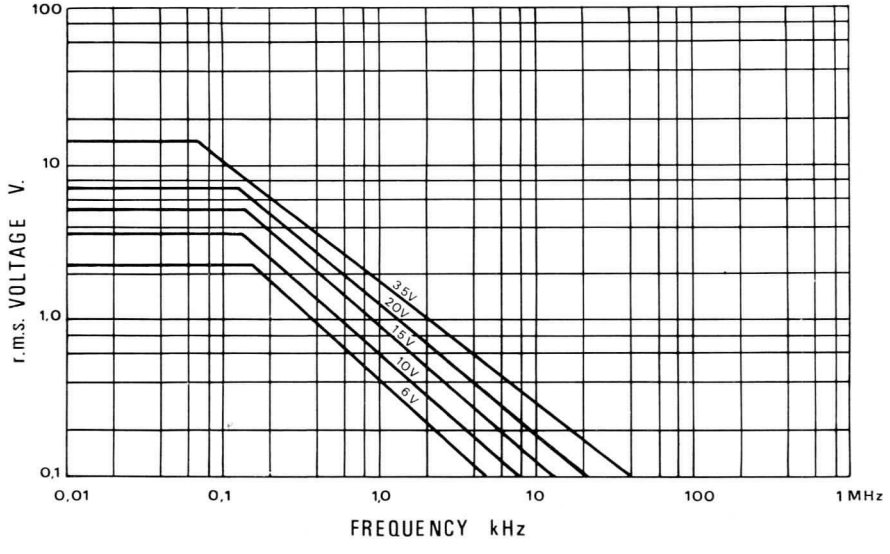
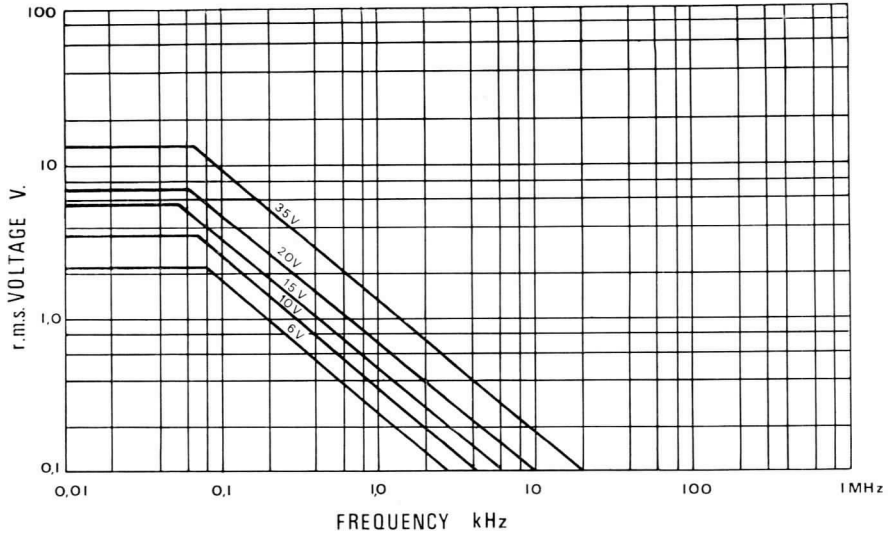


Fig. 2. Ripple voltage characteristics, case size 3



TYPICAL PERFORMANCE—continued

Fig. 3. Ripple voltage characteristics, case size 4

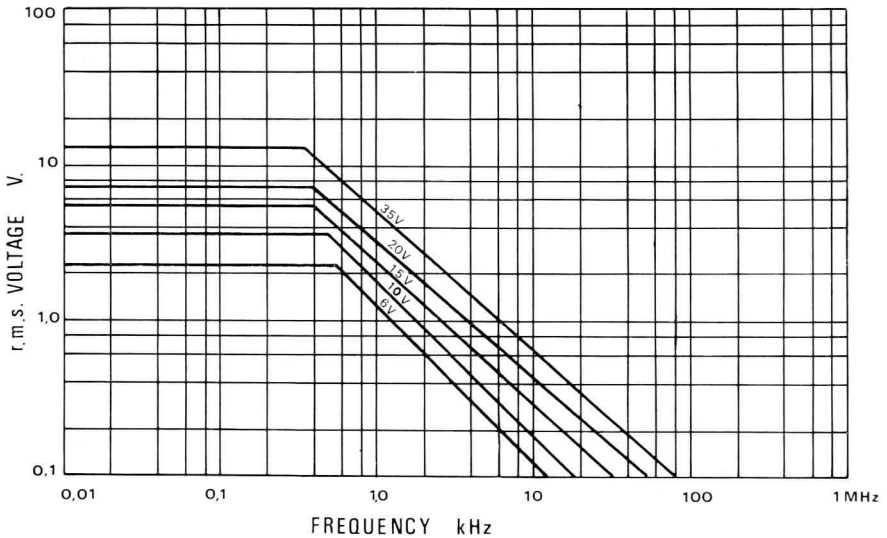
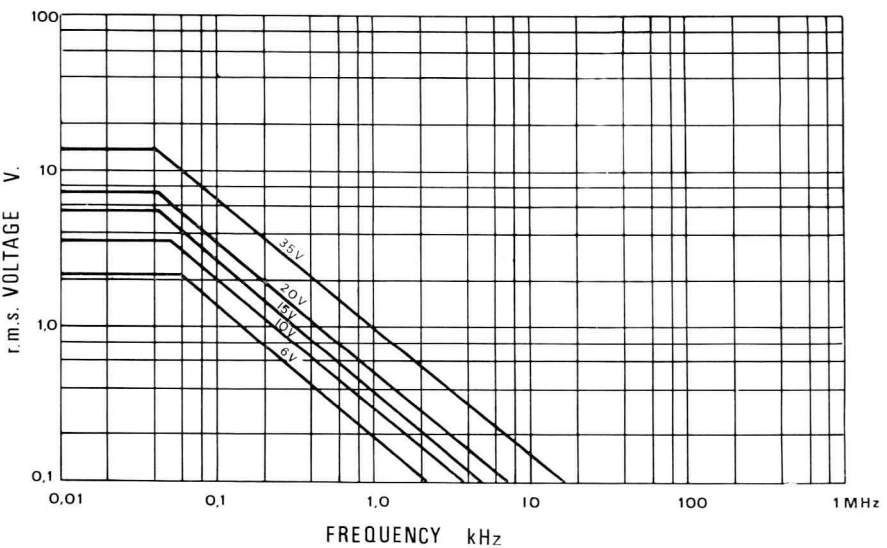


Fig. 4. Ripple voltage characteristics, case size 5



ICAL PERFORMANCE—continued

Fig. 5. Variation of capacitance with temperature

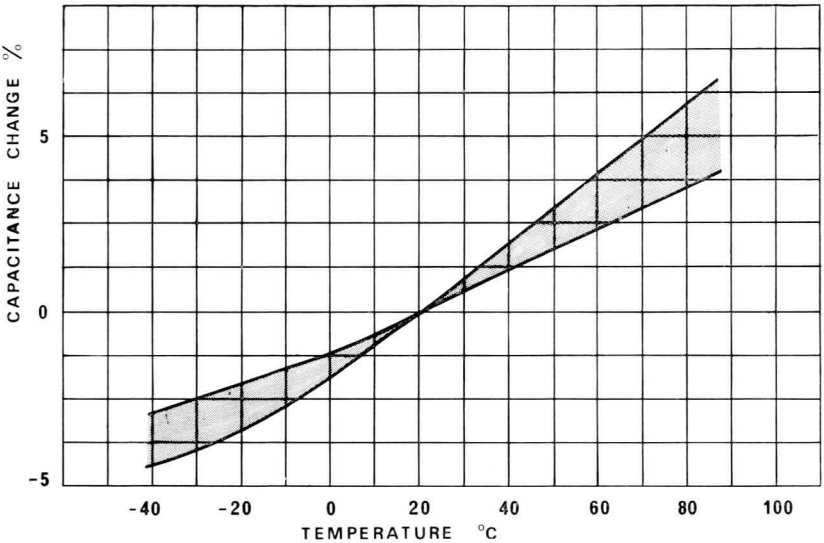
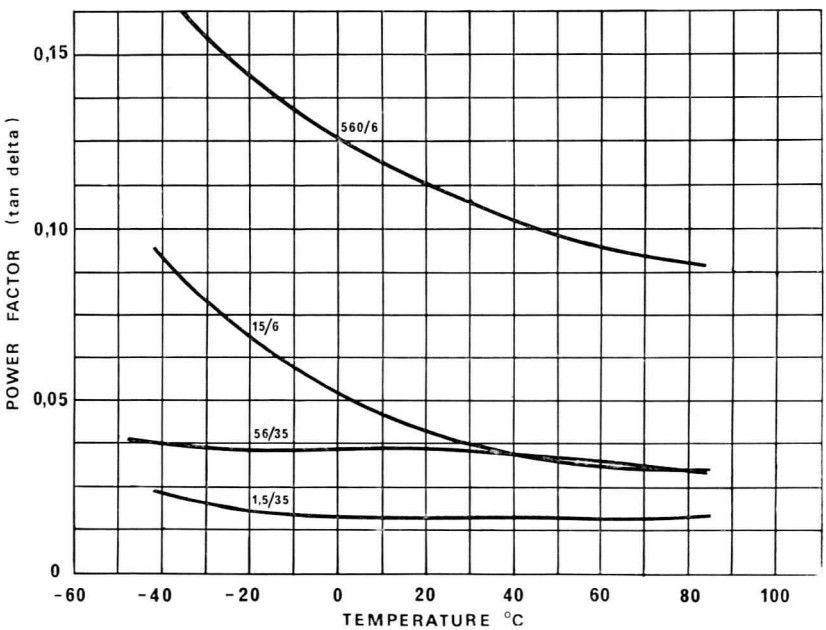
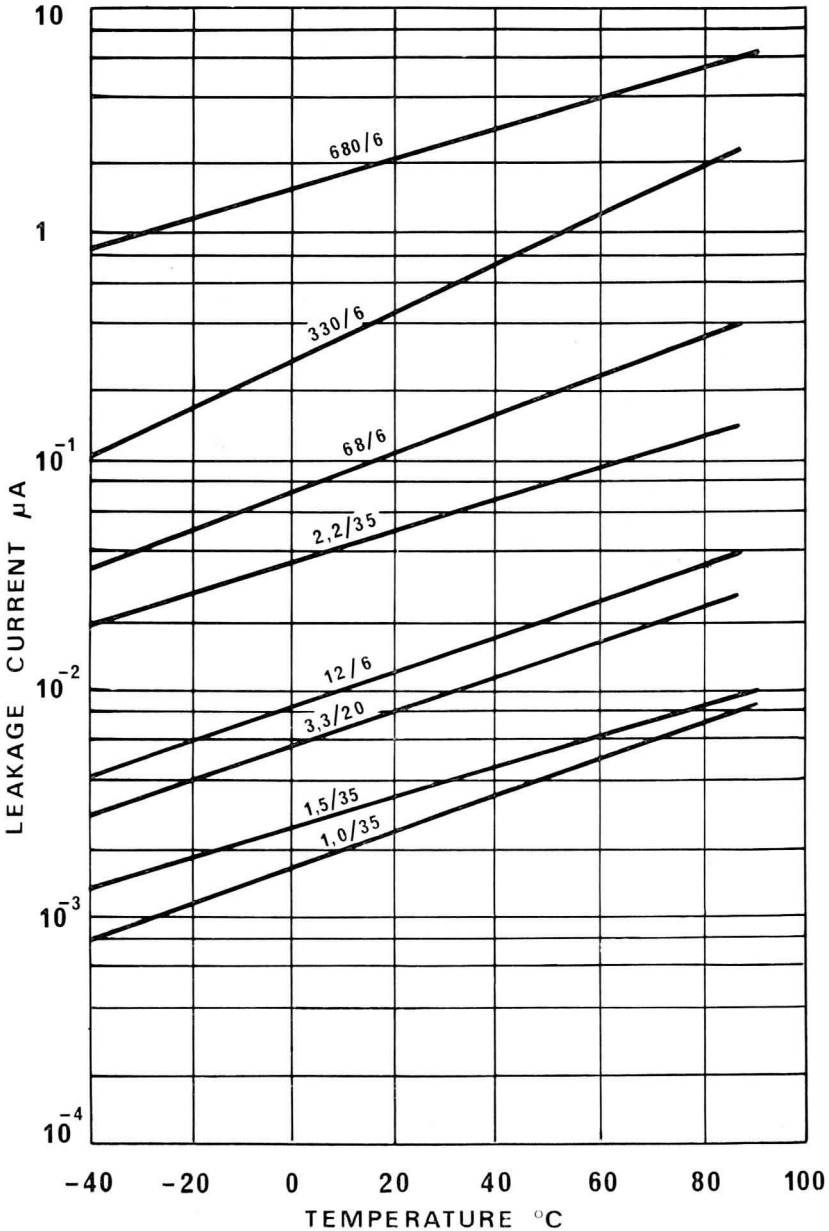


Fig. 6. Variation of power factor with temperature



CAL PERFORMANCE—continued

Fig. 7. Variation of leakage current with temperature



TYPICAL PERFORMANCE—continued

Fig. 8. Variation of impedance with frequency