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EIA SPECIFICATION

EIA-535BAAC-A

Fixed Tantalum Chip Capacitor Style 1 Protected (molded)

EIA-535BAAC-A

(Revision of EIA-535BAAC)

NOVEMBER 1998

ELECTRONIC INDUSTRIES ALLIANCE

Electronic Components, Assemblies, Equipment & Supplies Association



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(From Standards Proposal Number 3939, formulated under the cognizance of the P-2.5 Committee on Electrolytic Dielectric Capacitors.)

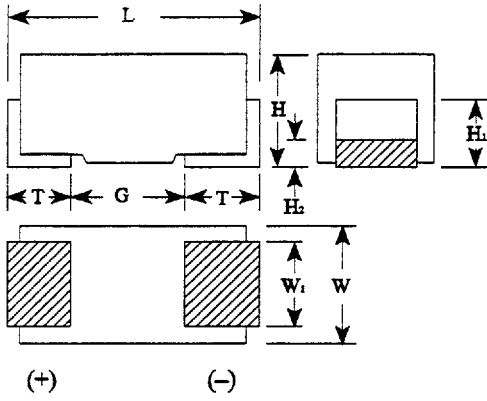
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Electronic components of assessed quality in accordance with: EIA-5350000 QC300000 (IEC 384-1)	QC300801/US0001
Outline drawing: (third angle projection)  (Other shapes permitted within the dimensions given) NOTES 1 Dimensions - see table 1. 2 Recommended land patterns -- see 1.1 3 Marking - see 5 4 Solderability inspection-shaded areas, excluding edges.	Fixed tantalum chip capacitor Style 1 protected (molded) Polar, nonhermetically sealed Chip capacitor with solid Electrolyte and porous tantalum anode Electrical circuit (-) (+) Assessment level: E Suitable for surface mounting
Quick reference data: Rated capacitance range- 0.1 μF to 470 μF Capacitance tolerance - $\pm 10\%$, $\pm 20\%$ Rated voltage range - 4 volts DC - 50 volts DC Climatic category - 55/125/56 Performance level - long life	

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Preface

This document was developed under the cognizance of the P-2.5 Subcommittee on Electrolytic Dielectric Capacitors.

1 Recommended methods of mounting

These components can be attached to glass epoxy or alumina substrates by conventional techniques, such as vapor-phase, infrared (IR) or thermal conduction reflow, wave soldering and hot plate/belt methods. In general, attachment with a soldering iron is not recommended due to the difficulty of consistently controlling temperature and time at temperature.

Recommended nominal temperature and duration: 230 °C for 30 seconds.

Maximum temperature and duration: 260 °C for 10 seconds.

1.1 Suggested land patterns

The land pattern designs included in IPC-SM-782, *Surface Mount Design and Land Pattern Standard*, are recommended as starting points for users, and may be optimized to suit their own unique process considerations and requirements.

2 Dimensions

Table 1—Dimensions of molded tantalum chip capacitors
dimensions in mm

Case size	L	W	H	T	G (min.)	W ₁	H ₁ (min.)	H ₂ (min.)
2012	2.0 ± 0.2	1.3 ± 0.2	1.2 max.	0.5 ± 0.3	0.3	1.2 ± 0.1	0.3	0.2
3216L	3.2 ± 0.2	1.6 ± 0.2	1.2 max.	0.8 ± 0.3	0.8	1.2 ± 0.1	0.3	0.2
3216	3.2 ± 0.2	1.6 ± 0.2	1.6 ± 0.2	0.8 ± 0.3	0.8	1.2 ± 0.1	0.7	0.4
3528L	3.5 ± 0.2	2.8 ± 0.2	1.2 max.	0.8 ± 0.3	1.1	2.2 ± 0.1	0.3	0.2
3528	3.5 ± 0.2	2.8 ± 0.2	1.9 ± 0.2	0.8 ± 0.3	1.1	2.2 ± 0.1	0.7	0.4
6032L	6.0 ± 0.3	3.2 ± 0.3	1.5 max.	1.3 ± 0.3	2.5	2.2 ± 0.1	0.5	0.2
6032	6.0 ± 0.3	3.2 ± 0.3	2.5 ± 0.3	1.3 ± 0.3	2.5	2.2 ± 0.1	1.0	0.5
7343L	7.3 ± 0.3	4.3 ± 0.3	2.0 max.	1.3 ± 0.3	3.8	2.4 ± 0.1	1.0	0.5
7343	7.3 ± 0.3	4.3 ± 0.3	2.8 ± 0.3	1.3 ± 0.3	3.8	2.4 ± 0.1	1.0	0.5
7343H	7.3 ± 0.3	4.3 ± 0.3	4.0 ± 0.3	1.3 ± 0.3	3.8	2.4 ± 0.1	1.0	0.5

NOTES

- "L" suffix in case size indicates low profile; "H" suffix in case size indicates high profile
- W₁ = termination widths; H₁ = termination heights; H₂ = solderability inspection heights
- A notch in the anode and/or cathode side metallization is at the option of the component manufacturer.
- The termination width metalization applies only to the portion of the termination where contact is made to the PWB. The terminations may neck down on the height dimension to the termination width (W₁) at the mounting level on the PWB.

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Molded tantalum chip capacitor

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3 Ratings and characteristics

Capacitance (C_R); see NOTE 2	0.1 μ F to 470 μ F
Standard range	Table 2
Extended range and high profile	Table 3
Low profile	Table 4
Tolerance on rated capacitance	$\pm 10\%$ and $\pm 20\%$
Rated voltage (U_R); see NOTE 1	4 V - 50 V (See tables 2 to 4.)
Category voltage (U_C)	See tables 2 to 4.
Climatic category	-55/125/56
Rated temperature	85 °C
Variation of capacitance with temperature	See table 5a-h.
Leakage current; see NOTE 3	See table 5a-h.
Tangent of loss angle (dissipation factor); see NOTE 2	4% to 8% ; see table 5a-h
Insulation resistance	Not applicable
Equivalent series resistance (ESR); see NOTE 2	0.5 ohm to 25.0 ohms @ 100 kHz; see table 5a-h
Ripple current ratings	See table 5a-h
Power dissipation	See table 7
Impedance	Not applicable
Surge voltage	See table 8
Terminations	Solderable

NOTES

- 1 Rated voltages (U_R) are minimum. Capacitors with DC voltage ratings (U_R) higher than that ordered (within the same case size) may be supplied at manufacturer's option. Voltage substitutions will be marked with the higher DC voltage rating (U_R).
- 2 Test conditions: Capacitance and tangent of loss angle shall be measured at 120 Hz; equivalent series resistance shall be measured at 100 kHz. Unless otherwise specified, all electrical measurements shall be made at or referred to 25 °C $\pm$ 5 °C with a relative humidity of 45 % - 75% at atmospheric pressure [101.325 kPa (760 mmHg)].