TWA SERIES

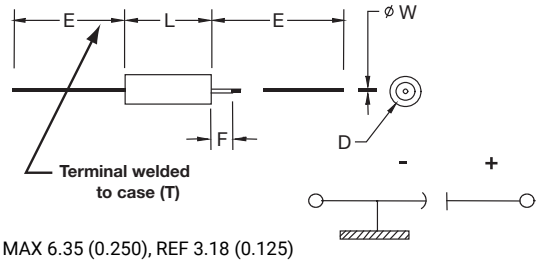
MIL-PRF-39006/33 Series – Military Conventional Wet Tantalum



GENERAL DESCRIPTION

This data sheet contains the MIL-PRF-39006 ratings for which KYOCERA AVX is a qualified approved supplier. This will be continually updated as the qualification expands.
This design is an axial leaded tubular case. It includes a welded tantalum can and header assembly that provides a hermetic seal to withstand harsh environments. The 1000 hour failure rates of 1%, 0.1% and 0.01% correspond to "M", "P", and "R" respectively. For details on testing conditions please refer to MIL-PRF-39006.

OUTLINE DIMENSIONS



F MAX 6.35 (0.250), REF 3.18 (0.125)
W 0.64 + 0.05
(0.025 + 0.002)
T 2.380 (0.094)

CURRENTLY QUALIFIED M39006 RATINGS INCLUDE T3-T4 CASE SIZE:

	M Level Reliability Dashes	P Level Reliability Dashes
M39006/33	25V-75V	25V-75V

CASE DIMENSIONS: Millimeters (inches)

DLA Case Size	Case Size	L +0.79 (0.031) -0.41 (0.016)	D Basic Case ±0.41 (0.016)	D Insulated Case Max	E ±6.35 (0.250)
T3	D	19.46 (0.766)	9.52 (0.375)	10.31 (0.406)	57.15 (2.250)
T4	E	26.97 (1.062)	9.52 (0.375)	10.31 (0.406)	57.15 (2.250)

VOLTAGE RATINGS (Operating Temperature -55°C to 125°C)

Voltage (DC)												
Rated Voltage: (V_r)	85°C	6	8	10	15	25	30	50	60	75	100	125
Derated Voltage: (V_c)	125°C	4	5	6	10	15	20	30	40	50	65	85
Surge Voltage: (V_s)	85°C	6.9	9.2	11.5	17.3	28.8	34.5	57.5	69	86.3	115	144

HOW TO ORDER MILITARY M39006 PART NUMBER:

M39006 /33 –0050

Type / Military Designator
Specification Sheet Number
Dash Number

Not RoHS Compliant

The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order.

RIPPLE CURRENT MULTIPLIERS vs. Frequency, temperature and applied voltage[1/ 2/ 3/]

Frequency of Applied Ripple Current		120Hz				800Hz				1kHz			
Ambient Still Air Temperature (°C)		≤55	85	105	125	≤55	85	105	125	≤55	85	105	125
% of 85°C Rated Peak Voltage	100%	0.60	0.39	–	–	0.71	0.43	–	–	0.72	0.45	–	–
	90%	0.60	0.46	–	–	0.71	0.55	–	_	0.72	0.55	–	–
	80%	0.60	0.52	0.35	–	0.71	0.62	0.42	–	0.72	0.62	0.42	–
	70%	0.60	0.58	0.44	–	0.71	0.69	0.52	–	0.72	0.70	0.52	–
	66-2/3%	0.60	0.60	0.46	0.27	0.71	0.71	0.55	0.32	0.72	0.72	0.55	0.32

Frequency of Applied Ripple Current		10kHz				40kHz				100kHz			
Ambient Still Air Temperature (°C)		≤55	85	105	125	≤55	85	105	125	≤55	85	105	125
% of 85°C Rated Peak Voltage	100%	0.88	0.55	–	–	1.00	0.63	–	–	1.10	0.69	–	–
	90%	0.88	0.67	–	–	1.00	0.77	–	_	1.10	0.85	–	–
	80%	0.88	0.76	0.52	–	1.00	0.87	0.59	–	1.10	0.96	0.65	–
	70%	0.88	0.85	0.64	–	1.00	0.97	0.73	–	1.10	1.07	0.80	–
	66-2/3%	0.88	0.88	0.68	0.40	1.00	1.00	0.77	0.45	1.10	1.10	0.85	0.50

1/ At 125°C the rated voltage of the capacitors decreases to 66 2/3 of the 85°C rated voltage.
2/ The peak of the applied ac ripple voltage plus the applied dc voltage must not exceed the dc voltage rating of the capacitors.
3/ The ripple current listed in the parametric tables represents a rating calculated by using a maximum internal temperature rise (ΔT) at 50°C at 40 kHz at 85°C ambient temperature, with a maximum peak rated voltage of 66.67 percent of the 85°C peak voltage rating.

CAPACITANCE AND RATED VOLTAGE, V_R (VOLTAGE CODE) RANGE (LETTER DENOTES CASE SIZE)

Capacitance		Rated Voltage DC (V_R) to 85°C				
µF	Code	25V	30V	50V	60V	75V
470	477					E
560	567				E	
680	687			E		
750	757					
1000	108		D			
1200	128	D				
1500	158		E			
1800	188	E				

M39006 /33 RATINGS AND DASH NUMBER REFERENCE

M39006/33 Dashes		Tolerance (%)	Cap (µF) 25°C at 120Hz	DC Rated Voltage (V) at 85°C	DC Leakage max (µA)		DF max (%)	ESR max (Ohms) at 120Hz	Impedance max (Ohms) -55°C at 120Hz	Maximum Capacitance Change (%)			AC Ripple (mA rms) 85°C at 40kHz	Case Size
M Level	P Level				+25°C	+85°C & +125°C				-55°C	+85°C	+125°C		
-0007	-1007	20	1200	25	5	20	70.6	0.65	7	-70	12	18	2600	T3
-0008	-1008	10												
-0009	-1009	20	1800	25	6	25	81.4	0.50	7	-75	12	20	3100	T4
-0010	-1010	10												
-0017	-1017	20	1000	30	7	25	63.3	0.70	7	-70	10	18	2500	T3
-0018	-1018	10												
-0019	-1019	20	1500	30	12	35	81.4	0.60	6	-72	10	20	3000	T4
-0020	-1020	10												
-0029	-1029	20	680	50	5	40	43.1	0.70	10	-58	10	20	2750	T4
-0030	-1030	10												
-0039	-1039	20	560	60	5	40	40.5	0.80	10	-58	8	15	2750	T4
-0040	-1040	10												
-0049	-1049	20	470	75	5	50	38.3	0.90	12	-55	8	12	2750	T4
-0050	-1050	10												

All technical data relates to an ambient temperature of +25°C. Capacitance and DF are measured at 120Hz, 0.5RMS with DC bias of 2.2V.
DCL is measured at rated voltage after 5 minutes.