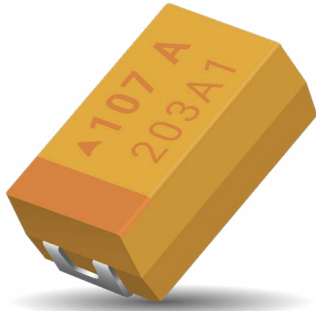


TBJ SERIES

COTS-Plus



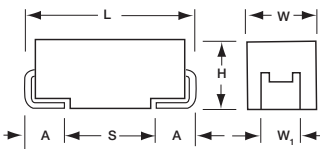
The TBJ COTS-Plus series, based on the CWR11 form factor, is a high reliability series encompassing the current range of EIA Low ESR ratings. These ratings are available with Weibull grading (B and C), surge current testing (A, B, C) per MIL-PRF-55365 Rev. G, and optional Group A from MIL-PRF-55365.

For Space Level applications, SRC9000 qualification is recommended. Please refer to the TBJ COTS-Plus SRC9000 Datasheet for part number availability.

There are five termination finishes available: solder plated, fused solder plated, hot solder dipped, 100% Tin and gold plated (these correspond to "H", "K", "C", "7" and "B" termination, respectively). The molding compound has been selected to meet the requirements of UL94V-0 (Flame Retardancy) and outgassing requirements of ASTM E-595.

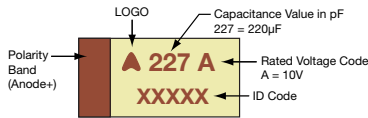
For moisture sensitivity levels please refer to the High Reliability Tantalum MSL section located in the back of the High Reliability Tantalum Catalog.

CASE DIMENSIONS: millimeters (inches)



MARKING

A, B, C, D, E, V CASE



Code	EIA Code	EIA Metric	L±0.20 (0.008)	W+0.20(0.008) -0.10 (0.004)	H+0.20 (0.008) -0.10 (0.004)	W,±0.20 (0.008)	A+0.30(0.012) -0.20(0.008)	S Min.
A	1206	3216-18	3.20 (0.126)	1.60 (0.063)	1.60 (0.063)	1.20 (0.047)	0.80 (0.031)	1.10 (0.043)
B	1210	3528-21	3.50 (0.138)	2.80 (0.110)	1.90 (0.075)	2.20 (0.087)	0.80 (0.031)	1.40 (0.055)
C	2312	6032-28	6.00 (0.236)	3.20 (0.126)	2.60 (0.102)	2.20 (0.087)	1.30 (0.051)	2.90 (0.114)
D	2917	7343-31	7.30 (0.287)	4.30 (0.169)	2.90 (0.114)	2.40 (0.094)	1.30 (0.051)	4.40 (0.173)
E	2917	7343-43	7.30 (0.287)	4.30 (0.169)	4.10 (0.162)	2.40 (0.094)	1.30 (0.051)	4.40 (0.173)
V	2924	7361-38	7.30 (0.287)	6.10 (0.240)	3.55 (0.140)	3.10 (0.122)	1.30 (0.051)	4.40 (0.173)

W₁ dimension applies to the termination width for A dimensional area only.

HOW TO ORDER

PART NUMBER:

TBJ	D	227	*	035	C	B	S	Z	0	0	00
Type	Case Size	Capacitance Code	Capacitance Tolerance	Voltage Code	ESR	Packaging	Inspection Level	Reliability Grade	Qualification Level	Termination Finish	Surge Test Option
		pF code: 1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow)	K = ±10% M = ±20%	002 = 2Vdc 004 = 4Vdc 006 = 6Vdc 010 = 10Vdc 016 = 16Vdc 020 = 20Vdc 025 = 25Vdc 035 = 35Vdc 050 = 50Vdc	C = Std ESR L = Low ESR	B = Bulk R = 7" T&R S = 13" T&R W = Waffle	S = Std. Conformance L = Group A	Weibull: B = 0.1%/1000 hrs. 90% conf. C = 0.01%/1000 hrs. 90% conf. Z = Non-ER	0 = N/A	H = Solder Plated 0 = Fused Solder Plated 8 = Hot Solder Dipped 9 = Gold Plated 7 = Matte Sn	00 = None 23 = 10 Cycles, +25°C 24 = 10 Cycles, -55°C & +85°C 45 = 10 cycles, -55°C & +85°C before Weibull

*For Gold Plated Termination Finish, contact the factory for availability.



LEAD-FREE
LEAD-FREE COMPATIBLE
COMPONENT



RoHS
COMPLIANT

For RoHS compliant products,
please select correct termination style.

TECHNICAL SPECIFICATIONS

Technical Data:	Unless otherwise specified, all technical data relate to an ambient temperature of 25°C										
Capacitance Range:	0.10 µF to 1500 µF										
Capacitance Tolerance:	±10%; ±20%										
Rated Voltage (V _R)	≤ 85°C:	2	4	6	10	16	20	25	35	50	
Category Voltage (V _C)	≤125°C:	1.4	2.7	4	7	10	13	17	23	33	
Surge Voltage (V _S)	≤ 85°C:	2.6	5.2	8	13	20	26	32	46	65	
Surge Voltage (V _S)	≤125°C:	1.7	3.4	5	8	13	16	20	28	40	
Temperature Range:	-55°C to +125°C										

TBJ SERIES

COTS-Plus



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

Capacitance		Rated Voltage DC (V _R) at 85°C									
μF	Code	2V (e)	4V (G)	6V (J)	10V (A)	15V (H)	16V (C)	20V (D)	25V (E)	35V (V)	50V (T)
0.10	104									A(24000)	A(22000)
0.15	154									A(21000)	A(9000, 21000) B(17000)
0.22	224									A(6000, 18000)	A(7000, 18000) B(14000)
0.33	334									A(6000, 15000)	B(12000)
0.47	474							A(14000)	A(7000, 14000)	A(6000, 12000) B(4000, 10000)	C(8000)
0.68	684					A(12000)	A(12000)	A(12000)	A(6000, 10000) B(7500)	A(6000, 8000) B(8000)	A(7900) C(7000)
1.0	105				A(10000)	A(10000)	A(10000)	A(3000, 10000)	A(8000) B(6500)	A(3000, 7500) B(2000, 6500)	C(2500, 6000)
1.5	155			A(8000)	A(8000)	A(8000)		A(6500) B(6000)	A(3000, 7500) B(1800, 6500)	A(7500) B(2500, 5200) C(4500)	C(1500, 5000) D(4000)
2.2	225		A(8000)	A(8000)	A(1800, 8000)	B(5500)	A(1800, 5500) B(5000)	A(3000, 5300) B(5000)	A(7000) B(900, 4500) C(3500)	A(1500, 4500) B(2000, 4200) C(1000, 3500)	D(1200, 2500)
3.3	335			A(8000)	B(5500)	B(5000)	A(3500, 5000) B(4500)	A(2500) B(1300, 4000)	A(1000, 1500) B(750, 3500) C(3500)	B(1000, 3500) C(700, 2500)	D(800, 2000)
4.7	475		A(8000)	B(5500)	A(1400, 5000) B(4500)	B(4000)	A(2000, 4000) B(800, 3100)	A(1800, 4000) B(750, 3000) C(3000)	A(2800) B(1500, 2800) C(2500)	B(700, 3100) C(600, 2200) D(500, 1500)	D(300, 1500)
6.8	685		B(5500)	A(1800, 5000) B(4500)	A(1800, 4000) B(3500)		A(1500, 2500) B(60, 2500)	A(1000) B(600, 2500) C(700, 2400)	B(700, 2800) C(500, 2000) D(1400)	C(350, 1800) D(500, 1300)	D(500, 1000)
10	106		B(4000)	A(1500, 4000) B(3500)	A(1800, 3000) B(2500)	C(2500)	A(1000, 3000) B(500, 2800) C(500, 2500)	B(1000, 2100) C(500, 1900)	C(500, 1800) D(1200)	C(600, 1600) D(300, 1000) E(200, 250)	E(400, 500) V(650)
15	156		B(3500)	A(1500, 3500) B(3500) C(3000)	A(1000, 3200) B(450, 2800) C(2500)		B(800, 2500) C(1800)	B(500, 2000) C(400, 1700) D(1100)	C(220, 300) D(300, 1000)	C(350, 1400) D(300, 900)	D(600) E(250, 600)
22	226			A(500, 3000) B(375, 2500) C(2200)	B(700, 2400) C(300, 1000)	D(1100)	B(600, 2300) C(375, 1600) D(1100)	B(400, 600) C(150, 1600) D(200, 900)	C(275, 1400) D(200, 900)	D(400, 900) E(300, 900)	V(390, 600)
33	336		A(3000) C(2200)	A(600) B(600, 2200)	A(700, 1700) B(250, 1800) C(150, 1600) D(1100)	D(900)	B(350) C(300, 1500) D(200, 900)	C(300, 1500) D(100, 900)	D(100, 900) E(300, 900)	D(300, 900) E(100, 250) V(200)	
47	476		A(500)	A(800) B(250, 350) C(300, 1600) D(1100)	B(250, 350) C(200, 1200) D(100, 900)		C(350, 1500) D(150, 900)	D(100, 200) E(70, 250)	D(250, 900) E(80, 100)	E(200, 250) V(200, 400)	
68	686		D(1100)	B(250, 1800) C(150, 1600) D(900)	B(600) C(80, 1200) D(100, 900)		C(125, 200) D(70, 900)	D(70, 900) E(150, 900)	E(125, 200) V(95)	V(150, 200)	
100	107		A(1400) B(200, 1600)	B(250, 400) C(150, 900) D(900)	B(400) C(200, 1200) D(100, 900) E(125)		D(125, 900) E(100, 900)	D(85, 100) E(100, 150) V(85, 200)	V(100)		
150	157	B(150)	B(250) C(70, 80)	C(50, 90) D(50, 900)	D(150, 900) E(100)		D(150, 900) E(100, 300) V(45, 75)	E(300) V(80)			
220	227	B(150, 200) D(45)	D(40, 900)	C(70, 1200) D(100, 900) E(100)	D(150, 900) E(100, 900)		E(100, 150) V(75, 150)				
330	337		C(100) D(35, 45)	D(45, 50) E(100, 900) V(100)	D(150, 900) E(60, 900) V(60, 100)						
470	477	D(35)	D(45, 100) E(35)	D(45, 60) E(50, 900) V(55, 100)	E(50, 900) V(60, 100)						
680	687	D(35, 50) E(35, 50)	D(45, 60) E(40, 60)	E(45, 60) V(35, 40)							
1000	108	E(30, 40)	E(60) V(25, 35)	V(40, 50)							
1500	158	D(100) E(50) V(30, 40)	E(50, 75) V(50, 75)								

Available Ratings: ESR limits quoted in brackets (mOhms)

Note for designers - for the highlighted ratings, higher voltage options are now available in the same case size and are recommended for new designs.

Notes: Voltage ratings are minimum values. KYOCERA AVX reserves the right to supply higher ratings in the same case size, to the same reliability standards.

TBJ SERIES

COTS-Plus



RATING & PART NUMBER REFERENCE		Parametric Specifications by Rating per MIL-PRF-55365/4									Typical RMS Ripple Data by Rating						
		Cap @ 120Hz	DC Rated Voltage	ESR @ 100kHz	DCL max			DF Max			Power Dissipation	25°C Ripple Current	85°C Ripple Current	125°C Ripple Current	25°C Ripple Voltage	85°C Ripple Voltage	125°C Ripple Voltage
					+25°C	+85°C	+125°C	+25°C	+(85/125) °C	-55°C							
COTS-Plus P/N	Case	µF @ 25°C	V @ +85°C	Ohms @ 25°C	(µA)	(µA)	(µA)	(%)	(%)	(%)	W	A (100kHz)	A (100kHz)	A (100kHz)	V (100kHz)	V (100kHz)	V (100kHz)
TBJB157*002L□#@0°++	B	150	2	0.15	3	30	60	10	12	14	0.085	0.753	0.677	0.301	0.113	0.102	0.045
TBJB227*002C□#@0°++	B	220	2	0.2	4.4	44	88	16	19	21	0.085	0.652	0.587	0.261	0.130	0.117	0.052
TBJB227*002L□#@0°++	B	220	2	0.15	4.4	44	88	16	19	21	0.085	0.753	0.677	0.301	0.113	0.102	0.045
TBJD227*002L□#@0°++	D	220	2	0.045	4.4	44	88	8	10	12	0.150	1.826	1.643	0.730	0.082	0.074	0.033
TBJD477*002L□#@0°++	D	470	2	0.035	9.4	94	188	8	10	12	0.150	2.070	1.863	0.828	0.072	0.065	0.029
TBJD687*002C□#@0°++	D	680	2	0.05	13.6	136	272	16	19	21	0.150	1.732	1.559	0.693	0.087	0.078	0.035
TBJD687*002L□#@0°++	D	680	2	0.035	13.6	136	272	16	19	21	0.150	2.070	1.863	0.828	0.072	0.065	0.029
TBJE687*002C□#@0°++	E	680	2	0.05	13.6	136	272	10	12	14	0.165	1.817	1.635	0.727	0.091	0.082	0.036
TBJE687*002L□#@0°++	E	680	2	0.035	13.6	136	272	10	12	14	0.165	2.171	1.954	0.868	0.076	0.068	0.030
TBJE108*002C□#@0°++	E	1000	2	0.04	20	200	400	14	17	20	0.165	2.031	1.828	0.812	0.081	0.073	0.032
TBJE108*002L□#@0°++	E	1000	2	0.03	20	200	400	14	17	20	0.165	2.345	2.111	0.938	0.070	0.063	0.028
TBJJ158*002L□#@0°++	D	1500	2	0.1	30	300	600	60	90	90	0.150	1.225	1.102	0.490	0.122	0.110	0.049
TBJE158*002L□#@0°++	E	1500	2	0.05	30	300	600	20	24	28	0.165	1.817	1.635	0.727	0.091	0.082	0.036
TBJV158*002C□#@0°++	V	1500	2	0.04	30	300	600	20	24	28	0.250	2.500	2.250	1.000	0.100	0.090	0.040
TBJV158*002L□#@0°++	V	1500	2	0.03	30	300	600	20	24	28	0.250	2.887	2.598	1.155	0.087	0.078	0.035
TBJA225*004C□#@0°++	A	2.2	4	8	0.088	0.88	1.76	6	9	9	0.075	0.097	0.087	0.039	0.775	0.697	0.310
TBJA475*004C□#@0°++	A	4.7	4	8	0.188	1.88	3.76	6	9	9	0.075	0.097	0.087	0.039	0.775	0.697	0.310
TBJB685*004C□#@0°++	B	6.8	4	5.5	0.272	2.72	5.44	6	9	9	0.085	0.124	0.112	0.050	0.684	0.615	0.273
TBJB106*004C□#@0°++	B	10	4	4	0.4	4	8	6	9	9	0.085	0.146	0.131	0.058	0.583	0.525	0.233
TBJB156*004C□#@0°++	B	15	4	3.5	0.6	6	12	6	9	9	0.085	0.156	0.140	0.062	0.545	0.491	0.218
TBJA336*004C□#@0°++	A	33	4	3	1.32	13.2	26.4	6	9	9	0.075	0.158	0.142	0.063	0.474	0.427	0.190
TBJC336*004C□#@0°++	C	33	4	2.2	1.32	13.2	26.4	6	9	9	0.110	0.224	0.201	0.089	0.492	0.443	0.197
TBJA476*004L□#@0°++	A	47	4	0.5	1.88	18.8	37.6	8	10	12	0.075	0.387	0.349	0.155	0.194	0.174	0.077
TBJC686*004C□#@0°++	C	68	4	1.6	2.72	27.2	54.4	6	9	10	0.110	0.262	0.236	0.105	0.420	0.378	0.168
TBJD686*004C□#@0°++	D	68	4	1.1	2.72	27.2	54.4	6	9	9	0.150	0.369	0.332	0.148	0.406	0.366	0.162
TBJA107*004C□#@0°++	A	100	4	1.4	4	40	80	30	36	42	0.075	0.231	0.208	0.093	0.324	0.292	0.130
TBJB107*004C□#@0°++	B	100	4	1.6	4	40	80	8	10	12	0.085	0.230	0.207	0.092	0.369	0.332	0.148
TBJB107*004L□#@0°++	B	100	4	0.2	4	40	80	8	10	12	0.085	0.652	0.587	0.261	0.130	0.117	0.052
TBJB157*004L□#@0°++	B	150	4	0.25	6	60	120	10	12	12	0.085	0.583	0.525	0.233	0.146	0.131	0.058
TBJC157*004C□#@0°++	C	150	4	0.08	6	60	120	6	9	10	0.110	1.173	1.055	0.469	0.094	0.084	0.038
TBJC157*004L□#@0°++	C	150	4	0.07	6	60	120	6	9	10	0.110	1.254	1.128	0.501	0.088	0.079	0.035
TBJD227*004C□#@0°++	D	220	4	0.9	8.8	88	176	8	10	12	0.150	0.408	0.367	0.163	0.367	0.331	0.147
TBJD227*004L□#@0°++	D	220	4	0.04	8.8	88	176	8	10	12	0.150	1.936	1.743	0.775	0.077	0.070	0.031
TBJC337*004L□#@0°++	C	330	4	0.1	13.2	132	264	8	10	12	0.110	1.049	0.944	0.420	0.105	0.094	0.042
TBJD337*004C□#@0°++	D	330	4	0.045	13.2	132	264	8	10	12	0.150	1.826	1.643	0.730	0.082	0.074	0.033
TBJD337*004L□#@0°++	D	330	4	0.035	13.2	132	264	8	10	12	0.150	2.070	1.863	0.828	0.072	0.065	0.029
TBJD477*004C□#@0°++	D	470	4	0.1	18.8	188	376	12	14	16	0.150	1.225	1.102	0.490	0.122	0.110	0.049
TBJD477*004L□#@0°++	D	470	4	0.045	18.8	188	376	12	14	16	0.150	1.826	1.643	0.730	0.082	0.074	0.033
TBJE477*004L□#@0°++	E	470	4	0.035	18.8	188	376	12	14	16	0.165	2.171	1.954	0.868	0.076	0.068	0.030
TBJD687*004C□#@0°++	D	680	4	0.06	27.2	272	544	14	17	20	0.150	1.581	1.423	0.632	0.095	0.085	0.038
TBJD687*004L□#@0°++	D	680	4	0.045	27.2	272	544	14	17	20	0.150	1.826	1.643	0.730	0.082	0.074	0.033
TBJE687*004C□#@0°++	E	680	4	0.06	27.2	272	544	10	12	14	0.165	1.658	1.492	0.663	0.099	0.090	0.040
TBJE687*004L□#@0°++	E	680	4	0.04	27.2	272	544	10	12	14	0.165	2.031	1.828	0.812	0.081	0.073	0.032
TBJE108*004L□#@0°++	E	1000	4	0.06	40	400	800	14	17	20	0.165	1.658	1.492	0.663	0.099	0.090	0.040
TBJV108*004C□#@0°++	V	1000	4	0.035	40	400	800	16	19	21	0.250	2.673	2.405	1.069	0.094	0.084	0.037
TBJV108*004L□#@0°++	V	1000	4	0.025	40	400	800	16	18	20	0.250	3.162	2.846	1.265	0.079	0.071	0.032
TBJE158*004C□#@0°++	E	1500	4	0.075	60	600	1200	30	36	42	0.165	1.483	1.335	0.593	0.111	0.100	0.044
TBJE158*004L□#@0°++	E	1500	4	0.05	60	600	1200	30	36	42	0.165	1.817	1.635	0.727	0.091	0.082	0.036
TBJV158*004C□#@0°++	V	1500	4	0.075	60	600	1200	30	36	42	0.250	1.826	1.643	0.730	0.137	0.123	0.055
TBJV158*004L□#@0°++	V	1500	4	0.05	60	600	1200	30	36	42	0.250	2.236	2.012	0.894	0.112	0.101	0.045

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

NOTE: KYOCERA AVX reserves the right to supply a higher voltage rating or tighter tolerance part in the same case size, to the same reliability standards.

TBJ SERIES

COTS-Plus

RATING & PART NUMBER REFERENCE		Parametric Specifications by Rating per MIL-PRF-55365/4									Typical RMS Ripple Data by Rating						
		Cap @ 120Hz	DC Rated Voltage	ESR @ 100kHz	DCL max			DF Max			Power Dissipation	25°C Ripple Current	85°C Ripple Current	125°C Ripple Current	25°C Ripple Voltage	85°C Ripple Voltage	125°C Ripple Voltage
					+25°C	+85°C	+125°C	+25°C	+(85/125) °C	-55°C							
COTS-Plus P/N	Case	µF 25°C	V +85°C	Ohms +25°C	(µA)	(µA)	(µA)	(%)	(%)	(%)	W	A (100kHz)	A (100kHz)	A (100kHz)	V (100kHz)	V (100kHz)	V (100kHz)
TBJA155*006C□#@0*++	A	1.5	6	8	0.09	0.9	1.08	6	9	9	0.075	0.097	0.087	0.039	0.775	0.697	0.310
TBJA225*006C□#@0*++	A	2.2	6	8	0.132	1.32	1.584	6	9	9	0.075	0.097	0.087	0.039	0.775	0.697	0.310
TBJA335*006C□#@0*++	A	3.3	6	8	0.198	1.98	2.376	6	9	9	0.075	0.097	0.087	0.039	0.775	0.697	0.310
TBJB475*006C□#@0*++	B	4.7	6	5.5	0.282	2.82	3.384	6	9	9	0.085	0.124	0.112	0.050	0.684	0.615	0.273
TBJA685*006C□#@0*++	A	6.8	6	5	0.408	4.08	8.16	6	9	10	0.075	0.122	0.110	0.049	0.612	0.551	0.245
TBJA685*006L□#@0*++	A	6.8	6	1.8	0.408	4.08	8.16	6	9	10	0.075	0.204	0.184	0.082	0.367	0.331	0.147
TBJB685*006C□#@0*++	B	6.8	6	4.5	0.408	4.08	4.896	6	9	9	0.085	0.137	0.124	0.055	0.618	0.557	0.247
TBJA106*006C□#@0*++	A	10	6	4	0.6	6	12	6	9	10	0.075	0.137	0.123	0.055	0.548	0.493	0.219
TBJA106*006L□#@0*++	A	10	6	1.5	0.6	6	12	6	9	10	0.075	0.224	0.201	0.089	0.335	0.302	0.134
TBJB106*006C□#@0*++	B	10	6	3.5	0.6	6	7.2	6	9	9	0.085	0.156	0.140	0.062	0.545	0.491	0.218
TBJA156*006C□#@0*++	A	15	6	3.5	0.9	9	18	6	9	10	0.075	0.146	0.132	0.059	0.512	0.461	0.205
TBJA156*006L□#@0*++	A	15	6	1.5	0.9	9	18	6	9	10	0.075	0.224	0.201	0.089	0.335	0.302	0.134
TBJB156*006C□#@0*++	B	15	6	3.5	0.225	2.25	4.5	6	9	10	0.085	0.156	0.140	0.062	0.545	0.491	0.218
TBJC156*006C□#@0*++	C	15	6	3	0.9	9	10.8	6	6	9	0.110	0.191	0.172	0.077	0.574	0.517	0.230
TBJA226*006C□#@0*++	A	22	6	3	1.32	13.2	26.4	6	6	10	0.075	0.158	0.142	0.063	0.474	0.427	0.190
TBJA226*006L□#@0*++	A	22	6	0.5	1.32	13.2	26.4	6	9	10	0.075	0.387	0.349	0.155	0.194	0.174	0.077
TBJB226*006C□#@0*++	B	22	6	2.5	1.32	13.2	26.4	6	9	10	0.085	0.184	0.166	0.074	0.461	0.415	0.184
TBJB226*006L□#@0*++	B	22	6	0.375	1.32	13.2	26.4	6	9	10	0.085	0.476	0.428	0.190	0.179	0.161	0.071
TBJC226*006C□#@0*++	C	22	6	2.2	1.32	13.2	15.84	6	9	9	0.110	0.224	0.201	0.089	0.492	0.443	0.197
TBJA336*006L□#@0*++	A	33	6	0.6	1.98	19.8	39.6	8	10	12	0.075	0.354	0.318	0.141	0.212	0.191	0.085
TBJB336*006C□#@0*++	B	33	6	2.2	1.98	19.8	39.6	6	9	10	0.085	0.197	0.177	0.079	0.432	0.389	0.173
TBJB336*006L□#@0*++	B	33	6	0.6	1.98	19.8	39.6	6	9	10	0.085	0.376	0.339	0.151	0.226	0.203	0.090
TBJA476*006L□#@0*++	A	47	6	0.8	2.82	28.2	56.4	10	12	14	0.075	0.306	0.276	0.122	0.245	0.220	0.098
TBJB476*006C□#@0*++	B	47	6	0.35	2.82	28.2	56.4	6	9	10	0.085	0.493	0.444	0.197	0.172	0.155	0.069
TBJB476*006L□#@0*++	B	47	6	0.25	2.82	28.2	56.4	6	9	10	0.085	0.583	0.525	0.233	0.146	0.131	0.058
TBJC476*006C□#@0*++	C	47	6	1.6	2.82	28.2	56.4	6	9	10	0.110	0.262	0.236	0.105	0.420	0.378	0.168
TBJC476*006L□#@0*++	C	47	6	0.3	2.82	28.2	56.4	6	9	10	0.110	0.606	0.545	0.242	0.182	0.163	0.073
TBJD476*006C□#@0*++	D	47	6	1.1	2.82	28.2	33.84	6	6	9	0.150	0.369	0.332	0.148	0.406	0.366	0.162
TBJB686*006C□#@0*++	B	68	6	1.8	4.08	40.8	81.6	8	10	12	0.085	0.217	0.196	0.087	0.391	0.352	0.156
TBJB686*006L□#@0*++	B	68	6	0.25	4.08	40.8	81.6	8	9	10	0.085	0.583	0.525	0.233	0.146	0.131	0.058
TBJC686*006C□#@0*++	C	68	6	1.6	4.08	40.8	81.6	6	9	10	0.110	0.262	0.236	0.105	0.420	0.378	0.168
TBJC686*006L□#@0*++	C	68	6	0.15	4.08	40.8	81.6	6	9	10	0.110	0.856	0.771	0.343	0.128	0.116	0.051
TBJD686*006C□#@0*++	D	68	6	0.9	4.08	40.8	48.96	6	9	9	0.150	0.408	0.367	0.163	0.367	0.331	0.147
TBJB107*006C□#@0*++	B	100	6	0.4	6	60	120	10	12	14	0.085	0.461	0.415	0.184	0.184	0.166	0.074
TBJB107*006L□#@0*++	B	100	6	0.25	6	60	120	10	12	14	0.085	0.583	0.525	0.233	0.146	0.131	0.058
TBJC107*006C□#@0*++	C	100	6	0.9	6	60	120	6	9	10	0.110	0.350	0.315	0.140	0.315	0.283	0.126
TBJC107*006L□#@0*++	C	100	6	0.15	6	60	120	6	9	10	0.110	0.856	0.771	0.343	0.128	0.116	0.051
TBJD107*006C□#@0*++	D	100	6	0.9	6	60	120	6	9	10	0.150	0.408	0.367	0.163	0.367	0.331	0.147
TBJC157*006C□#@0*++	C	150	6	0.09	9	90	180	6	9	10	0.110	1.106	0.995	0.442	0.099	0.090	0.040
TBJC157*006L□#@0*++	C	150	6	0.05	9	90	180	6	9	10	0.110	1.483	1.335	0.593	0.074	0.067	0.030
TBJD157*006C□#@0*++	D	150	6	0.9	9	90	180	6	9	10	0.150	0.408	0.367	0.163	0.367	0.331	0.147
TBJD157*006L□#@0*++	D	150	6	0.05	9	90	180	6	9	10	0.150	1.732	1.559	0.693	0.087	0.078	0.035
TBJC227*006C□#@0*++	C	220	6	1.2	13.2	132	264	10	12	14	0.110	0.303	0.272	0.121	0.363	0.327	0.145
TBJC227*006L□#@0*++	C	220	6	0.07	13.2	132	264	8	10	12	0.110	1.254	1.128	0.501	0.088	0.079	0.035
TBJD227*006C□#@0*++	D	220	6	0.9	13.2	132	264	8	10	12	0.150	0.408	0.367	0.163	0.367	0.331	0.147
TBJD227*006L□#@0*++	D	220	6	0.1	13.2	132	264	8	10	12	0.150	1.225	1.102	0.490	0.122	0.110	0.049
TBJE227*006L□#@0*++	E	220	6	0.1	13.2	132	264	8	10	12	0.165	1.285	1.156	0.514	0.128	0.116	0.051
TBJD337*006C□#@0*++	D	330	6	0.05	19.8	198	396	8	10	12	0.150	1.732	1.559	0.693	0.087	0.078	0.035
TBJD337*006L□#@0*++	D	330	6	0.045	19.8	198	396	8	10	12	0.150	1.826	1.643	0.730	0.082	0.074	0.033
TBJE337*006C□#@0*++	E	330	6	0.9	19.8	198	396	8	10	12	0.165	0.428	0.385	0.171	0.385	0.347	0.154
TBJE337*006L□#@0*++	E	330	6	0.1	19.8	198	396	8	10	12	0.165	1.285	1.156	0.514	0.128	0.116	0.051

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

NOTE: KYOCERA AVX reserves the right to supply a higher voltage rating or tighter tolerance part in the same case size, to the same reliability standards.

TBJ SERIES

COTS-Plus



RATING & PART NUMBER REFERENCE		Parametric Specifications by Rating per MIL-PRF-55365/4									Typical RMS Ripple Data by Rating						
		Cap @ 120Hz	DC Rated Voltage	ESR @ 100kHz	DCL max			DF Max			Power Dissipation	25°C Ripple Current	85°C Ripple Current	125°C Ripple Current	25°C Ripple Voltage	85°C Ripple Voltage	125°C Ripple Voltage
					+25°C	+85°C	+125°C	+25°C	+(85/125) °C	-55°C							
COTS-Plus P/N	Case	µF 25°C	V +85°C	Ohms +25°C	(µA)	(µA)	(µA)	(%)	(%)	(%)	W	A (100kHz)	A (100kHz)	A (100kHz)	V (100kHz)	V (100kHz)	V (100kHz)
TBJV337*006L□#@0***	V	330	6	0.1	19.8	198	396	8	10	12	0.250	1.581	1.423	0.632	0.158	0.142	0.063
TBJD477*006C□#@0***	D	470	6	0.06	28.2	282	564	12	14	16	0.150	1.581	1.423	0.632	0.095	0.085	0.038
TBJD477*006L□#@0***	D	470	6	0.045	28.2	282	564	12	14	16	0.150	1.826	1.643	0.730	0.082	0.074	0.033
TBJE477*006C□#@0***	E	470	6	0.9	28.2	282	564	10	12	14	0.165	0.428	0.385	0.171	0.385	0.347	0.154
TBJE477*006L□#@0***	E	470	6	0.05	28.2	282	564	10	12	14	0.165	1.817	1.635	0.727	0.091	0.082	0.036
TBJV477*006C□#@0***	V	470	6	0.1	28.2	282	564	10	12	12	0.250	1.581	1.423	0.632	0.158	0.142	0.063
TBJV477*006L□#@0***	V	470	6	0.055	28.2	282	564	10	12	14	0.250	2.132	1.919	0.853	0.117	0.106	0.047
TBJE687*006C□#@0***	E	680	6	0.06	40.8	408	816	10	12	14	0.165	1.658	1.492	0.663	0.099	0.090	0.040
TBJE687*006L□#@0***	E	680	6	0.045	40.8	408	816	10	12	14	0.165	1.915	1.723	0.766	0.086	0.078	0.034
TBJV687*006C□#@0***	V	680	6	0.04	40.8	408	816	10	12	14	0.250	2.500	2.250	1.000	0.100	0.090	0.040
TBJV687*006L□#@0***	V	680	6	0.035	40.8	408	816	14	17	20	0.250	2.673	2.405	1.069	0.094	0.084	0.037
TBJV108*006C□#@0***	V	1000	6	0.05	60	600	1200	16	19	21	0.250	2.236	2.012	0.894	0.112	0.101	0.045
TBJV108*006L□#@0***	V	1000	6	0.04	60	600	1200	16	19	21	0.250	2.500	2.250	1.000	0.100	0.090	0.040
TBJA105*010C□#@0***	A	1	10	10	0.1	1	1.2	4	6	6	0.075	0.087	0.078	0.035	0.866	0.779	0.346
TBJA155*010C□#@0***	A	1.5	10	8	0.15	1.5	1.8	6	6	9	0.075	0.097	0.087	0.039	0.775	0.697	0.310
TBJA225*010C□#@0***	A	2.2	10	8	0.22	2.2	2.64	6	9	9	0.075	0.097	0.087	0.039	0.775	0.697	0.310
TBJA225*010L□#@0***	A	2.2	10	1.8	0.22	2.2	4.4	6	9	10	0.075	0.204	0.184	0.082	0.367	0.331	0.147
TBJB335*010C□#@0***	B	3.3	10	5.5	0.33	3.3	3.96	6	9	9	0.085	0.124	0.112	0.050	0.684	0.615	0.273
TBJA475*010C□#@0***	A	4.7	10	5	0.47	4.7	9.4	6	9	10	0.075	0.122	0.110	0.049	0.612	0.551	0.245
TBJA475*010L□#@0***	A	4.7	10	1.4	0.47	4.7	9.4	6	9	10	0.075	0.231	0.208	0.093	0.324	0.292	0.130
TBJB475*010C□#@0***	B	4.7	10	4.5	0.47	4.7	5.64	6	9	9	0.085	0.137	0.124	0.055	0.618	0.557	0.247
TBJA685*010C□#@0***	A	6.8	10	4	0.68	6.8	13.6	6	9	10	0.075	0.137	0.123	0.055	0.548	0.493	0.219
TBJA685*010L□#@0***	A	6.8	10	1.8	0.68	6.8	13.6	6	9	10	0.075	0.204	0.184	0.082	0.367	0.331	0.147
TBJB685*010C□#@0***	B	6.8	10	3.5	0.68	6.8	8.16	6	9	9	0.085	0.156	0.140	0.062	0.545	0.491	0.218
TBJA106*010C□#@0***	A	10	10	3	1	10	20	6	9	10	0.075	0.158	0.142	0.063	0.474	0.427	0.190
TBJA106*010L□#@0***	A	10	10	1.8	1	10	20	6	9	10	0.075	0.204	0.184	0.082	0.367	0.331	0.147
TBJB106*010C□#@0***	B	10	10	2.5	1	10	20	6	9	10	0.085	0.184	0.166	0.074	0.461	0.415	0.184
TBJA156*010C□#@0***	A	15	10	3.2	1.5	15	30	6	9	10	0.075	0.153	0.138	0.061	0.490	0.441	0.196
TBJA156*010L□#@0***	A	15	10	1	1.5	15	30	6	9	10	0.075	0.274	0.246	0.110	0.274	0.246	0.110
TBJB156*010C□#@0***	B	15	10	2.8	1.5	15	30	6	9	10	0.085	0.174	0.157	0.070	0.488	0.439	0.195
TBJB156*010L□#@0***	B	15	10	0.45	1.5	15	30	6	9	10	0.085	0.435	0.391	0.174	0.196	0.176	0.078
TBJC156*010C□#@0***	C	15	10	2.5	1.5	15	18	6	6	9	0.110	0.210	0.189	0.084	0.524	0.472	0.210
TBJB226*010C□#@0***	B	22	10	2.4	2.2	22	44	6	9	10	0.085	0.188	0.169	0.075	0.452	0.406	0.181
TBJB226*010L□#@0***	B	22	10	0.7	2.2	22	44	6	9	10	0.085	0.348	0.314	0.139	0.244	0.220	0.098
TBJC226*010C□#@0***	C	22	10	1	2.2	22	44	6	9	10	0.110	0.332	0.298	0.133	0.332	0.298	0.133
TBJC226*010L□#@0***	C	22	10	0.3	2.2	22	44	6	9	10	0.110	0.606	0.545	0.242	0.182	0.163	0.073
TBJA336*010C□#@0***	A	33	10	1.7	3.3	33	66	8	10	12	0.075	0.210	0.189	0.084	0.357	0.321	0.143
TBJA336*010L□#@0***	A	33	10	0.7	3.3	33	66	8	10	12	0.075	0.327	0.295	0.131	0.229	0.206	0.092
TBJB336*010C□#@0***	B	33	10	1.8	3.3	33	66	6	9	10	0.085	0.217	0.196	0.087	0.391	0.352	0.156
TBJB336*010L□#@0***	B	33	10	0.25	3.3	33	66	6	8	10	0.085	0.583	0.525	0.233	0.146	0.131	0.058
TBJC336*010C□#@0***	C	33	10	1.6	3.3	33	66	6	9	10	0.110	0.262	0.236	0.105	0.420	0.378	0.168
TBJC336*010L□#@0***	C	33	10	0.15	3.3	33	66	6	9	10	0.110	0.856	0.771	0.343	0.128	0.116	0.051
TBJD336*010C□#@0***	D	33	10	1.1	3.3	33	39.6	6	9	9	0.150	0.369	0.332	0.148	0.406	0.366	0.162
TBJB476*010C□#@0***	B	47	10	0.35	4.7	47	94	8	10	12	0.085	0.493	0.444	0.197	0.172	0.155	0.069
TBJB476*010L□#@0***	B	47	10	0.25	4.7	47	94	8	10	12	0.085	0.583	0.525	0.233	0.146	0.131	0.058
TBJC476*010C□#@0***	C	47	10	1.2	4.7	47	94	6	9	10	0.110	0.303	0.272	0.121	0.363	0.327	0.145
TBJC476*010L□#@0***	C	47	10	0.2	4.7	47	94	6	9	10	0.110	0.742	0.667	0.297	0.148	0.133	0.059
TBJD476*010C□#@0***	D	47	10	0.9	4.7	47	56.4	6	9	9	0.150	0.408	0.367	0.163	0.367	0.331	0.147
TBJD476*010L□#@0***	D	47	10	0.1	4.7	47	94	6	9	10	0.150	1.225	1.102	0.490	0.122	0.110	0.049
TBJB686*010L□#@0***	B	68	10	0.6	6.8	68	136	8	10	12	0.085	0.376	0.339	0.151	0.226	0.203	0.090
TBJC686*010C□#@0***	C	68	10	1.2	6.8	68	136	6	10	12	0.110	0.303	0.272	0.121	0.363	0.327	0.145

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

NOTE: KYOCERA AVX reserves the right to supply a higher voltage rating or tighter tolerance part in the same case size, to the same reliability standards.

TBJ SERIES

COTS-Plus

RATING & PART NUMBER REFERENCE		Parametric Specifications by Rating per MIL-PRF-55365/4									Typical RMS Ripple Data by Rating						
		Cap @ 120Hz	DC Rated Voltage	ESR @ 100kHz	DCL max			DF Max			Power Dissipation	25°C Ripple Current	85°C Ripple Current	125°C Ripple Current	25°C Ripple Voltage	85°C Ripple Voltage	125°C Ripple Voltage
					+25°C	+85°C	+125°C	+25°C	+(85/125) °C	-55°C							
COTS-Plus P/N	Case	µF 25°C	V +85°C	Ohms +25°C	(µA)	(µA)	(µA)	(%)	(%)	(%)	W	A (100kHz)	A (100kHz)	A (100kHz)	V (100kHz)	V (100kHz)	V (100kHz)
TBJC686*010L□#@0^++	C	68	10	0.08	6.8	68	136	6	10	12	0.110	1.173	1.055	0.469	0.094	0.084	0.038
TBJD686*010C□#@0^++	D	68	10	0.9	6.8	68	136	6	9	10	0.150	0.408	0.367	0.163	0.367	0.331	0.147
TBJD686*010L□#@0^++	D	68	10	0.1	6.8	68	136	6	9	10	0.150	1.225	1.102	0.490	0.122	0.110	0.049
TBJB107*010L□#@0^++	B	100	10	0.4	10	100	200	8	10	12	0.085	0.461	0.415	0.184	0.184	0.166	0.074
TBJC107*010C□#@0^++	C	100	10	1.2	10	100	200	8	10	12	0.110	0.303	0.272	0.121	0.363	0.327	0.145
TBJC107*010L□#@0^++	C	100	10	0.2	10	100	200	8	10	12	0.110	0.742	0.667	0.297	0.148	0.133	0.059
TBJD107*010C□#@0^++	D	100	10	0.9	10	100	200	6	9	10	0.150	0.408	0.367	0.163	0.367	0.331	0.147
TBJD107*010L□#@0^++	D	100	10	0.1	10	100	200	6	9	10	0.150	1.225	1.102	0.490	0.122	0.110	0.049
TBJE107*010C□#@0^++	E	100	10	0.125	10	100	200	6	9	10	0.165	1.285	1.156	0.514	0.128	0.116	0.051
TBJD157*010C□#@0^++	D	150	10	0.9	15	150	300	8	10	12	0.150	0.408	0.367	0.163	0.367	0.331	0.147
TBJD157*010L□#@0^++	D	150	10	0.1	15	150	300	8	10	12	0.150	1.225	1.102	0.490	0.122	0.110	0.049
TBJE157*010C□#@0^++	E	150	10	0.1	15	150	300	8	10	12	0.165	1.285	1.156	0.514	0.128	0.116	0.051
TBJD227*010C□#@0^++	D	220	10	0.9	22	220	440	8	10	12	0.150	0.408	0.367	0.163	0.367	0.331	0.147
TBJD227*010L□#@0^++	D	220	10	0.15	22	220	440	8	10	12	0.150	1.000	0.900	0.400	0.150	0.135	0.060
TBJE227*010C□#@0^++	E	220	10	0.9	22	220	440	8	10	12	0.165	0.428	0.385	0.171	0.385	0.347	0.154
TBJE227*010L□#@0^++	E	220	10	0.1	22	220	440	8	10	12	0.165	1.285	1.156	0.514	0.128	0.116	0.051
TBJD337*010C□#@0^++	D	330	10	0.9	33	330	660	8	10	12	0.150	0.408	0.367	0.163	0.367	0.331	0.147
TBJD337*010L□#@0^++	D	330	10	0.15	33	330	660	8	10	12	0.150	1.000	0.900	0.400	0.150	0.135	0.060
TBJE337*010C□#@0^++	E	330	10	0.9	33	330	660	8	10	12	0.165	0.428	0.385	0.171	0.385	0.347	0.154
TBJE337*010L□#@0^++	E	330	10	0.06	33	330	660	8	10	12	0.165	1.658	1.492	0.663	0.099	0.090	0.040
TBJV337*010C□#@0^++	V	330	10	0.1	33	330	660	8	10	12	0.250	1.581	1.423	0.632	0.158	0.142	0.063
TBJV337*010L□#@0^++	V	330	10	0.06	33	330	660	10	10	12	0.250	2.041	1.837	0.816	0.122	0.110	0.049
TBJE477*010C□#@0^++	E	470	10	0.9	47	470	940	10	12	14	0.165	0.428	0.385	0.171	0.385	0.347	0.154
TBJE477*010L□#@0^++	E	470	10	0.05	47	470	940	10	12	14	0.165	1.817	1.635	0.727	0.091	0.082	0.036
TBJV477*010C□#@0^++	V	470	10	0.1	47	470	940	10	12	14	0.250	1.581	1.423	0.632	0.158	0.142	0.063
TBJV477*010L□#@0^++	V	470	10	0.06	47	470	940	10	12	14	0.250	2.041	1.837	0.816	0.122	0.110	0.049
TBJA684*015C□#@0^++	A	0.68	15	12	0.102	1.02	1.224	4	6	6	0.075	0.079	0.071	0.032	0.949	0.854	0.379
TBJA105*015C□#@0^++	A	1	15	10	0.15	1.5	1.8	4	6	6	0.075	0.087	0.078	0.035	0.866	0.779	0.346
TBJA155*015C□#@0^++	A	1.5	15	8	0.225	2.25	2.7	6	9	9	0.075	0.097	0.087	0.039	0.775	0.697	0.310
TBJB225*015C□#@0^++	B	2.2	15	5.5	0.33	3.3	3.96	6	9	9	0.085	0.124	0.112	0.050	0.684	0.615	0.273
TBJB335*015C□#@0^++	B	3.3	15	5	0.495	4.95	5.94	6	8	9	0.085	0.130	0.117	0.052	0.652	0.587	0.261
TBJB475*015C□#@0^++	B	4.7	15	4	0.705	7.05	8.46	6	8	8	0.085	0.146	0.131	0.058	0.583	0.525	0.233
TBJC106*015C□#@0^++	C	10	15	2.5	1.5	15	18	6	8	9	0.110	0.210	0.189	0.084	0.524	0.472	0.210
TBJD226*015C□#@0^++	D	22	15	1.1	3.3	33	39.6	6	8	9	0.150	0.369	0.332	0.148	0.406	0.366	0.162
TBJD336*015C□#@0^++	D	33	15	0.9	4.95	49.5	59.4	6	8	10	0.150	0.408	0.367	0.163	0.367	0.331	0.147
TBJD157*015L□#@0^++	D	150	15	0.05	5.625	56.25	112.5	6	9	10	0.150	1.732	1.559	0.693	0.087	0.078	0.035
TBJA684*016C□#@0^++	A	0.68	16	12	0.109	1.088	2.176	4	6	6	0.075	0.079	0.071	0.032	0.949	0.854	0.379
TBJA105*016C□#@0^++	A	1	16	10	0.16	1.6	3.2	4	6	6	0.075	0.087	0.078	0.035	0.866	0.779	0.346
TBJA225*016C□#@0^++	A	2.2	16	5.5	0.352	3.52	7.04	6	9	10	0.075	0.117	0.105	0.047	0.642	0.578	0.257
TBJA225*016L□#@0^++	A	2.2	16	1.8	0.352	3.52	7.04	6	9	10	0.075	0.204	0.184	0.082	0.367	0.331	0.147
TBJB225*016C□#@0^++	B	2.2	16	5	0.352	3.52	7.04	6	8	8	0.085	0.130	0.117	0.052	0.652	0.587	0.261
TBJA335*016C□#@0^++	A	3.3	16	5	0.528	5.28	10.56	6	9	10	0.075	0.122	0.110	0.049	0.612	0.551	0.245
TBJA335*016L□#@0^++	A	3.3	16	3.5	0.528	5.28	10.56	6	9	10	0.075	0.146	0.132	0.059	0.512	0.461	0.205
TBJB335*016C□#@0^++	B	3.3	16	4.5	0.528	5.28	10.56	6	9	10	0.085	0.137	0.124	0.055	0.618	0.557	0.247
TBJA475*016C□#@0^++	A	4.7	16	4	0.752	7.52	15.04	6	9	10	0.075	0.137	0.123	0.055	0.548	0.493	0.219
TBJA475*016L□#@0^++	A	4.7	16	2	0.752	7.52	15.04	6	9	10	0.075	0.194	0.174	0.077	0.387	0.349	0.155
TBJB475*016C□#@0^++	B	4.7	16	3.1	0.752	7.52	15.04	6	8	8	0.085	0.166	0.149	0.066	0.513	0.462	0.205
TBJB475*016L□#@0^++	B	4.7	16	0.8	0.752	7.52	15.04	6	9	10	0.085	0.326	0.293	0.130	0.261	0.235	0.104
TBJA685*016C□#@0^++	A	6.8	16	2.5	1.088	10.88	21.76	6	9	10	0.075	0.173	0.156	0.069	0.433	0.390	0.173
TBJA685*016L□#@0^++	A	6.8	16	1.5	1.088	10.88	21.76	6	9	10	0.075	0.224	0.201	0.089	0.335	0.302	0.134
TBJB685*016C□#@0^++	B	6.8	16	2.5	1.088	10.88	21.76	6	9	10	0.085	0.184	0.166	0.074	0.461	0.415	0.184

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

NOTE: KYOCERA AVX reserves the right to supply a higher voltage rating or tighter tolerance part in the same case size, to the same reliability standards.

TBJ SERIES

COTS-Plus



RATING & PART NUMBER REFERENCE		Parametric Specifications by Rating per MIL-PRF-55365/4									Typical RMS Ripple Data by Rating						
		Cap @ 120Hz	DC Rated Voltage	ESR @ 100kHz	DCL max			DF Max			Power Dissipation	25°C Ripple Current	85°C Ripple Current	125°C Ripple Current	25°C Ripple Voltage	85°C Ripple Voltage	125°C Ripple Voltage
					+25°C	+85°C	+125°C	+25°C	+(85/125) °C	-55°C							
COTS-Plus P/N	Case	@ µF 25°C	@ V +85°C	@ Ohms +25°C	(µA)	(µA)	(µA)	(%)	(%)	(%)	W	A (100kHz)	A (100kHz)	A (100kHz)	V (100kHz)	V (100kHz)	V (100kHz)
TBJB685*016L□#@0***	B	6.8	16	0.6	1.088	10.88	21.76	6	9	10	0.085	0.376	0.339	0.151	0.226	0.203	0.090
TBJA106*016C□#@0***	A	10	16	3	1.6	16	32	8	10	12	0.075	0.158	0.142	0.063	0.474	0.427	0.190
TBJA106*016L□#@0***	A	10	16	1	1.6	16	32	8	10	12	0.075	0.274	0.246	0.110	0.274	0.246	0.110
TBJB106*016C□#@0***	B	10	16	2.8	1.6	16	32	6	9	10	0.085	0.174	0.157	0.070	0.488	0.439	0.195
TBJB106*016L□#@0***	B	10	16	0.5	1.6	16	32	6	9	10	0.085	0.412	0.371	0.165	0.206	0.186	0.082
TBJC106*016C□#@0***	C	10	16	2.5	1.6	16	32	6	8	10	0.110	0.210	0.189	0.084	0.524	0.472	0.210
TBJC106*016L□#@0***	C	10	16	0.5	1.6	16	32	6	9	10	0.110	0.469	0.422	0.188	0.235	0.211	0.094
TBJB156*016C□#@0***	B	15	16	2.5	2.4	24	48	6	9	10	0.085	0.184	0.166	0.074	0.461	0.415	0.184
TBJB156*016L□#@0***	B	15	16	0.8	2.4	24	48	6	9	10	0.085	0.326	0.293	0.130	0.261	0.235	0.104
TBJC156*016C□#@0***	C	15	16	1.8	2.4	24	48	6	9	10	0.110	0.247	0.222	0.099	0.445	0.400	0.178
TBJB226*016C□#@0***	B	22	16	2.3	3.52	35.2	70.4	6	9	10	0.085	0.192	0.173	0.077	0.442	0.398	0.177
TBJB226*016L□#@0***	B	22	16	0.6	3.52	35.2	70.4	6	9	10	0.085	0.376	0.339	0.151	0.226	0.203	0.090
TBJC226*016C□#@0***	C	22	16	1.6	3.52	35.2	70.4	6	9	10	0.110	0.262	0.236	0.105	0.420	0.378	0.168
TBJC226*016L□#@0***	C	22	16	0.375	3.52	35.2	70.4	6	9	10	0.110	0.542	0.487	0.217	0.203	0.183	0.081
TBJD226*016C□#@0***	D	22	16	1.1	3.52	35.2	70.4	6	8	9	0.150	0.369	0.332	0.148	0.406	0.366	0.162
TBJB336*016L□#@0***	B	33	16	0.35	5.28	52.8	105.6	8	10	12	0.085	0.493	0.444	0.197	0.172	0.155	0.069
TBJC336*016C□#@0***	C	33	16	1.5	5.28	52.8	105.6	6	9	10	0.110	0.271	0.244	0.108	0.406	0.366	0.162
TBJC336*016L□#@0***	C	33	16	0.3	5.28	52.8	105.6	6	9	10	0.110	0.606	0.545	0.242	0.182	0.163	0.073
TBJD336*016C□#@0***	D	33	16	0.9	5.28	52.8	105.6	6	9	10	0.150	0.408	0.367	0.163	0.367	0.331	0.147
TBJD336*016L□#@0***	D	33	16	0.2	5.28	52.8	105.6	6	9	10	0.150	0.866	0.779	0.346	0.173	0.156	0.069
TBJC476*016C□#@0***	C	47	16	1.5	7.52	75.2	150.4	6	9	10	0.110	0.271	0.244	0.108	0.406	0.366	0.162
TBJC476*016L□#@0***	C	47	16	0.35	7.52	75.2	150.4	6	9	10	0.110	0.561	0.505	0.224	0.196	0.177	0.078
TBJD476*016C□#@0***	D	47	16	0.9	7.52	75.2	150.4	6	9	10	0.150	0.408	0.367	0.163	0.367	0.331	0.147
TBJD476*016L□#@0***	D	47	16	0.15	7.52	75.2	150.4	6	9	10	0.150	1.000	0.900	0.400	0.150	0.135	0.060
TBJC686*016C□#@0***	C	68	16	0.2	10.88	108.8	217.6	6	9	10	0.110	0.742	0.667	0.297	0.148	0.133	0.059
TBJC686*016L□#@0***	C	68	16	0.125	10.88	108.8	217.6	6	9	10	0.110	0.938	0.844	0.375	0.117	0.106	0.047
TBJD686*016C□#@0***	D	68	16	0.9	10.88	108.8	217.6	6	9	10	0.150	0.408	0.367	0.163	0.367	0.331	0.147
TBJD686*016L□#@0***	D	68	16	0.07	10.88	108.8	217.6	6	9	10	0.150	1.464	1.317	0.586	0.102	0.092	0.041
TBJD107*016C□#@0***	D	100	16	0.9	16	160	320	6	9	10	0.150	0.408	0.367	0.163	0.367	0.331	0.147
TBJD107*016L□#@0***	D	100	16	0.125	16	160	320	6	9	10	0.150	1.095	0.986	0.438	0.137	0.123	0.055
TBJE107*016C□#@0***	E	100	16	0.9	16	160	320	6	9	10	0.165	0.428	0.385	0.171	0.385	0.347	0.154
TBJE107*016L□#@0***	E	100	16	0.1	16	160	320	6	9	10	0.165	1.285	1.156	0.514	0.128	0.116	0.051
TBJD157*016C□#@0***	D	150	16	0.9	24	240	480	6	9	10	0.150	0.408	0.367	0.163	0.367	0.331	0.147
TBJD157*016L□#@0***	D	150	16	0.15	24	240	480	6	9	10	0.150	1.000	0.900	0.400	0.150	0.135	0.060
TBJE157*016C□#@0***	E	150	16	0.3	24	240	480	6	9	10	0.165	0.742	0.667	0.297	0.222	0.200	0.089
TBJE157*016L□#@0***	E	150	16	0.1	24	240	480	6	9	10	0.165	1.285	1.156	0.514	0.128	0.116	0.051
TBJV157*016C□#@0***	V	150	16	0.075	24	240	480	8	10	12	0.250	1.826	1.643	0.730	0.137	0.123	0.055
TBJV157*016L□#@0***	V	150	16	0.045	24	240	480	6	8	10	0.250	2.357	2.121	0.943	0.106	0.095	0.042
TBJE227*016C□#@0***	E	220	16	0.15	35.2	352	704	10	12	14	0.165	1.049	0.944	0.420	0.157	0.142	0.063
TBJE227*016L□#@0***	E	220	16	0.1	35.2	352	704	10	12	14	0.165	1.285	1.156	0.514	0.128	0.116	0.051
TBJV227*016C□#@0***	V	220	16	0.15	35.2	352	704	8	10	12	0.250	1.291	1.162	0.516	0.194	0.174	0.077
TBJV227*016L□#@0***	V	220	16	0.075	35.2	352	704	8	10	12	0.250	1.826	1.643	0.730	0.137	0.123	0.055
TBJA474*020C□#@0***	A	0.47	20	14	0.5	5	10	4	6	6	0.075	0.073	0.066	0.029	1.025	0.922	0.410
TBJA684*020C□#@0***	A	0.68	20	12	0.136	1.36	1.632	4	6	6	0.075	0.079	0.071	0.032	0.949	0.854	0.379
TBJA105*020C□#@0***	A	1	20	10	0.2	2	2.4	4	6	6	0.075	0.087	0.078	0.035	0.866	0.779	0.346
TBJA105*020L□#@0***	A	1	20	3	0.2	2	4	4	6	6	0.075	0.158	0.142	0.063	0.474	0.427	0.190
TBJA155*020C□#@0***	A	1.5	20	6.5	0.3	3	6	4	8	10	0.075	0.107	0.097	0.043	0.698	0.628	0.279
TBJB155*020C□#@0***	B	1.5	20	6	0.3	3	3.6	6	9	9	0.085	0.119	0.107	0.048	0.714	0.643	0.286
TBJA225*020C□#@0***	A	2.2	20	5.3	0.44	4.4	8.8	6	8	8	0.075	0.119	0.107	0.048	0.630	0.567	0.252
TBJA225*020L□#@0***	A	2.2	20	3	0.44	4.4	8.8	6	9	10	0.075	0.158	0.142	0.063	0.474	0.427	0.190
TBJB225*020C□#@0***	B	2.2	20	5	0.44	4.4	5.28	6	8	9	0.085	0.130	0.117	0.052	0.652	0.587	0.261

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

NOTE: KYOCERA AVX reserves the right to supply a higher voltage rating or tighter tolerance part in the same case size, to the same reliability standards.

TBJ SERIES

COTS-Plus

RATING & PART NUMBER REFERENCE		Parametric Specifications by Rating per MIL-PRF-55365/4									Typical RMS Ripple Data by Rating						
		Cap @ 120Hz	DC Rated Voltage	ESR @ 100kHz	DCL max			DF Max			Power Dissipation	25°C Ripple Current	85°C Ripple Current	125°C Ripple Current	25°C Ripple Voltage	85°C Ripple Voltage	125°C Ripple Voltage
					+25°C	+85°C	+125°C	+25°C	+(85/125) °C	-55°C							
COTS-Plus P/N	Case	µF 25°C	V +85°C	Ohms +25°C	(µA)	(µA)	(µA)	(%)	(%)	(%)	W	A (100kHz)	A (100kHz)	A (100kHz)	V (100kHz)	V (100kHz)	V (100kHz)
TBJA335*020L□#@0*++	A	3.3	20	2.5	0.66	6.6	13.2	6	9	10	0.075	0.173	0.156	0.069	0.433	0.390	0.173
TBJB335*020C□#@0*++	B	3.3	20	4	0.66	6.6	7.92	6	9	9	0.085	0.146	0.131	0.058	0.583	0.525	0.233
TBJB335*020L□#@0*++	B	3.3	20	1.3	0.66	6.6	13.2	6	9	10	0.085	0.256	0.230	0.102	0.332	0.299	0.133
TBJA475*020C□#@0*++	A	4.7	20	4	0.94	9.4	18.8	6	8	10	0.075	0.137	0.123	0.055	0.548	0.493	0.219
TBJA475*020L□#@0*++	A	4.7	20	1.8	0.94	9.4	18.8	6	8	10	0.075	0.204	0.184	0.082	0.367	0.331	0.147
TBJB475*020C□#@0*++	B	4.7	20	3	0.94	9.4	18.8	6	8	10	0.085	0.168	0.151	0.067	0.505	0.454	0.202
TBJB475*020L□#@0*++	B	4.7	20	0.75	0.94	9.4	18.8	6	9	10	0.085	0.337	0.303	0.135	0.252	0.227	0.101
TBJC475*020C□#@0*++	C	4.7	20	3	0.94	9.4	11.28	6	8	9	0.110	0.191	0.172	0.077	0.574	0.517	0.230
TBJA685*020L□#@0*++	A	6.8	20	1	1.36	13.6	27.2	6	9	10	0.075	0.274	0.246	0.110	0.274	0.246	0.110
TBJB685*020C□#@0*++	B	6.8	20	2.5	1.36	13.6	27.2	6	8	10	0.085	0.184	0.166	0.074	0.461	0.415	0.184
TBJB685*020L□#@0*++	B	6.8	20	0.6	1.36	13.6	27.2	6	9	10	0.085	0.376	0.339	0.151	0.226	0.203	0.090
TBJC685*020C□#@0*++	C	6.8	20	2.4	1.36	13.6	16.32	6	9	9	0.110	0.214	0.193	0.086	0.514	0.462	0.206
TBJC685*020L□#@0*++	C	6.8	20	0.7	1.36	13.6	27.2	6	9	10	0.110	0.396	0.357	0.159	0.277	0.250	0.111
TBJB106*020C□#@0*++	B	10	20	2.1	2	20	40	6	8	10	0.085	0.201	0.181	0.080	0.422	0.380	0.169
TBJB106*020L□#@0*++	B	10	20	1	2	20	40	6	8	10	0.085	0.292	0.262	0.117	0.292	0.262	0.117
TBJC106*020C□#@0*++	C	10	20	1.9	2	20	40	6	8	10	0.110	0.241	0.217	0.096	0.457	0.411	0.183
TBJC106*020L□#@0*++	C	10	20	0.5	2	20	40	6	9	10	0.110	0.469	0.422	0.188	0.235	0.211	0.094
TBJB156*020C□#@0*++	B	15	20	2	3	30	60	6	8	10	0.085	0.206	0.186	0.082	0.412	0.371	0.165
TBJB156*020L□#@0*++	B	15	20	0.5	3	30	60	6	9	10	0.085	0.412	0.371	0.165	0.206	0.186	0.082
TBJC156*020C□#@0*++	C	15	20	1.7	3	30	60	6	8	10	0.110	0.254	0.229	0.102	0.432	0.389	0.173
TBJC156*020L□#@0*++	C	15	20	0.4	3	30	60	6	8	10	0.110	0.524	0.472	0.210	0.210	0.189	0.084
TBJD156*020C□#@0*++	D	15	20	1.1	3	30	36	6	8	9	0.150	0.369	0.332	0.148	0.406	0.366	0.162
TBJB226*020C□#@0*++	B	22	20	0.6	4.4	44	88	6	9	10	0.085	0.376	0.339	0.151	0.226	0.203	0.090
TBJB226*020L□#@0*++	B	22	20	0.4	4.4	44	88	6	9	10	0.085	0.461	0.415	0.184	0.184	0.166	0.074
TBJC226*020C□#@0*++	C	22	20	1.6	4.4	44	88	6	8	10	0.110	0.262	0.236	0.105	0.420	0.378	0.168
TBJC226*020L□#@0*++	C	22	20	0.15	4.4	44	88	6	8	10	0.110	0.856	0.771	0.343	0.128	0.116	0.051
TBJD226*020C□#@0*++	D	22	20	0.9	4.4	44	52.8	6	9	9	0.150	0.408	0.367	0.163	0.367	0.331	0.147
TBJD226*020L□#@0*++	D	22	20	0.2	4.4	44	88	6	9	10	0.150	0.866	0.779	0.346	0.173	0.156	0.069
TBJC336*020C□#@0*++	C	33	20	1.5	6.6	66	132	6	8	10	0.110	0.271	0.244	0.108	0.406	0.366	0.162
TBJC336*020L□#@0*++	C	33	20	0.3	6.6	66	132	6	9	10	0.110	0.606	0.545	0.242	0.182	0.163	0.073
TBJD336*020C□#@0*++	D	33	20	0.9	6.6	66	132	6	8	10	0.150	0.408	0.367	0.163	0.367	0.331	0.147
TBJD336*020L□#@0*++	D	33	20	0.1	6.6	66	132	6	8	10	0.150	1.225	1.102	0.490	0.122	0.110	0.049
TBJD476*020C□#@0*++	D	47	20	0.2	9.4	94	188	6	8	10	0.150	0.866	0.779	0.346	0.173	0.156	0.069
TBJD476*020L□#@0*++	D	47	20	0.1	9.4	94	188	6	8	10	0.150	1.225	1.102	0.490	0.122	0.110	0.049
TBJE476*020C□#@0*++	E	47	20	0.25	9.4	94	188	6	8	8	0.165	0.812	0.731	0.325	0.203	0.183	0.081
TBJE476*020L□#@0*++	E	47	20	0.07	9.4	94	188	6	9	10	0.165	1.535	1.382	0.614	0.107	0.097	0.043
TBJD686*020C□#@0*++	D	68	20	0.9	13.6	136	272	6	8	10	0.150	0.408	0.367	0.163	0.367	0.331	0.147
TBJD686*020L□#@0*++	D	68	20	0.07	13.6	136	272	6	9	10	0.150	1.464	1.317	0.586	0.102	0.092	0.041
TBJE686*020C□#@0*++	E	68	20	0.9	13.6	136	272	6	8	10	0.165	0.428	0.385	0.171	0.385	0.347	0.154
TBJE686*020L□#@0*++	E	68	20	0.15	13.6	136	272	6	8	10	0.165	1.049	0.944	0.420	0.157	0.142	0.063
TBJD107*020C□#@0*++	D	100	20	0.1	20	200	400	6	9	10	0.150	1.225	1.102	0.490	0.122	0.110	0.049
TBJD107*020L□#@0*++	D	100	20	0.085	20	200	400	6	9	10	0.150	1.328	1.196	0.531	0.113	0.102	0.045
TBJE107*020C□#@0*++	E	100	20	0.15	20	200	400	6	9	10	0.165	1.049	0.944	0.420	0.157	0.142	0.063
TBJE107*020L□#@0*++	E	100	20	0.1	20	200	400	6	9	10	0.165	1.285	1.156	0.514	0.128	0.116	0.051
TBJV107*020C□#@0*++	V	100	20	0.2	20	200	400	8	10	12	0.250	1.118	1.006	0.447	0.224	0.201	0.089
TBJV107*020L□#@0*++	V	100	20	0.085	20	200	400	8	10	12	0.250	1.715	1.543	0.686	0.146	0.131	0.058
TBJE157*020C□#@0*++	E	150	20	0.3	30	300	600	8	10	10	0.165	0.742	0.667	0.297	0.222	0.200	0.089
TBJV157*020L□#@0*++	V	150	20	0.08	30	300	600	8	10	12	0.250	1.768	1.591	0.707	0.141	0.127	0.057
TBJA334*025C□#@0*++	A	0.33	25	15	0.083	0.825	0.99	4	6	6	0.075	0.071	0.064	0.028	1.061	0.955	0.424
TBJA474*025C□#@0*++	A	0.47	25	14	0.118	1.175	1.41	4	6	6	0.075	0.073	0.066	0.029	1.025	0.922	0.410
TBJA474*025L□#@0*++	A	0.47	25	7	0.118	1.175	2.35	4	6	6	0.075	0.104	0.093	0.041	0.725	0.652	0.290

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

NOTE: KYOCERA AVX reserves the right to supply a higher voltage rating or tighter tolerance part in the same case size, to the same reliability standards.

TBJ SERIES

COTS-Plus



RATING & PART NUMBER REFERENCE		Parametric Specifications by Rating per MIL-PRF-55365/4									Typical RMS Ripple Data by Rating						
		Cap @ 120Hz	DC Rated Voltage	ESR @ 100kHz	DCL max			DF Max			Power Dissipation	25°C Ripple Current	85°C Ripple Current	125°C Ripple Current	25°C Ripple Voltage	85°C Ripple Voltage	125°C Ripple Voltage
					+25°C	+85°C	+125°C	+25°C	+(85/125) °C	-55°C							
COTS-Plus P/N	Case	µF 25°C	V +85°C	Ohms +25°C	(µA)	(µA)	(µA)	(%)	(%)	(%)	W	A (100kHz)	A (100kHz)	A (100kHz)	V (100kHz)	V (100kHz)	V (100kHz)
TBJA684*025C□#@0^++	A	0.68	25	10	0.68	6.8	13.6	4	6	8	0.075	0.087	0.078	0.035	0.866	0.779	0.346
TBJA684*025L□#@0^++	A	0.68	25	6	0.17	1.7	3.4	4	6	6	0.075	0.112	0.101	0.045	0.671	0.604	0.268
TBJB684*025C□#@0^++	B	0.68	25	7.5	0.17	1.7	2.04	4	6	6	0.085	0.106	0.096	0.043	0.798	0.719	0.319
TBJA105*025C□#@0^++	A	1	25	8	0.25	2.5	5	4	6	8	0.075	0.097	0.087	0.039	0.775	0.697	0.310
TBJB105*025C□#@0^++	B	1	25	6.5	0.25	2.5	3	4	6	6	0.085	0.114	0.103	0.046	0.743	0.669	0.297
TBJA155*025C□#@0^++	A	1.5	25	7.5	0.375	3.75	7.5	6	8	10	0.075	0.100	0.090	0.040	0.750	0.675	0.300
TBJA155*025L□#@0^++	A	1.5	25	3	0.375	3.75	7.5	6	8	10	0.075	0.158	0.142	0.063	0.474	0.427	0.190
TBJB155*025C□#@0^++	B	1.5	25	6.5	0.375	3.75	4.5	6	8	9	0.085	0.114	0.103	0.046	0.743	0.669	0.297
TBJB155*025L□#@0^++	B	1.5	25	1.8	0.375	3.75	7.5	6	9	10	0.085	0.217	0.196	0.087	0.391	0.352	0.156
TBJA225*025C□#@0^++	A	2.2	25	7.0	0.6	6	12	6	9	10	0.075	0.104	0.093	0.041	0.725	0.652	0.290
TBJB225*025C□#@0^++	B	2.2	25	4.5	0.55	5.5	11	6	8	10	0.085	0.137	0.124	0.055	0.618	0.557	0.247
TBJB225*025L□#@0^++	B	2.2	25	0.9	0.55	5.5	11	6	9	10	0.085	0.307	0.277	0.123	0.277	0.249	0.111
TBJC225*025C□#@0^++	C	2.2	25	3.5	0.55	5.5	6.6	6	9	9	0.110	0.177	0.160	0.071	0.620	0.558	0.248
TBJA335*025C□#@0^++	A	3.3	25	1.5	0.825	8.25	16.5	6	9	10	0.075	0.224	0.201	0.089	0.335	0.302	0.134
TBJA335*025L□#@0^++	A	3.3	25	1	0.825	8.25	16.5	6	9	10	0.075	0.274	0.246	0.110	0.274	0.246	0.110
TBJB335*025C□#@0^++	B	3.3	25	3.5	0.825	8.25	16.5	6	8	10	0.085	0.156	0.140	0.062	0.545	0.491	0.218
TBJB335*025L□#@0^++	B	3.3	25	0.75	0.825	8.25	16.5	6	9	10	0.085	0.337	0.303	0.135	0.252	0.227	0.101
TBJC335*025C□#@0^++	C	3.3	25	3.5	0.825	8.25	9.9	6	8	9	0.110	0.177	0.160	0.071	0.620	0.558	0.248
TBJA475*025C□#@0^++	A	4.7	25	2.8	1.175	11.75	23.5	6	9	10	0.075	0.164	0.147	0.065	0.458	0.412	0.183
TBJB475*025C□#@0^++	B	4.7	25	2.8	1.175	11.75	23.5	6	8	10	0.085	0.174	0.157	0.070	0.488	0.439	0.195
TBJB475*025L□#@0^++	B	4.7	25	1.5	1.175	11.75	23.5	6	8	10	0.085	0.238	0.214	0.095	0.357	0.321	0.143
TBJC475*025C□#@0^++	C	4.7	25	2.5	1.175	11.75	14.1	6	9	9	0.110	0.210	0.189	0.084	0.524	0.472	0.210
TBJB685*025C□#@0^++	B	6.8	25	2.8	1.7	17	34	6	8	10	0.085	0.174	0.157	0.070	0.488	0.439	0.195
TBJB685*025L□#@0^++	B	6.8	25	0.7	1.7	17	34	6	9	10	0.085	0.348	0.314	0.139	0.244	0.220	0.098
TBJC685*025C□#@0^++	C	6.8	25	2	1.7	17	34	6	8	10	0.110	0.235	0.211	0.094	0.469	0.422	0.188
TBJC685*025L□#@0^++	C	6.8	25	0.5	1.7	17	34	6	9	10	0.110	0.469	0.422	0.188	0.235	0.211	0.094
TBJD685*025C□#@0^++	D	6.8	25	1.4	1.7	17	20.4	6	9	9	0.150	0.327	0.295	0.131	0.458	0.412	0.183
TBJC106*025C□#@0^++	C	10	25	1.8	2.5	25	50	6	8	10	0.110	0.247	0.222	0.099	0.445	0.400	0.178
TBJC106*025L□#@0^++	C	10	25	0.5	2.5	25	50	6	8	10	0.110	0.469	0.422	0.188	0.235	0.211	0.094
TBJD106*025C□#@0^++	D	10	25	1.2	2.5	25	30	6	8	9	0.150	0.354	0.318	0.141	0.424	0.382	0.170
TBJC156*025C□#@0^++	C	15	25	0.3	3.75	37.5	75	6	9	10	0.110	0.606	0.545	0.242	0.182	0.163	0.073
TBJC156*025L□#@0^++	C	15	25	0.22	3.75	37.5	75	6	9	10	0.110	0.707	0.636	0.283	0.156	0.140	0.062
TBJD156*025C□#@0^++	D	15	25	1	3.75	37.5	45	6	9	9	0.150	0.387	0.349	0.155	0.387	0.349	0.155
TBJD156*025L□#@0^++	D	15	25	0.3	3.75	37.5	75	6	8	9	0.150	0.707	0.636	0.283	0.212	0.191	0.085
TBJC226*025C□#@0^++	C	22	25	1.4	5.5	55	110	6	8	10	0.110	0.280	0.252	0.112	0.392	0.353	0.157
TBJC226*025L□#@0^++	C	22	25	0.275	5.5	55	110	6	8	10	0.110	0.632	0.569	0.253	0.174	0.157	0.070
TBJD226*025C□#@0^++	D	22	25	0.9	5.5	55	110	6	8	10	0.150	0.408	0.367	0.163	0.367	0.331	0.147
TBJD226*025L□#@0^++	D	22	25	0.2	5.5	55	110	6	8	10	0.150	0.866	0.779	0.346	0.173	0.156	0.069
TBJD336*025C□#@0^++	D	33	25	0.9	8.25	82.5	165	6	8	10	0.150	0.408	0.367	0.163	0.367	0.331	0.147
TBJD336*025L□#@0^++	D	33	25	0.1	8.25	82.5	165	6	8	10	0.150	1.225	1.102	0.490	0.122	0.110	0.049
TBJE336*025C□#@0^++	E	33	25	0.9	8.25	82.5	165	6	8	10	0.165	0.428	0.385	0.171	0.385	0.347	0.154
TBJE336*025L□#@0^++	E	33	25	0.3	8.25	82.5	165	6	8	10	0.165	0.742	0.667	0.297	0.222	0.200	0.089
TBJD476*025C□#@0^++	D	47	25	0.9	11.75	117.5	235	6	8	10	0.150	0.408	0.367	0.163	0.367	0.331	0.147
TBJD476*025L□#@0^++	D	47	25	0.25	11.75	117.5	235	6	8	10	0.150	0.775	0.697	0.310	0.194	0.174	0.077
TBJE476*025C□#@0^++	E	47	25	0.1	11.75	117.5	235	6	9	10	0.165	1.285	1.156	0.514	0.128	0.116	0.051
TBJE476*025L□#@0^++	E	47	25	0.08	11.75	117.5	235	6	9	10	0.165	1.436	1.293	0.574	0.115	0.103	0.046
TBJE686*025C□#@0^++	E	68	25	0.2	17	170	340	6	9	10	0.165	0.908	0.817	0.363	0.182	0.163	0.073
TBJE686*025L□#@0^++	E	68	25	0.125	17	170	340	6	9	10	0.165	1.149	1.034	0.460	0.144	0.129	0.057
TBJV686*025L□#@0^++	V	68	25	0.095	17	170	340	6	9	10	0.250	1.622	1.460	0.649	0.154	0.139	0.062

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

NOTE: KYOCERA AVX reserves the right to supply a higher voltage rating or tighter tolerance part in the same case size, to the same reliability standards.

TBJ SERIES

COTS-Plus

RATING & PART NUMBER REFERENCE		Parametric Specifications by Rating per MIL-PRF-55365/4									Typical RMS Ripple Data by Rating						
		Cap @ 120Hz	DC Rated Voltage	ESR @ 100kHz	DCL max			DF Max			Power Dissipation	25°C Ripple Current	85°C Ripple Current	125°C Ripple Current	25°C Ripple Voltage	85°C Ripple Voltage	125°C Ripple Voltage
					+25°C	+85°C	+125°C	+25°C	+(85/125) °C	-55°C							
COTS-Plus P/N	Case	µF 25°C	V +85°C	Ohms +25°C	(µA)	(µA)	(µA)	(%)	(%)	(%)	W	A (100kHz)	A (100kHz)	A (100kHz)	V (100kHz)	V (100kHz)	V (100kHz)
TBJV107*025L□#@0°++	V	100	25	0.1	25	250	500	8	10	12	0.250	1.581	1.423	0.632	0.158	0.142	0.063
TBJA104*035C□#@0°++	A	0.1	35	24	0.035	0.35	0.42	4	6	6	0.075	0.056	0.050	0.022	1.342	1.207	0.537
TBJA154*035C□#@0°++	A	0.15	35	21	0.5	5	10	4	6	6	0.075	0.060	0.054	0.024	1.255	1.129	0.502
TBJA224*035C□#@0°++	A	0.22	35	18	0.5	5	10	4	6	6	0.075	0.065	0.058	0.026	1.162	1.046	0.465
TBJA224*035L□#@0°++	A	0.22	35	6	0.077	0.77	1.54	4	6	6	0.075	0.112	0.101	0.045	0.671	0.604	0.268
TBJA334*035C□#@0°++	A	0.33	35	15	0.5	5	10	4	6	6	0.075	0.071	0.064	0.028	1.061	0.955	0.424
TBJA334*035L□#@0°++	A	0.33	35	6	0.116	1.155	2.31	4	6	6	0.075	0.112	0.101	0.045	0.671	0.604	0.268
TBJA474*035C□#@0°++	A	0.47	35	12	0.165	1.645	3.29	4	6	8	0.075	0.079	0.071	0.032	0.949	0.854	0.379
TBJA474*035L□#@0°++	A	0.47	35	6	0.165	1.645	3.29	4	6	6	0.075	0.112	0.101	0.045	0.671	0.604	0.268
TBJB474*035C□#@0°++	B	0.47	35	10	0.165	1.645	1.974	4	6	6	0.085	0.092	0.083	0.037	0.922	0.830	0.369
TBJB474*035L□#@0°++	B	0.47	35	4	0.165	1.645	3.29	4	6	6	0.085	0.146	0.131	0.058	0.583	0.525	0.233
TBJA684*035C□#@0°++	A	0.68	35	8	0.238	2.38	4.76	4	6	8	0.075	0.097	0.087	0.039	0.775	0.697	0.310
TBJA684*035L□#@0°++	A	0.68	35	6	0.238	2.38	4.76	4	6	6	0.075	0.112	0.101	0.045	0.671	0.604	0.268
TBJB684*035C□#@0°++	B	0.68	35	8	0.238	2.38	2.856	4	6	6	0.085	0.103	0.093	0.041	0.825	0.742	0.330
TBJA105*035C□#@0°++	A	1	35	7.5	0.35	3.5	7	4	6	6	0.075	0.100	0.090	0.040	0.750	0.675	0.300
TBJA105*035L□#@0°++	A	1	35	3	0.35	3.5	7	4	6	6	0.075	0.158	0.142	0.063	0.474	0.427	0.190
TBJB105*035C□#@0°++	B	1	35	6.5	0.35	3.5	4.2	4	6	6	0.085	0.114	0.103	0.046	0.743	0.669	0.297
TBJB105*035L□#@0°++	B	1	35	2	0.35	3.5	7	4	6	6	0.085	0.206	0.186	0.082	0.412	0.371	0.165
TBJA155*035C□#@0°++	A	1.5	35	7.5	0.525	5.25	10.5	6	8	9	0.075	0.100	0.090	0.040	0.750	0.675	0.300
TBJB155*035C□#@0°++	B	1.5	35	5.2	0.525	5.25	10.5	6	8	9	0.085	0.128	0.115	0.051	0.665	0.598	0.266
TBJB155*035L□#@0°++	B	1.5	35	2.5	0.525	5.25	10.5	6	9	10	0.085	0.184	0.166	0.074	0.461	0.415	0.184
TBJC155*035C□#@0°++	C	1.5	35	4.5	0.525	5.25	6.3	6	8	9	0.110	0.156	0.141	0.063	0.704	0.633	0.281
TBJA225*035C□#@0°++	A	2.2	35	4.5	0.77	7.7	15.4	6	9	9	0.075	0.129	0.116	0.052	0.581	0.523	0.232
TBJA225*035L□#@0°++	A	2.2	35	1.5	0.77	7.7	15.4	6	9	10	0.075	0.224	0.201	0.089	0.335	0.302	0.134
TBJB225*035C□#@0°++	B	2.2	35	4.2	0.77	7.7	15.4	6	8	9	0.085	0.142	0.128	0.057	0.597	0.538	0.239
TBJB225*035L□#@0°++	B	2.2	35	2	0.77	7.7	15.4	6	8	9	0.085	0.206	0.186	0.082	0.412	0.371	0.165
TBJC225*035C□#@0°++	C	2.2	35	3.5	0.77	7.7	9.24	6	8	9	0.110	0.177	0.160	0.071	0.620	0.558	0.248
TBJC225*035L□#@0°++	C	2.2	35	1	0.77	7.7	15.4	6	9	10	0.110	0.332	0.298	0.133	0.332	0.298	0.133
TBJB335*035C□#@0°++	B	3.3	35	3.5	1.155	11.55	23.1	6	8	9	0.085	0.156	0.140	0.062	0.545	0.491	0.218
TBJB335*035L□#@0°++	B	3.3	35	1	1.155	11.55	23.1	6	9	10	0.085	0.292	0.262	0.117	0.292	0.262	0.117
TBJC335*035C□#@0°++	C	3.3	35	2.5	1.155	11.55	13.86	6	8	9	0.110	0.210	0.189	0.084	0.524	0.472	0.210
TBJC335*035L□#@0°++	C	3.3	35	0.7	1.155	11.55	23.1	6	9	10	0.110	0.396	0.357	0.159	0.277	0.250	0.111
TBJB475*035C□#@0°++	B	4.7	35	3.1	1.645	16.45	32.9	6	8	9	0.085	0.166	0.149	0.066	0.513	0.462	0.205
TBJB475*035L□#@0°++	B	4.7	35	0.7	1.645	16.45	32.9	6	8	8	0.085	0.348	0.314	0.139	0.244	0.220	0.098
TBJC475*035C□#@0°++	C	4.7	35	2.2	1.645	16.45	32.9	6	8	9	0.110	0.224	0.201	0.089	0.492	0.443	0.197
TBJC475*035L□#@0°++	C	4.7	35	0.6	1.645	16.45	32.9	6	8	9	0.110	0.428	0.385	0.171	0.257	0.231	0.103
TBJD475*035C□#@0°++	D	4.7	35	1.5	1.645	16.45	19.74	6	8	9	0.150	0.316	0.285	0.126	0.474	0.427	0.190
TBJD475*035L□#@0°++	D	4.7	35	0.5	1.645	16.45	32.9	6	8	9	0.150	0.548	0.493	0.219	0.274	0.246	0.110
TBJC685*035C□#@0°++	C	6.8	35	1.8	2.38	23.8	47.6	6	9	9	0.110	0.247	0.222	0.099	0.445	0.400	0.178
TBJC685*035L□#@0°++	C	6.8	35	0.35	2.38	23.8	47.6	6	9	10	0.110	0.561	0.505	0.224	0.196	0.177	0.078
TBJD685*035C□#@0°++	D	6.8	35	1.3	2.38	23.8	28.56	6	9	9	0.150	0.340	0.306	0.136	0.442	0.397	0.177
TBJD685*035L□#@0°++	D	6.8	35	0.5	2.38	23.8	47.6	6	9	9	0.150	0.548	0.493	0.219	0.274	0.246	0.110
TBJC106*035C□#@0°++	C	10	35	1.6	3.5	35	70	6	9	9	0.110	0.262	0.236	0.105	0.420	0.378	0.168
TBJC106*035L□#@0°++	C	10	35	0.6	3.5	35	70	6	9	9	0.110	0.428	0.385	0.171	0.257	0.231	0.103
TBJD106*035C□#@0°++	D	10	35	1	3.5	35	70	6	9	9	0.150	0.387	0.349	0.155	0.387	0.349	0.155
TBJD106*035L□#@0°++	D	10	35	0.3	3.5	35	70	6	9	9	0.150	0.707	0.636	0.283	0.212	0.191	0.085
TBJE106*035C□#@0°++	E	10	35	0.25	3.5	35	70	6	9	10	0.165	0.812	0.731	0.325	0.203	0.183	0.081
TBJE106*035L□#@0°++	E	10	35	0.2	3.5	35	70	6	9	10	0.165	0.908	0.817	0.363	0.182	0.163	0.073

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

NOTE: KYOCERA AVX reserves the right to supply a higher voltage rating or tighter tolerance part in the same case size, to the same reliability standards.

TBJ SERIES

COTS-Plus



RATING & PART NUMBER REFERENCE		Parametric Specifications by Rating per MIL-PRF-55365/4									Typical RMS Ripple Data by Rating						
		Cap @ 120Hz	DC Rated Voltage	ESR @ 100kHz	DCL max			DF Max			Power Dissipation	25°C Ripple Current	85°C Ripple Current	125°C Ripple Current	25°C Ripple Voltage	85°C Ripple Voltage	125°C Ripple Voltage
					+25°C	+85°C	+125°C	+25°C	+(85/125) °C	-55°C							
COTS-Plus P/N	Case	µF @ 25°C	V @ +85°C	Ohms @ +25°C	(µA)	(µA)	(µA)	(%)	(%)	(%)	W	A (100kHz)	A (100kHz)	A (100kHz)	V (100kHz)	V (100kHz)	V (100kHz)
TBJC156*035C□#@0*++	C	15	35	1.4	5.25	52.5	105	6	9	9	0.110	0.280	0.252	0.112	0.392	0.353	0.157
TBJC156*035L□#@0*++	C	15	35	0.35	5.25	52.5	105	6	9	10	0.110	0.561	0.505	0.224	0.196	0.177	0.078
TBJD156*035C□#@0*++	D	15	35	0.9	5.25	52.5	105	6	9	9	0.150	0.408	0.367	0.163	0.367	0.331	0.147
TBJD156*035L□#@0*++	D	15	35	0.3	5.25	52.5	105	6	9	9	0.150	0.707	0.636	0.283	0.212	0.191	0.085
TBJD226*035C□#@0*++	D	22	35	0.9	7.7	77	154	6	9	9	0.150	0.408	0.367	0.163	0.367	0.331	0.147
TBJD226*035L□#@0*++	D	22	35	0.4	7.7	77	154	6	9	9	0.150	0.612	0.551	0.245	0.245	0.220	0.098
TBJE226*035C□#@0*++	E	22	35	0.9	7.7	77	154	6	9	9	0.165	0.428	0.385	0.171	0.385	0.347	0.154
TBJE226*035L□#@0*++	E	22	35	0.3	7.7	77	154	6	9	9	0.165	0.742	0.667	0.297	0.222	0.200	0.089
TBJD336*035C□#@0*++	D	33	35	0.9	11.55	115.5	231	6	9	9	0.150	0.408	0.367	0.163	0.367	0.331	0.147
TBJD336*035L□#@0*++	D	33	35	0.3	11.55	115.5	231	6	9	9	0.150	0.707	0.636	0.283	0.212	0.191	0.085
TBJE336*035C□#@0*++	E	33	35	0.25	11.55	115.5	231	6	9	10	0.165	0.812	0.731	0.325	0.203	0.183	0.081
TBJE336*035L□#@0*++	E	33	35	0.1	11.55	115.5	231	6	8	10	0.165	1.285	1.156	0.514	0.128	0.116	0.051
TBJV336*035L□#@0*++	V	33	35	0.2	11.55	115.5	231	6	9	10	0.250	1.118	1.006	0.447	0.224	0.201	0.089
TBJE476*035C□#@0*++	E	47	35	0.25	16.45	164.5	329	6	8	10	0.165	0.812	0.731	0.325	0.203	0.183	0.081
TBJE476*035L□#@0*++	E	47	35	0.2	16.45	164.5	329	6	9	9	0.165	0.908	0.817	0.363	0.182	0.163	0.073
TBJV476*035C□#@0*++	V	47	35	0.4	16.45	164.5	329	6	9	10	0.250	0.791	0.712	0.316	0.316	0.285	0.126
TBJV476*035L□#@0*++	V	47	35	0.2	16.45	164.5	329	6	10	10	0.250	1.118	1.006	0.447	0.224	0.201	0.089
TBJV686*035C□#@0*++	V	68	35	0.2	23.8	238	476	6	9	10	0.250	1.118	1.006	0.447	0.224	0.201	0.089
TBJV686*035L□#@0*++	V	68	35	0.15	23.8	238	476	6	9	10	0.250	1.291	1.162	0.516	0.194	0.174	0.077
TBJA104*050C□#@0*++	A	0.1	50	22	0.05	0.5	0.6	6	8	8	0.075	0.058	0.053	0.023	1.285	1.156	0.514
TBJA154*050C□#@0*++	A	0.15	50	21	0.02	0.2	0.4	4	6	6	0.075	0.060	0.054	0.024	1.255	1.129	0.502
TBJA154*050L□#@0*++	A	0.15	50	9	0.075	0.75	1.5	4	6	6	0.075	0.091	0.082	0.037	0.822	0.739	0.329
TBJB154*050C□#@0*++	B	0.15	50	17	0.075	0.75	0.9	4	6	6	0.085	0.071	0.064	0.028	1.202	1.082	0.481
TBJA224*050C□#@0*++	A	0.22	50	18	0.11	1.1	2.2	4	6	6	0.075	0.065	0.058	0.026	1.162	1.046	0.465
TBJA224*050L□#@0*++	A	0.22	50	7	0.11	1.1	2.2	4	6	6	0.075	0.104	0.093	0.041	0.725	0.652	0.290
TBJB224*050C□#@0*++	B	0.22	50	14	0.11	1.1	1.32	4	6	6	0.085	0.078	0.070	0.031	1.091	0.982	0.436
TBJB334*050C□#@0*++	B	0.33	50	12	0.165	1.65	1.98	4	6	6	0.085	0.084	0.076	0.034	1.010	0.909	0.404
TBJC474*050C□#@0*++	C	0.47	50	8	0.235	2.35	2.82	4	6	6	0.110	0.117	0.106	0.047	0.938	0.844	0.375
TBJA684*050C□#@0*++	A	0.68	50	7.9	0.34	3.4	6.8	4	6	8	0.075	0.097	0.088	0.039	0.770	0.693	0.308
TBJC684*050C□#@0*++	C	0.68	50	7	0.34	3.4	4.08	4	6	6	0.110	0.125	0.113	0.050	0.877	0.790	0.351
TBJC105*050C□#@0*++	C	1	50	6	0.5	5	6	4	6	6	0.110	0.135	0.122	0.054	0.812	0.731	0.325
TBJC105*050L□#@0*++	C	1	50	2.5	0.5	5	10	4	6	6	0.110	0.210	0.189	0.084	0.524	0.472	0.210
TBJC155*050C□#@0*++	C	1.5	50	5	0.75	7.5	15	6	8	9	0.110	0.148	0.133	0.059	0.742	0.667	0.297
TBJC155*050L□#@0*++	C	1.5	50	1.5	0.75	7.5	15	6	9	10	0.110	0.271	0.244	0.108	0.406	0.366	0.162
TBJD155*050C□#@0*++	D	1.5	50	4	0.75	7.5	9	6	8	9	0.150	0.194	0.174	0.077	0.775	0.697	0.310
TBJD225*050C□#@0*++	D	2.2	50	2.5	1.1	11	13.2	6	8	9	0.150	0.245	0.220	0.098	0.612	0.551	0.245
TBJD225*050L□#@0*++	D	2.2	50	1.2	1.1	11	22	6	9	10	0.150	0.354	0.318	0.141	0.424	0.382	0.170
TBJD335*050C□#@0*++	D	3.3	50	2	1.65	16.5	19.8	6	9	9	0.150	0.274	0.246	0.110	0.548	0.493	0.219
TBJD335*050L□#@0*++	D	3.3	50	0.8	1.65	16.5	33	6	9	10	0.150	0.433	0.390	0.173	0.346	0.312	0.139
TBJD475*050C□#@0*++	D	4.7	50	1.5	2.35	23.5	28.2	6	9	9	0.150	0.316	0.285	0.126	0.474	0.427	0.190
TBJD475*050L□#@0*++	D	4.7	50	0.3	2.35	23.5	47	6	9	9	0.150	0.707	0.636	0.283	0.212	0.191	0.085
TBJD685*050C□#@0*++	D	6.8	50	1	3.4	34	68	6	9	9	0.150	0.387	0.349	0.155	0.387	0.349	0.155
TBJD685*050L□#@0*++	D	6.8	50	0.5	3.4	34	68	6	9	9	0.150	0.548	0.493	0.219	0.274	0.246	0.110
TBJE106*050C□#@0*++	E	10	50	0.5	5	50	100	6	9	10	0.165	0.574	0.517	0.230	0.287	0.259	0.115
TBJE106*050L□#@0*++	E	10	50	0.4	5	50	100	6	9	10	0.165	0.642	0.578	0.257	0.257	0.231	0.103
TBJV106*050C□#@0*++	V	10	50	0.65	5	50	100	3			0.250	0.620	0.558	0.248	0.403	0.363	0.161
TBJD156*050C□#@0*++	D	15	50	0.6	7.5	75	150	4	6	6	0.150	0.500	0.450	0.200	0.300	0.270	0.120
TBJE156*050C□#@0*++	E	15	50	0.6	7.5	75	150	8	10	12	0.165	0.524	0.472	0.210	0.315	0.283	0.126
TBJE156*050L□#@0*++	E	15	50	0.25	7.5	75	150	6	9	10	0.165	0.812	0.731	0.325	0.203	0.183	0.081
TBJV226*050C□#@0*++	V	22	50	0.6	11	110	220	8	10	12	0.250	0.645	0.581	0.258	0.387	0.349	0.155
TBJV226*050L□#@0*++	V	22	50	0.39	11	110	220	8	10	12	0.250	0.801	0.721	0.320	0.312	0.281	0.125

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

NOTE: KYOCERA AVX reserves the right to supply a higher voltage rating or tighter tolerance part in the same case size, to the same reliability standards.

Mouser Electronics

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Kyocera AVX:

TBJD336M035LR SB0000	TBJE226K035LR SB0023	TBJE336K025LR SB0023	TBJC107K010LR LB0024
TBJC475K035LR SB0023	TBJD476K016LR SB0000	TBJD476M025CS LC0024	TBJC106K025LR SB0023
TBJC475K035LR SB0000	TBJD107K016LR SB0024	TBJD336M035LR SB0023	TBJD685K035CR SB0023
TBJE686K020BL C9000	TBJA106K010LR SB0023	TBJD476K016LR SB0023	TBJA156J010CB SZ0000
TBJE226M035LR SB0023	TBJE337K010BL C9801	TBJA106K010L BS B0024	TBJB105K035CR SB0000
TBJB106K016CB SB0024	TBJB106M020LR SB0000	TBJB335K010CB SB0900	TBJB336K010CB SB0024
TBJC106K025L BS B0024	TBJC106K035CB LB0024	TBJC107K010L BS B0024	TBJC226K025CB SB0000
TBJC226M025CB SB0000	TBJC475K035L BS B0000	TBJC476M010CR SB0000	TBJD106K025CB SB0000
TBJD106K035CB SB0023	TBJD106K035LR SB0023	TBJD107K010LR SB0023	TBJD156K025CB SB0000
TBJD336K010CB SB0023	TBJD336K010CR SB0000	TBJD336K035CB SB0024	TBJD336K035L BS Z0180
TBJD336M035BL C0024	TBJD337M010L BS C0000	TBJD476K020CB SB0000	TBJD685K050CB SB0000
TBJE107K016BL C9000	TBJE107K016L BS B0023	TBJE226K035L BS B0024	TBJE336K025CB SZ0080
TBJE336K025L BS B0024	TBJE337K010BL C0024	TBJE337K010L BS B0000	TBJE337M010L BS C0005
TBJE477M010L BS B0000	TBJE477M010L BS B0023	TBJV157K020BL B0024	TBJC107K010CR SB0000
TBJD226K035LR SB0023	TBJD337M010LR SC0000	TBJD106K035LR SB0000	TBJV226M050CR SZ0000
TBJV686K025LR SB0023	TBJC475K035LR SB0024	TBJB685K020CR SB0024	TBJD336K020CR SB0024
TBJA106K010LR LC0024	TBJA475K016LR SB0042	TBJB106K016L BS Z0000	TBJB224K050CB SB0000
TBJC105K050CB SB0823	TBJC106K020CB SB0024	TBJC107K006LR SB0024	TBJC107M010LR SB0024
TBJC336K016L BS B0023	TBJC476K016CB SB0024	TBJD106K035CB LB0023	TBJD107K010L BS B0042
TBJD107K016L BS B0000	TBJD107K016L BS B0012	TBJD107K016LR SB0012	TBJD157K010L BS B0000
TBJD336K025LR SZ0024	TBJD476K016L BS B0024	TBJD476M025L BS B0024	TBJD685K050CB SB0023
TBJE106K035L BS B0000	TBJE156M050LR SB0060	TBJE336K035LR SZ0024	TBJE337M010LR SB0024
TBJV227K016L BS B0800	TBJV227M016BL C0023	TBJV476K035L BS Z0000	TBJA224K035CB SB0000
TBJE107K015BL C9000	TBJE477M006L BS Z0000	TBJV226M050CB SZ0000	TBJV477M006LR SB0000
TBJE227K010LR SZ0000	TBJV226M050CB SB0024	TBJV227K016CR SZ0000	TBJE106K050CB SB0012