



**CAPACITOR
COMPETENCE**
since 1958

ALUMINUM ELECTROLYTIC CAPACITORS

ALUMINUM ELECTROLYTIC CAPACITORS · SNAP-IN TYPE

CD 299 PG SERIES

JIANGHAI EUROPE
Electronic Components GmbH

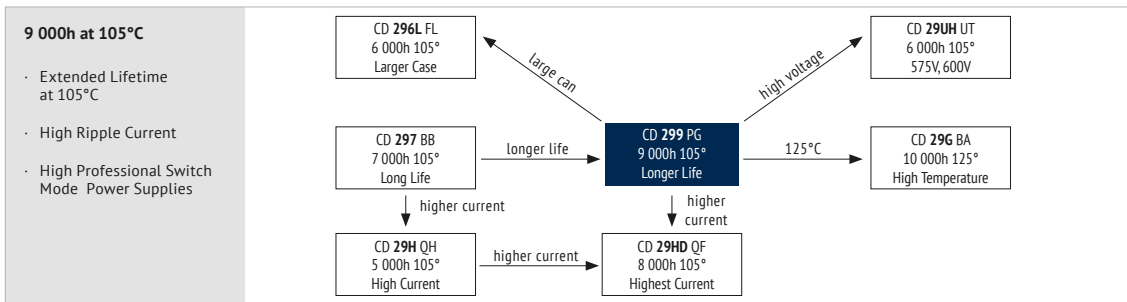


ENGINEERED SOLUTIONS

v2019.1

CD 299 PG SERIES

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ITEM CHARACTERISTICS

Operating Temperature Range (°C)	-40 ~ +105	-25 ~ +105	
Voltage Range (V)	160 - 250	315 - 500	
Capacitance Range (µF)	39 - 2 200		
Capacitance Tolerance (20°C, 120Hz)	± 20%		
Leakage Current	After 5 minutes at 20°C application of rated voltage, leakage current is not more than specified in table.		
Stability at Low Temperature (Impedance Ratio at 120Hz)	Rated Voltage (V)	≤ 250	315 - 500
	$Z_{-25°C} / Z_{+20°C}$	3	8
	$Z_{-40°C} / Z_{+20°C}$	12	-
Fast Charge-Discharge	Please contact Jianghai for an appropriate choice of the capacitor or possible technical adaptations, esp. for applications like: Welding, Photoflash, Servo motors, X-Ray		

The usage at lower temperatures than indicated may be possible. Please contact the Jianghai Europe sales office for approval.

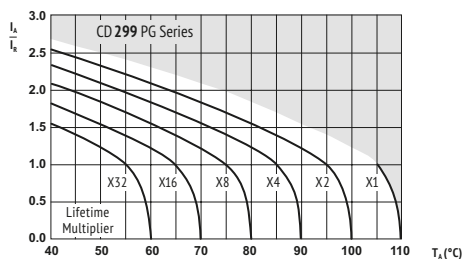
ITEM	USEFUL LIFE		LOAD LIFE	ENDURANCE TEST	SHELF LIFE	
Lifetime	9 000h	> 200 000h	7 000h	7 000h	1 000h	
Leakage Current	Not more than specified value		Not more than specified value	Not more than specified value	Not more than specified value	
Capacitance Change	Within ± 30% of initial value		Within ± 20% of initial value	Within ± 20% of initial value	Within ± 20% of initial value	
Dissipation Factor	Not more than 300% of specified value		Not more than 200% of specified value	Not more than 200% of specified value	Not more than 200% of specified value	
Condition:						
Applied Voltage	U_R	U_R	U_R	U_R	$U_R = 0$	After test: U_R to be applied for 30 min > 24h before measurement
Applied Current	I_R	$1,4 \times I_R$	I_R	$I_R = 0$	$I_R = 0$	
Applied Temperature	105°C	50°C	105°C	105°C IEC 60384	105°C	

MULTIPLIER FOR RIPPLE CURRENT (FREQUENCY COEFFICIENT)

Frequency	50Hz	120Hz	300Hz	1kHz	10kHz	> 40 kHz
Rated Voltage (V)						
160 ~ 250	0,80	1,00	1,17	1,30	1,45	1,50
≥ 315	0,80	1,00	1,16	1,30	1,43	1,45

Multippliers for typical operating conditions.

MULTIPLIER FOR LIFETIME (LIFETIME DIAGRAM)



I_a = actual ripple current at 120Hz,
 I_R = rated ripple current at 120Hz, 105°C
Multiplier of Useful Life as a function of ambient temperature & ripple current load

ENVIRONMENTAL

The products are RoHS, WEEE and REACH compliant. The detailed version please see separate "Environmental Certificates" document or www.jianghai-europe.com

SAFETY FACTOR

This diagram includes a safety margin. In many cases the allowed current capability/lifetime may be increased. For details and approvals please contact the Jianghai Europe sales office.

JIANGHAI EUROPE

Electronic Components GmbH



ENGINEERED SOLUTIONS

Customer specific adaptations needed? Please contact Jianghai Europe GmbH:
TELEFON: +49 (0) 2151 652088-72 | E-MAIL: INFO@JIANGHAI-EUROPE.COM

2/12
v2019.1

CD 299 PG SERIES

ALUMINUM ELECTROLYTIC CAPACITORS · SNAP-IN TYPE

U _{RDC} (Surge Voltage) Code	C _R (μF)	ESR _{max} (mΩ)	ESR _{typ} (mΩ)	tanδ	I _{leak} (mA)	I _{RDC} (Arms)	Size (mm)	ORDER CODE
160 (200) 2C	270	737	516	0,15	0,4	1,10	22 x 25	ECS2CPG271M00ΔΔ2225
	330	603	422	0,15	0,5	1,20	22 x 30	ECS2CPG331M00ΔΔ2230
	390	511	357	0,15	0,6	1,30	25 x 25	ECS2CPG391M00ΔΔ2525
	470	424	296	0,15	0,8	1,40	22 x 35	ECS2CPG471M00ΔΔ2235
		424	296	0,15	0,8	1,40	25 x 30	ECS2CPG471M00ΔΔ2530
	560	356	249	0,15	0,9	1,50	22 x 40	ECS2CPG561M00ΔΔ2240
		356	249	0,15	0,9	1,50	30 x 25	ECS2CPG561M00ΔΔ3025
	680	293	205	0,15	1,1	1,70	22 x 45	ECS2CPG681M00ΔΔ2245
		293	205	0,15	1,1	1,70	25 x 35	ECS2CPG681M00ΔΔ2535
	820	293	205	0,15	1,1	1,70	30 x 30	ECS2CPG681M00ΔΔ3030
		243	170	0,15	1,3	2,00	25 x 40	ECS2CPG821M00ΔΔ2540
	1000	199	139	0,15	1,5	2,20	25 x 45	ECS2CPG102M00ΔΔ2545
		199	139	0,15	1,5	2,20	30 x 35	ECS2CPG102M00ΔΔ3035
	1200	166	116	0,15	1,5	2,30	25 x 50	ECS2CPG122M00ΔΔ2550
		166	116	0,15	1,5	2,30	30 x 40	ECS2CPG122M00ΔΔ3040
	1500	166	116	0,15	1,5	2,30	35 x 35	ECS2CPG122M00ΔΔ3535
		133	93	0,15	1,5	2,50	30 x 45	ECS2CPG152M00ΔΔ3045
	1800	133	93	0,15	1,5	2,50	35 x 40	ECS2CPG152M00ΔΔ3540
		111	77	0,15	1,5	2,70	30 x 50	ECS2CPG182M00ΔΔ3050
	2200	111	77	0,15	1,5	2,70	35 x 45	ECS2CPG182M00ΔΔ3545
2200	91	63	0,15	1,5	2,90	35 x 50	ECS2CPG222M00ΔΔ3550	

U _{RDC} (Surge Voltage) Code	C _R (μF)	ESR _{max} (mΩ)	ESR _{typ} (mΩ)	tanδ	I _{leak} (mA)	I _{RDC} (Arms)	Size (mm)	ORDER CODE
200 (250) 2D	220	905	633	0,15	0,4	1,00	22 x 25	ECS2DPG221M00ΔΔ2225
	270	737	516	0,15	0,5	1,10	22 x 30	ECS2DPG271M00ΔΔ2230
	390	737	516	0,15	0,5	1,10	25 x 25	ECS2DPG271M00ΔΔ2525
		511	357	0,15	0,8	1,30	22 x 35	ECS2DPG391M00ΔΔ2235
	470	511	357	0,15	0,8	1,30	25 x 30	ECS2DPG391M00ΔΔ2530
		511	357	0,15	0,8	1,30	30 x 25	ECS2DPG391M00ΔΔ3025
	560	424	296	0,15	0,9	1,40	22 x 40	ECS2DPG471M00ΔΔ2240
		424	296	0,15	0,9	1,40	25 x 35	ECS2DPG471M00ΔΔ2535
	680	424	296	0,15	0,9	1,40	30 x 30	ECS2DPG471M00ΔΔ3030
		356	249	0,15	1,1	1,50	22 x 45	ECS2DPG561M00ΔΔ2245
	820	293	205	0,15	1,4	1,70	25 x 40	ECS2DPG681M00ΔΔ2540
		293	205	0,15	1,4	1,70	30 x 35	ECS2DPG681M00ΔΔ3035
	1000	243	170	0,15	1,5	2,00	25 x 50	ECS2DPG821M00ΔΔ2550
		243	170	0,15	1,5	2,00	30 x 40	ECS2DPG821M00ΔΔ3040
	1200	243	170	0,15	1,5	2,00	35 x 30	ECS2DPG821M00ΔΔ3530
		199	139	0,15	1,5	2,20	30 x 45	ECS2DPG102M00ΔΔ3045
	1500	199	139	0,15	1,5	2,20	35 x 35	ECS2DPG102M00ΔΔ3535
		166	116	0,15	1,5	2,30	30 x 50	ECS2DPG122M00ΔΔ3050
	1500	166	116	0,15	1,5	2,30	35 x 40	ECS2DPG122M00ΔΔ3540
	1500	133	93	0,15	1,5	2,50	35 x 50	ECS2DPG152M00ΔΔ3550

U _{RDC} (Surge Voltage) Code	C _R (μF)	ESR _{max} (mΩ)	ESR _{typ} (mΩ)	tanδ	I _{leak} (mA)	I _{RDC} (Arms)	Size (mm)	ORDER CODE
250 (300) 2E	180	1106	774	0,15	0,5	0,90	22 x 30	ECS2EPG181M00ΔΔ2230
	220	905	633	0,15	0,6	1,00	25 x 25	ECS2EPG221M00ΔΔ2525
	270	737	516	0,15	0,7	1,10	22 x 35	ECS2EPG271M00ΔΔ2235
		737	516	0,15	0,7	1,10	25 x 30	ECS2EPG271M00ΔΔ2530
	330	737	516	0,15	0,7	1,10	30 x 25	ECS2EPG271M00ΔΔ3025
		603	422	0,15	0,8	1,20	22 x 40	ECS2EPG331M00ΔΔ2240
	390	603	422	0,15	0,8	1,20	25 x 35	ECS2EPG331M00ΔΔ2535
		511	357	0,15	1,0	1,30	22 x 45	ECS2EPG391M00ΔΔ2245
	470	511	357	0,15	1,0	1,30	25 x 40	ECS2EPG391M00ΔΔ2540
		511	357	0,15	1,0	1,30	30 x 30	ECS2EPG391M00ΔΔ3030
	560	424	296	0,15	1,2	1,40	25 x 45	ECS2EPG471M00ΔΔ2545
		424	296	0,15	1,2	1,40	30 x 35	ECS2EPG471M00ΔΔ3035
	680	424	296	0,15	1,2	1,40	35 x 30	ECS2EPG471M00ΔΔ3530
		356	249	0,15	1,4	1,50	25 x 50	ECS2EPG561M00ΔΔ2550
	820	293	205	0,15	1,5	1,70	30 x 45	ECS2EPG681M00ΔΔ3045
		293	205	0,15	1,5	1,70	35 x 35	ECS2EPG681M00ΔΔ3535
	1000	243	170	0,15	1,5	2,00	30 x 50	ECS2EPG821M00ΔΔ3050
		243	170	0,15	1,5	2,00	35 x 40	ECS2EPG821M00ΔΔ3540
	1200	199	139	0,15	1,5	2,20	35 x 45	ECS2EPG102M00ΔΔ3545
	1200	166	116	0,15	1,5	2,30	35 x 50	ECS2EPG122M00ΔΔ3550

U _{RDC} (Surge Voltage) Code	C _R (μF)	ESR _{max} (mΩ)	ESR _{typ} (mΩ)	tanδ	I _{leak} (mA)	I _{RDC} (Arms)	Size (mm)	ORDER CODE
315 (365) 2F	82	2427	1335	0,15	0,3	0,64	22 x 25	ECS2FPG820M00ΔΔ2225
	100	1990	1095	0,15	0,3	0,69	22 x 30	ECS2FPG101M00ΔΔ2230
	120	1658	912	0,15	0,4	0,75	25 x 25	ECS2FPG121M00ΔΔ2525
	150	1327	730	0,15	0,5	0,82	22 x 35	ECS2FPG151M00ΔΔ2235
		1327	730	0,15	0,5	0,82	25 x 30	ECS2FPG151M00ΔΔ2530
	180	1327	730	0,15	0,5	0,82	30 x 25	ECS2FPG151M00ΔΔ3025
		1106	608	0,15	0,6	0,90	22 x 40	ECS2FPG181M00ΔΔ2240
	220	1106	608	0,15	0,6	0,90	25 x 35	ECS2FPG181M00ΔΔ2535
		905	498	0,15	0,7	1,00	22 x 45	ECS2FPG221M00ΔΔ2245
	270	905	498	0,15	0,7	1,00	25 x 40	ECS2FPG221M00ΔΔ2540
		905	498	0,15	0,7	1,00	30 x 30	ECS2FPG221M00ΔΔ3030
	330	737	406	0,15	0,9	1,10	25 x 45	ECS2FPG271M00ΔΔ2545
		737	406	0,15	0,9	1,10	30 x 35	ECS2FPG271M00ΔΔ3035
	390	737	406	0,15	0,9	1,10	35 x 30	ECS2FPG271M00ΔΔ3530
		603	332	0,15	1,0	1,20	25 x 50	ECS2FPG331M00ΔΔ2550
	470	603	332	0,15	1,0	1,20	30 x 40	ECS2FPG331M00ΔΔ3040
		511	281	0,15	1,2	1,30	30 x 45	ECS2FPG391M00ΔΔ3045
	560	511	281	0,15	1,2	1,30	35 x 35	ECS2FPG391M00ΔΔ3535
		424	233	0,15	1,5	1,40	30 x 50	ECS2FPG471M00ΔΔ3050
	680	424	233	0,15	1,5	1,40	35 x 40	ECS2FPG471M00ΔΔ3540
680	356	196	0,15	1,5	1,50	35 x 45	ECS2FPG561M00ΔΔ3545	
680	293	161	0,15	1,5	1,70	35 x 50	ECS2FPG681M00ΔΔ3550	

U _{RDC} (Surge Voltage) Code	C _R (μF)	ESR _{max} (mΩ)	ESR _{typ} (mΩ)	tanδ	I _{leak} (mA)	I _{RDC} (Arms)	Size (mm)	ORDER CODE
350 (400) 2V	82	2427	1335	0,15	0,3	0,64	22 x 25	ECS2VPG820M00ΔΔ2225
	100	1990	1095	0,15	0,4	0,69	22 x 30	ECS2VPG101M00ΔΔ2230
	120	1658	912	0,15	0,4	0,69	25 x 25	ECS2VPG101M00ΔΔ2525
	150	1658	912	0,15	0,4	0,75	22 x 35	ECS2VPG121M00ΔΔ2235
		1658	912	0,15	0,4	0,75	25 x 30	ECS2VPG121M00ΔΔ2530
	180	1327	730	0,15	0,5	0,82	22 x 40	ECS2VPG151M00ΔΔ2240
		1327	730	0,15	0,5	0,82	30 x 25	ECS2VPG151M00ΔΔ3025
	220	1106	608	0,15	0,6	0,90	22 x 45	ECS2VPG181M00ΔΔ2245
		1106	608	0,15	0,6	0,90	25 x 35	ECS2VPG181M00ΔΔ2535
	270	1106	608	0,15	0,6	0,90	30 x 30	ECS2VPG181M00ΔΔ3030
		905	498	0,15	0,8	1,00	22 x 50	ECS2VPG221M00ΔΔ2250
	330	905	498	0,15	0,8	1,00	25 x 40	ECS2VPG221M00ΔΔ2540
		737	406	0,15	0,9	1,10	25 x 50	ECS2VPG271M00ΔΔ2550
	390	737	406	0,15	0,9	1,10	30 x 35	ECS2VPG271M00ΔΔ3035
		737	406	0,15	0,9	1,10	35 x 30	ECS2VPG271M00ΔΔ3530
	470	603	332	0,15	1,2	1,20	30 x 45	ECS2VPG331M00ΔΔ3045
		603	332	0,15	1,2	1,20	35 x 35	ECS2VPG331M00ΔΔ3535
	560	511	281	0,15	1,4	1,30	30 x 50	ECS2VPG391M00ΔΔ3050
		511	281	0,15	1,4	1,30	35 x 40	ECS2VPG391M00ΔΔ3540
	560	356	196	0,15	1,5	1,50	35 x 50	ECS2VPG561M00ΔΔ3550

U _{RDC} (Surge Voltage) Code	C _R (μF)	ESR _{max} (mΩ)	ESR _{typ} (mΩ)	tanδ	I _{leak} (mA)	I _{RDC} (Arms)	Size (mm)	ORDER CODE
400 (450) 2G	56	3553	1955	0,15	0,2	0,51	22 x 25	ECS2GPG560M00ΔΔ2225
	68	2926	1610	0,15	0,3	0,56	22 x 30	ECS2GPG680M00ΔΔ2230
	82	2926	1610	0,15	0,3	0,56	25 x 25	ECS2GPG680M00ΔΔ2525
		2427	1335	0,15	0,3	0,64	22 x 35	ECS2GPG820M00ΔΔ2235
	100	1990	1095	0,15	0,4	0,69	25 x 30	ECS2GPG101M00ΔΔ2530
		1658	912	0,15	0,5	0,75	22 x 40	ECS2GPG121M00ΔΔ2240
	120	1658	912	0,15	0,5	0,75	25 x 35	ECS2GPG121M00ΔΔ2535
		1658	912	0,15	0,5	0,75		

CD 299 PG SERIES

ALUMINUM ELECTROLYTIC CAPACITORS · SNAP-IN TYPE

U _{RDC} (Surge Voltage) Code (V)	C _r Rated Capacitance (µF)	ESR _{max}	ESR _{typ}	tanδ	I _{leak} Leakage Current (mA)	I _{RAC} Rated Ripple Current 105°C 120Hz (Ams)	Size øD x L (mm)	ORDER CODE
		Equivalent Series Resistance 20°C 120Hz (mΩ)	Equivalent Series Resistance 20°C 120Hz (mΩ)					
450 (500) 2W	39	6802	3062	0,20	0,2	0,37	22 x 25	ECS2WPG390M00ΔΔ2225
	47	5644	2541	0,20	0,2	0,40	22 x 30	ECS2WPG470M00ΔΔ2230
	56	4737	2133	0,20	0,3	0,47	22 x 35	ECS2WPG560M00ΔΔ2235
		4737	2133	0,20	0,3	0,47	25 x 25	ECS2WPG560M00ΔΔ2525
	68	3901	1756	0,20	0,3	0,53	22 x 40	ECS2WPG680M00ΔΔ2240
		3901	1756	0,20	0,3	0,53	25 x 30	ECS2WPG680M00ΔΔ2530
	82	3235	1456	0,20	0,4	0,56	22 x 45	ECS2WPG820M00ΔΔ2245
		3235	1456	0,20	0,4	0,56	25 x 35	ECS2WPG820M00ΔΔ2535
	100	2653	1194	0,20	0,5	0,64	22 x 50	ECS2WPG101M00ΔΔ2250
		2653	1194	0,20	0,5	0,64	25 x 40	ECS2WPG101M00ΔΔ2540
	120	2653	1194	0,20	0,5	0,64	30 x 30	ECS2WPG101M00ΔΔ3030
		2211	995	0,20	0,5	0,72	25 x 45	ECS2WPG121M00ΔΔ2545
	150	1769	796	0,20	0,7	0,79	25 x 50	ECS2WPG151M00ΔΔ2550
		1769	796	0,20	0,7	0,79	30 x 40	ECS2WPG151M00ΔΔ3040
	180	1769	796	0,20	0,7	0,79	35 x 30	ECS2WPG151M00ΔΔ3530
		1474	664	0,20	0,8	0,87	30 x 45	ECS2WPG181M00ΔΔ3045
	220	1474	664	0,20	0,8	0,87	35 x 35	ECS2WPG181M00ΔΔ3535
		1206	543	0,20	1,0	1,00	30 x 50	ECS2WPG221M00ΔΔ3050
	270	1206	543	0,20	1,0	1,00	35 x 40	ECS2WPG221M00ΔΔ3540
		983	442	0,20	1,2	1,19	35 x 45	ECS2WPG271M00ΔΔ3545
330	804	362	0,20	1,5	1,38	35 x 50	ECS2WPG331M00ΔΔ3550	

500 (550) 2H	47	5644	2823	0,20	0,2	0,41	22 x 30	ECS2HPG470M00ΔΔ2230
	56	4737	2370	0,20	0,3	0,47	22 x 30	ECS2HPG560M00ΔΔ2230
	68	3901	1951	0,20	0,3	0,54	22 x 35	ECS2HPG680M00ΔΔ2235
		3901	1951	0,20	0,3	0,54	25 x 30	ECS2HPG680M00ΔΔ2530
	82	3235	1618	0,20	0,4	0,62	22 x 40	ECS2HPG820M00ΔΔ2240
		3235	1618	0,20	0,4	0,62	25 x 35	ECS2HPG820M00ΔΔ2535
	100	2653	1327	0,20	0,5	0,67	22 x 45	ECS2HPG101M00ΔΔ2245
		2653	1327	0,20	0,5	0,67	25 x 40	ECS2HPG101M00ΔΔ2540
	120	2653	1327	0,20	0,5	0,67	30 x 30	ECS2HPG101M00ΔΔ3030
		2211	1106	0,20	0,6	0,77	22 x 50	ECS2HPG121M00ΔΔ2250
	150	2211	1106	0,20	0,6	0,74	25 x 40	ECS2HPG121M00ΔΔ2540
		2211	1106	0,20	0,6	0,77	30 x 35	ECS2HPG121M00ΔΔ3035
	180	2211	1106	0,20	0,6	0,80	35 x 30	ECS2HPG121M00ΔΔ3530
		1769	885	0,20	0,8	0,82	25 x 45	ECS2HPG151M00ΔΔ2545
	220	1769	885	0,20	0,8	0,85	30 x 40	ECS2HPG151M00ΔΔ3040
		1769	885	0,20	0,8	0,85	35 x 35	ECS2HPG151M00ΔΔ3535
	270	1474	737	0,20	0,9	0,98	25 x 50	ECS2HPG181M00ΔΔ2550
		1474	737	0,20	0,9	1,01	30 x 45	ECS2HPG181M00ΔΔ3045
	330	1206	603	0,20	1,1	1,12	30 x 50	ECS2HPG221M00ΔΔ3050
		1206	603	0,20	1,1	1,12	35 x 40	ECS2HPG221M00ΔΔ3540
450	983	492	0,20	1,4	1,25	30 x 50	ECS2HPG271M00ΔΔ3050	
	983	492	0,20	1,4	1,25	35 x 45	ECS2HPG271M00ΔΔ3545	
500	804	402	0,20	1,5	1,36	35 x 50	ECS2HPG331M00ΔΔ3550	



ORDER CODE SNAP-IN TYPE

EC	S	2G	QC	221	M	T6	P2	2535	-	JExxxx
Technology	Terminal Type	Rated Voltage Code	Series Code	Capacitance Code	Capacitance Tolerance	Terminal Style	Terminal / Pitch	Dimension (mm)	Material Code	for Specials only
EC Electrolytic Capacitor	Snap-In S	6,3V OJ	CD 293 BZ	0,1 OR1	±20% M	4,0mm Pin Length T/L4	2 Pin P2	22x40 2240	Standard -	
		10V 1A	CD 294 BW	0,47 R47	±10% K	6,3mm Pin Length T/L6	3 Pin P3	30x45 3045	PVC V	
		16V 1C	CD 295 BC	1,0 O10	+30/-10% Q	Soldering Pin S4	4 Pin P4	35x80 3580	PET E	
		20V 1D	CD 295S BS	2,2 2R2	+20/-0% R	on request: alternative pin types	5 Pin P5	45x100 45100		
		25V 1E	CD 296 KC	100 101	±15% L		6 Pin P6	50x105 50105		
		35V 1V	CD 296L FL	1 000 102	+20/-10% V	■ = preferred				
		40V 1G	CD 297 BB	10 000 103						
		50V 1H	CD 299 PG							
		63V 1J	CD 29C QC							
		80V 1K	CD 29D HR							
		100V 2A	CD 29G BA							
		125V 2B	CD 29H QH							
		160V 2C	CD 29HD QF							
		180V 2K	CD 29L QL							
		200V 2D	CD 29U CU							
		250V 2E	CD 29UH UT							
		385V 2J	CD 840 ZQ							
		400V 2G	CD 891 ZI							
		415V 2P	CD 892 ZL							
		420V 2X	CD 895 ZK							
		450V 2W								
		500V 2H								
		550V 2Y								
		575V 2Z								
		600V 2S								
		630V 1J								

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