

TYPE NUMBER	MFR	APP	CMP	GBP MIN	SLEW RATE MIN	V <sub>S+</sub> MAX	V <sub>S-</sub> MAX	T <sub>DB</sub> MAX	A <sub>VOL</sub> MIN	V <sub>IO</sub> MAX	I <sub>B</sub> MAX	I <sub>IO</sub> MAX	P <sub>TOT</sub> MAX	I <sub>OUT</sub> MIN	V <sub>OUT</sub> MIN	V <sub>ICM</sub> MAX	V <sub>IDF</sub> MAX	dV <sub>IO</sub> /dT MAX	P <sub>O</sub> MAX	I <sub>O</sub> MAX	CM RR MIN	PS RR MIN	R <sub>IN</sub> MIN
TDB0124	THF	QGK	INT	.	.	+16V	-16V	70C	88dB	5MV	250NA	50NA	900MWF	.	.	16V	16V	35UV/C	.	2MA	65dB	65dB	.
TDB0791-DP	THF	HPO	INT	.	.	+18V	-18V	70C	86dB	6MV	500NA	200NA	500MWF	1A	11V	15V	30V	.	.	25MA	70dB	76dB	300K
TDB0791-EP	THF	HPO	INT	.	.	+18V	-18V	70C	86dB	6MV	500NA	200NA	15WH	1A	11V	15V	30V	.	.	25MA	70dB	76dB	300K
TDB0791-KM	THF	HPO	INT	.	.	+18V	-18V	70C	86dB	6MV	500NA	200NA	15WC	1A	11V	15V	30V	.	.	25MA	70dB	76dB	300K
TDC0118-CM	TFH	XSR	INT	.	50V/US	+18V	-18V	125C	94dB	6MV	300NA	50NA	500MWF	7MA	12V	15V	1V	.	.	8MA	80dB	70dB	1M
TDC0119-CM	THF	DCP	INT	.	.	+18V	-18V	125C	80dB	4MV	500NA	75NA	500MWF	6MA	.	15V	5V	.	.	12MA	.	.	.
TDC0119-DC	THF	DCP	INT	.	.	+18V	-18V	125C	80dB	4MV	500NA	75NA	500MWF	6MA	.	15V	5V	.	.	12MA	.	.	.
TDC0124	THF	QGK	INT	.	.	+16V	-16V	125C	94dB	7MV	150NA	30NA	900MWF	.	.	16V	16V	35UV/C	.	2MA	70dB	65dB	.
TDC0791-KM	THF	HPO	INT	.	.	+22V	-22V	125C	94dB	5MV	500NA	200NA	15WC	1A	11V	15V	30V	.	.	25MA	70dB	76dB	300K
TDC5711	TRU	DCP	EXT	.	.	+14V	-7V	70C	58dB	5MV	100uA	15uA	300MWF	5MA	1.7V	7V	5V	.	300MW	11MA	.	.	.
TDC5711F	TRU	DCP	EXT	.	.	+14V	-7V	70C	58dB	5MV	100uA	15uA	300MWF	5MA	1.7V	7V	5V	.	300MW	11MA	.	.	.
TDC5711P	TRU	DCP	EXT	.	.	+14V	-7V	70C	58dB	5MV	100uA	15uA	300MWF	5MA	1.7V	7V	5V	.	300MW	11MA	.	.	.
TDE0118-CM	TFH	XSR	INT	.	50V/US	+18V	-18V	85C	88dB	10MV	600NA	200NA	500MWF	5MA	12V	15V	1V	.	.	10MA	70dB	65dB	1M
TDE0119-CM	THF	DCP	INT	.	.	+18V	-18V	85C	80dB	4MV	500NA	75NA	500MWF	6MA	.	15V	5V	.	.	12MA	.	.	.
TDE0119-DP	THF	DCP	INT	.	.	+18V	-18V	85C	80dB	4MV	500NA	75NA	500MWF	6MA	.	15V	5V	.	.	12MA	.	.	.
TDE0124	THF	QGK	INT	.	.	+16V	-16V	85C	94dB	5MV	150NA	30NA	900MWF	.	.	16V	16V	35UV/C	.	2MA	70dB	65dB	.
TDF2902DP	THG	QGK	INT	.	.	+16V	-16V	85C	88dB	7MV	250NA	50NA	570MWF	.	.	16V	16V	35UV/C	.	2MA	50dB	50dB	.
TOA101AE	TRU	GPU	EXT	.	.	+22V	-22V	125C	94dB	2MV	75NA	10NA	500MWF	5MA	12V	15V	30V	15UV/C	.	3MA	80dB	80dB	1.5M
TOA101AF	TRU	GPU	EXT	.	.	+22V	-22V	125C	94dB	2MV	75NA	10NA	500MWF	5MA	12V	15V	30V	15UV/C	.	3MA	80dB	80dB	1.5M
TOA101AJ	TRU	GPU	EXT	.	.	+22V	-22V	125C	94dB	2MV	75NA	10NA	500MWF	5MA	12V	15V	30V	15UV/C	.	3MA	80dB	80dB	1.5M
TOA101AV	TRU	GPU	EXT	.	.	+22V	-22V	125C	94dB	2MV	75NA	10NA	500MWF	5MA	12V	15V	30V	15UV/C	.	3MA	80dB	80dB	1.5M
TOA201AE	TRU	GPU	EXT	.	.	+22V	-22V	85C	94dB	2MV	75NA	10NA	500MWF	5MA	12V	15V	30V	15UV/C	.	3MA	80dB	80dB	500K
TOA201AF	TRU	GPU	EXT	.	.	+22V	-22V	85C	94dB	2MV	75NA	10NA	500MWF	5MA	12V	15V	30V	15UV/C	.	3MA	80dB	80dB	500K
TOA201AJ	TRU	GPU	EXT	.	.	+22V	-22V	85C	94dB	2MV	75NA	10NA	500MWF	5MA	12V	15V	30V	15UV/C	.	3MA	80dB	80dB	500K
TOA201AV	TRU	GPU	EXT	.	.	+22V	-22V	85C	94dB	2MV	75NA	10NA	500MWF	5MA	12V	15V	30V	15UV/C	.	3MA	80dB	80dB	500K
TOA301AE	TRU	GPU	EXT	.	.	+18V	-18V	70C	88dB	7.5MV	250NA	50NA	500MWF	5MA	12V	15V	30V	30UV/C	.	3MA	70dB	70dB	500K
TOA301AF	TRU	GPU	EXT	.	.	+18V	-18V	70C	88dB	7.5MV	250NA	50NA	500MWF	5MA	12V	15V	30V	30UV/C	.	3MA	70dB	70dB	500K
TOA301AJ	TRU	GPU	EXT	.	.	+18V	-18V	70C	88dB	7.5MV	250NA	50NA	500MWF	5MA	12V	15V	30V	30UV/C	.	3MA	70dB	70dB	500K
TOA301AV	TRU	GPU	EXT	.	.	+18V	-18V	70C	88dB	7.5MV	250NA	50NA	500MWF	5MA	12V	15V	30V	30UV/C	.	3MA	70dB	70dB	500K
TOA1709E	TRU	GPU	EXT	.	.	+18V	-18V	125C	88dB	5MV	500NA	200NA	330MWF	5MA	12V	10V	5V	15UV/C	165MW	.	70dB	76dB	150K
TOA1709F	TRU	GPU	EXT	.	.	+18V	-18V	125C	88dB	5MV	500NA	200NA	330MWF	5MA	12V	10V	5V	15UV/C	165MW	.	70dB	76dB	150K
TOA1709J	TRU	GPU	EXT	.	.	+18V	-18V	125C	88dB	5MV	500NA	200NA	330MWF	5MA	12V	10V	5V	15UV/C	165MW	.	70dB	76dB	150K
TOA1709P	TRU	GPU	EXT	.	.	+18V	-18V	125C	88dB	5MV	500NA	200NA	300MWF	5MA	12V	10V	5V	15UV/C	165MW	.	70dB	76dB	150K
TOA1709V	TRU	GPU	EXT	.	.	+18V	-18V	125C	88dB	5MV	500NA	200NA	300MWF	5MA	12V	10V	5V	15UV/C	165MW	.	70dB	76dB	150K
TOA1741E	TRU	GPK	INT	.	0.1V/US	+22V	-22V	125C	94dB	5MV	500NA	200NA	500MWF	5MA	12V	15V	30V	.	85MW	3MA	70dB	76dB	300K
TOA1741F	TRU	GPK	INT	.	0.1V/US	+22V	-22V	125C	94dB	5MV	500NA	200NA	500MWF	5MA	12V	15V	30V	.	85MW	3MA	70dB	76dB	300K
TOA1741J	TRU	GPK	INT	.	0.1V/US	+22V	-22V	125C	94dB	5MV	500NA	200NA	500MWF	5MA	12V	15V	30V	.	85MW	3MA	70dB	76dB	300K
TOA1741P	TRU	GPK	INT	.	0.1V/US	+22V	-22V	125C	94dB	5MV	500NA	200NA	500MWF	5MA	12V	15V	30V	.	85MW	3MA	70dB	76dB	300K
TOA1741V	TRU	GPK	INT	.	0.1V/US	+22V	-22V	125C	94dB	5MV	500NA	200NA	500MWF	5MA	12V	15V	30V	.	85MW	3MA	70dB	76dB	300K
TOA1741WF	TRU	GPU	EXT	.	0.1V/US	+22V	-22V	125C	94dB	5MV	500NA	200NA	500MWF	5MA	12V	15V	30V	.	85MW	.	70dB	76dB	300K
TOA1741WP	TRU	GPU	EXT	.	0.1V/US	+22V	-22V	125C	94dB	5MV	500NA	200NA	500MWF	5MA	12V	15V	30V	.	85MW	.	70dB	76dB	300K
TOA1741WP	TRU	GPU	EXT	.	0.1V/US	+22V	-22V	125C	94dB	5MV	500NA	200NA	500MWF	5MA	12V	15V	30V	.	85MW	.	70dB	76dB	300K
TOA1747AV	TRU	DGK	INT	.	0.1V/US	+22V	-22V	125C	94dB	5MV	500NA	200NA	800MWF	5MA	12V	15V	30V	.	85MW	3MA	70dB	76dB	300K
TOA1747BV	TRU	DGK	INT	.	0.1V/US	+22V	-22V	125C	94dB	5MV	500NA	200NA	800MWF	5MA	12V	15V	30V	.	85MW	3MA	70dB	76dB	300K
TOA1747J	TRU	DGK	INT	.	0.1V/US	+22V	-22V	125C	94dB	5MV	500NA	200NA	800MWF	5MA	12V	15V	30V	.	85MW	3MA	70dB	76dB	300K
TOA1748E	TRU	GPU	EXT	.	0.1V/US	+22V	-22V	125C	94dB	5MV	500NA	200NA	500MWF	5MA	12V	15V	30V	.	85MW	3MA	70dB	76dB	300K
TOA1748F	TRU	GPU	EXT	.	0.1V/US	+22V	-22V	125C	94dB	5MV	500NA	200NA	500MWF	5MA	12V	15V	30V	.	85MW	3MA	70dB	76dB	300K
TOA1748J	TRU	GPU	EXT	.	0.1V/US	+22V	-22V	125C	94dB	5MV	500NA	200NA	500MWF	5MA	12V	15V	30V	.	85MW	3MA	70dB	76dB	300K
TOA1748P	TRU	GPU	EXT	.	0.1V/US	+22V	-22V	125C	94dB	5MV	500NA	200NA	500MWF	5MA	12V	15V	30V	.	85MW	3MA	70dB	76dB	300K
TOA1748V	TRU	GPU	EXT	.	0.1V/US	+22V	-22V	125C	94dB	5MV	500NA	200NA	500MWF	5MA	12V	15V	30V	.	85MW	3MA	70dB	76dB	300K
TOA1809E	TRU	DGU	EXT	.	.	+18V	-18V	125C	88dB	5MV	500NA	200NA	415MWF	5MA	12V	10V	5V	15UV/C	160MW	.	70dB	76dB	150K
TOA1809J	TRU	DGU	EXT	.	.	+18V	-18V	125C	88dB	5MV	500NA	200NA	500MWF	5MA	12V	10V	5V	15UV/C	160MW	.	70dB	76dB	150K
TOA2709E	TRU	GPU	EXT	.	.	+18V	-18V	70C	84dB	7.5MV	1.5uA	0.5uA	115MWF	5MA	12V	10V	5V	.	200MW	.	65dB	74dB	50K
TOA2709F	TRU	GPU	EXT	.	.	+18V	-18V	70C	84dB	7.5MV	1.5uA	0.5uA	115MWF	5MA	12V	10V	5V	.	200MW	.	65dB	74dB	50K
TOA2709J	TRU	GPU	EXT	.	.	+18V	-18V	70C	84dB	7.5MV	1.5uA	0.5uA	115MWF	5MA	12V	10V	5V	.	200MW	.	65dB	74dB	50K
TOA2709P	TRU	GPU	EXT	.	.	+18V	-18V	70C	84dB	7.5MV	1.5uA	0.5uA	115MWF	5MA	12V	10V	5V	.	200MW	.	65dB	74dB	50K
TOA2709V	TRU	GPU	EXT	.	.	+18V	-18V	70C	84dB	7.5MV	1.5uA	0.5uA	300MWF	5MA	12V	10V	5V	.	200MW	.	65dB	74dB	50K
TOA2																							

For detailed explanations of column heading notations, see App. A.

Also for ready references the more important abbreviations used in the column headings are listed below:

LEFT HAND PAGE

APP = application  
(codes at APP.E.)

CMRR = common mode rejection ratio

CMP = compensation (frequency)

$dV_{off}/dT$  = input offset voltage temperature drift

GBP = gain bandwidth product

$I_B$  = input bias current

$I_{off}$  = input bias offset current

$I_Q$  = quiescent supply current

MFR = manufacturer (codes at App.C.)

$P_Q$  = quiescent power consumer

PSRR = power supply rejection ratio

$V_{ICM}$  = common mode input voltage rating

$V_{diff}$  = differential input voltage rating

$V_{off}$  = input offset voltage

$V_S$  = dc supply voltage

RIGHT HAND PAGE

Lead out coding summary (details at APP.G.) for different cases (APP.F.)

A = gain adjust

B = bias adjust

C = case

E- = inverting input

E+ = non-inverting input

F.F\* = input frequency compensation

G = ground

J = high level input

K = output, open collector

L = output, open emitter

M = metal case

N = not connected

O = special terminal

R,R\* = outputs

S = strobe

T,T\* = offset balance

V+ = +ve dc supply

V- = -ve dc supply

W = guard ring

X = blank position, no lead

+ + = +ve supplementary dc supply

- - = -ve supplementary dc supply

$\delta, \delta^*$  = output frequency compensation

CASE (APP.F.)	LD 1	LD 2	LD 3	LD 4	LD 5	LD 6	LD 7	LD 8	LD 9	LD 10	LD 11	LD 12	LD 13	LD 14	LD 15	LD 16	EUROPE SUBSTI-TUTE	USA SUBSTI-TUTE	I S	TYPE NUMBER
DIL-14/1P	R1	E-1	E+1	V+	E+2	E-2	R2	R3	E-3	E+3	G	E+4	E-4	R4	.	.	MLM324J	LM324D	0	TDB0124
DIL-14/1P	F	Q	V+	V+	R	N	V-	V-	$\emptyset$	T	N	T*	E-	N	.	.	.	.	0	TDB0791-DP
HIL-14/1P	F	Q	V+	V+	R	N	V-	V-	$\emptyset$	T	N	T*	E-	N	.	.	.	.	0	TDB0791-EP
T03-10/2M	R	V+	Q	F	E+	E-	T	T*	V-	M	.	.	.	.	.	.	.	UA791KC	0	TDB0791-KM
T05-8/1M	T*F	E-	E+	V-	F*	R	V+	$\emptyset$	.	.	.	.	.	.	.	.	SF.C2118M	LM218H	0	TDC0118-CM
T05-10/1M	R1	G1	E+1	E-1	V-	R2	G2	E+2	E-2	V+	.	.	.	.	.	.	.	LM119H	0	TDC0119-CM
DIL-14/1C	N	N	G1	E+1	E-1	V-	R2	G2	E+2	E-2	V+	R1	N	N	.	.	.	LM119D	0	TDC0119-DC
DIL-14/1P	R1	E-1	E+1	V+	E+2	E-2	R2	R3	E-3	E+3	G	E+4	E-4	R4	.	.	MLM124D	LM124D	0	TDC0124
T03-10/2M	R	V+	Q	F	E+	E-	T	T*	$\emptyset$	V-	M	.	.	.	.	.	.	UA791KM	0	TDC0791-KM
T05-10/1M	G	S1	E-1	E+1	V-	E+2	E-2	S2	R	V+	.	.	.	.	.	.	SFC2711C	UA711HC	0	TDC5711
FLP-10/3C	E-1	E+2	V-	E+2	E-2	S2	R	V+	G	S1	.	.	.	.	.	.	SFC2711PM	UA711FM	0	TDC5711F
DIL-14/1P	N	E-2	E+2	V-	E+2	E-2	N	N	S2	R	V+	G	S1	N	.	.	SFC2711EC	UA711DC	0	TDC5711P
T05-8/1M	T*F	E-	E+	V-	F*	R	V+	$\emptyset$	E+2	.	.	.	.	.	.	.	SF.C2218	LM118H	0	TDE0118-CM
T05-10/1M	R1	G1	E+1	E-1	V-	R2	G2	E+2	E-2	V+	.	.	.	.	.	.	.	LM219H	0	TDE0119-CM
DIL-14/1C	N	N	G1	E+1	E-1	V-	R2	G2	E+2	E-2	V+	R1	N	N	.	.	.	LM219D	0	TDE0119-DP
DIL-14/1P	R1	E-1	E+1	V+	E+2	E-2	R2	R3	E-3	E+3	G	E+4	E-4	R4	.	.	SG224J	LM224D	0	TDE0124
DIL-14/1P	R1	E-1	E+1	V+	E+2	E-2	R2	R3	E-3	E+3	G	E+4	E-4	R4	.	.	MLM2902P	LM2902J	0	TDF2902DP
DIL-14/1P	N	N	FT	E-	E+	V-	N	N	T*	R	V+	F*	N	N	.	.	UA101AD	LM101AJ14	0	TOA101AE
FLP-10/3C	N	FT	E-	E+	V-	T*	R	V+	F*	N	.	.	.	.	.	.	SFC2101APM	LM101AF	0	TOA101AF
DIL-14/1C	N	N	FT	E-	E+	V-	N	N	T*	R	V+	F*	N	N	.	.	UA101AD	LM101AJ14	0	TOA101AJ
T05-8/1M	FT	E-	E+	V-M	T*	R	V+	F*	.	.	.	.	.	.	.	.	SFC2101A	LM101AH	0	TOA101AV
DIL-14/1P	N	N	FT	E-	E+	V-	N	N	T*	R	V+	F*	N	N	.	.	UA201D	LM201AJ14	0	TOA201AE
FLP-10/3C	N	FT	E-	E+	V-	T*	R	V+	F*	N	.	.	.	.	.	.	SFC2201APT	LM201AF	0	TOA201AF
DIL-14/1C	N	N	FT	E-	E+	V-	N	N	T*	R	V+	F*	N	N	.	.	UA201AD	LM201AJ14	0	TOA201AJ
T05-8/1M	FT	E-	E+	V-M	T*	R	V+	F*	.	.	.	.	.	.	.	.	SFC2101A	LM201AH	0	TOA201AV
DIL-14/1P	N	N	FT	E-	E+	V-	N	N	T*	R	V+	F*	N	N	.	.	UA301AD	LM301AJ14	0	TOA301AE
FLP-10/3C	N	FT	E-	E+	V-	T*	R	V+	F*	N	.	.	.	.	.	.	SFC2201APM	LM201AF	0	TOA301AF
DIL-14/1C	N	N	FT	E-	E+	V-	N	N	T*	R	V+	F*	N	N	.	.	UA301AD	LM301AJ14	0	TOA301AJ
T05-8/1M	FT	E-	E+	V-M	T*	R	V+	F*	.	.	.	.	.	.	.	.	SFC2301AH	LM301AH	0	TOA301AV
DIL-14/1P	N	N	F*	E-	E+	V-	N	N	$\emptyset$	R	V+	F	N	N	.	.	LM709D	UA709DM	0	TOA1709E
FLP-10/3C	N	F*	E-	E+	V-	$\emptyset$	R	V+	F	N	.	.	.	.	.	.	.	UA709FM	0	TOA1709F
DIL-14/1C	N	N	F*	E-	E+	V-	N	N	$\emptyset$	R	V+	F	N	N	.	.	LM709D	UA709DM	0	TOA1709J
DIL-14/1P	N	N	F*	E-	E+	V-	N	N	$\emptyset$	R	V+	F+	N	N	.	.	LM709D	UA709DM	0	TOA1709P
T05-8/1M	F*	E-	E+	V-M	$\emptyset$	R	V+	F	.	.	.	.	.	.	.	.	TAA522	UA709HM	0	TOA1709V
DIL-14/1P	N	N	T	E-	E+	V-	N	N	T*	R	V+	N	N	N	.	.	LM741D	UA741DM	0	TOA1741E
FLP-10/3C	N	T	E-	E+	V-	T*	R	V+	N	N	.	.	.	.	.	.	LM741F	UA741FM	0	TOA1741F
DIL-14/1C	N	N	T	E-	E+	V-	N	N	T*	R	V+	N	N	N	.	.	LM741D	UA741DM	0	TOA1741J
DIL-14/1P	N	N	T	E-	E+	V-	N	N	T*	R	V+	N	N	N	.	.	LM741D	UA741DM	0	TOA1741P
T05-8/1M	T	E-	E+	V-M	T*	R	V+	F	.	.	.	.	.	.	.	.	TBA222	UA741HM	0	TOA1741V
FLP-10/3C	N	T	E-	E+	V-	T*	R	V+	F	N	.	.	.	.	.	.	SNS2748FA	UA748FM	0	TOA1741WF
DIL-14/1C	N	N	T	E-	E+	V-	N	N	T*	R	V+	F	N	N	.	.	SNS2748JA	UA748DM	0	TOA1741WP
T05-8/1M	T	E-	E+	V-	T*	R	V+	F	.	.	.	.	.	.	.	.	TBC0748	UA748HM	0	TOA1741WV
T05-10/1M	R1	V+1	E-1	E+1	V-	E+2	V+2	R2	N	.	.	.	.	.	.	.	SFC2747M	UA747HM	0	TOA1747AV
T05-8/1M	R1	E-1	E+1	V-	E+2	E-2	R2	V+	.	.	.	.	.	.	.	.	TBC1458	MC1558G	0	TOA1747BV
DIL-14/1C	E-1	E+1	T1	V-	T2	E+2	E-2	T*2	V+2	R2	N	R1	V+1	T*1	.	.	SFC2747KM	UA747DM	0	TOA1747J
DIL-14/1P	N	N	TF	E-	E+	V-	N	N	T*	R	V+	F*	N	N	.	.	SNS2748JA	UA748DM	0	TOA1748E
FLP-10/3C	N	TF	E-	E+	V-	T*	R	V+	F*	N	.	.	.	.	.	.	SNS2748FA	UA748FM	0	TOA1748F
DIL-14/1C	N	N	TF	E-	E+	V-	N	N	T*	R	V+	F*	N	N	.	.	SNS2748JA	UA748DM	0	TOA1748J
DIL-14/1P	N	N	TF	E-	E+	V-	N	N	T*	R	V+	F*	N	N	.	.	SNS2748JA	UA748DM	0	TOA1748P
T05-8/1M	TF	E-	E+	V-M	T*	R	V+	F*	.	.	.	.	.	.	.	.	TBC0748	UA748HM	0	TOA1748V
DIL-14/1P	$\emptyset$ 2	R	F2	F*2	E-2	E+2	V-	E+1	E-1	F*1	F1	R1	$\emptyset$ 1	V+	.	.	RM1537DC	MC1537L	0	TOA1809E
DIL-14/1C	$\emptyset$ 2	R	F2	F*2	E-2	E+2	V-	E+1	E-1	F*1	F1	R1	$\emptyset$ 1	V+	.	.	RM1537DC	MC1537L	0	TOA1809J
DIL-14/1P	N	N	F	E+	V-	N	N	$\emptyset$	R	V+	F	N	.	.	.	.	TAA521A	UA709DC	0	TOA2709E
FLP-10/1C	N	F*	E-	E+	V-	$\emptyset$	R	V+	F	N	.	.	.	.	.	.	.	MC1709F	0	TOA2709F
DIL-14/1C	N	N	F*	E-	E+	V-	N	N	$\emptyset$	R	V+	F	N	N	.	.	TAA521A	UA709DC	0	TOA2709J
DIL-14/1P	N	N	F*	E-	E+	V-	N	N	$\emptyset$	R	V+	F	N	N	.	.	TAA521A	UA709DC	0	TOA2709P
T05-8/1M	F*	E-	E+	V-M	$\emptyset$	R	V+	F	.	.	.	.	.	.	.	.	TAA521	UA709HC	0	TOA2709V
DIL-14/1P	N	N	T	E-	E+	V-	N	N	T*	R	V+	N	N	N	.	.	TBA221A	UA741DC	0	TOA2741E
FLP-10/3C	N	T	E-	E+	V-	T*	R	V+	N	N	.	.	.	.	.	.	LM741F	UA741FM	0	TOA2741F
DIL-14/1C	N	N	T	E-	E+	V-	N	N	T*	R	V+	N	N	N	.	.	TBA221A	UA741DC	0	TOA2741J



For detailed explanations of column heading notations, see App. A.

Also for ready references the more important abbreviations used in the column headings are listed below:

LEFT HAND PAGE

APP = application

(codes at APP.E.)

CMRR = common mode rejection ratio

CMP = compensation (frequency)

$dV_{in}/dT$  = input offset voltage

temperature drift

GBP = gain bandwidth product

$I_B$  = input bias current

$I_{D1}$  = input bias offset

current

$I_D$  = quiescent supply current

MFR = manufacturer (codes at App.C.)

$P_D$  = quiescent power consumer

PSRR = power supply rejection ratio

$V_{ICM}$  = common mode input voltage rating

$V_{ID1}$  = differential input voltage rating

$V_{IO}$  = input offset voltage

$V_S$  = dc supply voltage

RIGHT HAND PAGE

Lead out coding summary (details at APP.G.) for different cases (APP.F.)

A = gain adjust

B = bias adjust

C = case

E- = inverting input

E+ = non-inverting input

F,F\* = input frequency

compensation

G = ground

J = high level input

K = output, open collector

L = output, open emitter

M = metal case

N = not connected

O = special terminal

R,R\* = outputs

S = strobe

T,T\* = offset balance

V+ = +ve dc supply

V- = -ve dc supply

W = guard ring

X = blank position, no lead

+ + = +ve supplementary dc supply

- - = -ve supplementary dc supply

$\delta$ ,  $\delta^*$  = output frequency compensation

CASE (APP.F.)	LD 1	LD 2	LD 3	LD 4	LD 5	LD 6	LD 7	LD 8	LD 9	LD 10	LD 11	LD 12	LD 13	LD 14	LD 15	LD 16	EUROPE SUBSTITUTION	USA SUBSTITUTION	IS	TYPE NUMBER	
DIL-14/1P	N	N	T	E-	E+	V-	N	N	T*	R	V+	N	N	N	.	.	TBA221A	UA741DC	0	TOA2741P	
T05-8/1M	T	E-	E+	V-M	T*	R	V+	N	.	.	.	.	.	.	.	.	TBA221	UA741HC	0	TOA2741V	
FLP-10/3C	N	T	E-	E+	V-	T*	R	V+	F	N	.	.	.	.	.	.	LM741F	UA741FM	0	TOA2741WF	
DIL-14/1C	N	N	T	E-	E+	V-	N	N	T*	R	V+	F	N	N	.	.	TBA221A	UA741DC	0	TOA2741WP	
T05-8/1M	T	E-	E+	V-	T*	R	V+	F	.	.	.	.	.	.	.	.	TBB0748	UA748HC	0	TOA2741WV	
T05-10/1M	R1	V+1	E-1	E+1	V-	E+2	E-2	V+2	R2	N	.	.	.	.	.	.	TBB0747	UA747HC	0	TOA2747AV	
T05-8/1M	R1	E-1	E+1	V-	E+2	E-2	R2	V+	.	.	.	.	.	.	.	.	TBB1458	MC1458	0	TOA2747BY	
DIL-14/1C	E-1	E+1	T1	V-	T2	E+2	E-2	T*2	V+2	R2	N	R1	V+	T*1	.	.	TBB0747A	UA747DC	0	TOA2747J	
DIL-14/1P	N	N	TF	E-	E+	V-	N	N	T*	R	V+	F*	N	N	.	.	SN72748J	UA748DC	0	TOA2748E	
FLP-10/3C	N	TF	E-	E+	V-	T*	R	V+	F*	N	.	.	.	.	.	.	SN72748FA	UA748FM	0	TOA2748F	
DIL-14/1C	N	N	TF	E-	E+	V-	N	N	T*	R	V+	F*	N	N	.	.	SN72748J	UA748DC	0	TOA2748J	
DIL-14/1P	N	N	TF	E-	E+	V-	N	N	T*	R	V+	F*	N	N	.	.	SN72748J	UA748DC	0	TOA2748P	
T05-8/1M	TF	E-	E+	V-M	T*	R	V+	F*	.	.	.	.	.	.	.	.	TBB0748	UA748HC	0	TOA2748V	
DIL-14/1P	$\delta$ 2	R	F2	F*2	E-2	E+2	V-	E+1	E-1	F*1	F1	R1	$\delta$ 1	V+	.	.	RC1437DC	MC1437L	0	TOA2809E	
DIL-14/1C	$\delta$ 2	R	F2	F*2	E-2	E+2	V-	E+1	E-1	F*1	F1	R1	$\delta$ 1	V+	.	.	RC1437DC	MC1437L	0	TOA2809J	
DIL-14/1P	N	N	F*	E-	E+	V-	N	N	$\delta$	R	V+	F	N	N	.	.	.	709BE	0	TOA3709E	
FLP-10/3C	N	F*	E-	E+	V-	$\delta$	R	V+	F	N	.	.	.	.	.	.	.	709BH	0	TOA3709F	
DIL-14/1C	N	N	F*	E-	E+	V-	N	N	$\delta$	R	V+	F	N	N	.	.	.	709BL	0	TOA3709J	
DIL-14/1P	N	N	F*	E-	E+	V-	N	N	$\delta$	R	V+	F	N	N	.	.	.	709BL	0	TOA3709P	
T05-8/1M	F*	E+	E+	V-M	$\delta$	R	V+	F	.	.	.	.	.	.	.	.	.	709BE	0	TOA3709V	
DIL-14/1P	N	N	T	E-	E+	V-	N	N	T*	R	V+	N	N	N	.	.	.	MC1556L	0	TOA3741E	
FLP-10/3C	N	T	E-	E+	V-	T*	R	V+	N	N	.	.	.	.	.	.	.	LM143F	0	TOA3741F	
DIL-14/1C	N	N	T	E-	E+	V-	N	N	T*	R	V+	N	N	N	.	.	.	MC1556L	0	TOA3741J	
DIL-14/1P	N	N	T	E-	E+	V-	N	N	T*	R	V+	N	N	N	.	.	.	MC1556L	0	TOA3741P	
T05-8/1M	T	E-	E+	V-M	T*	R	V+	N	.	.	.	.	.	.	.	.	S556T	MC1556G	0	TOA3741V	
DIL-14/1P	N	N	TF	E-	E+	V-	N	N	T*	R	V+	F*	N	N	.	.	.	UA748ADM	0	TOA3748E	
FLP-10/3C	N	TF	E-	E+	V-	T*	R	V+	F*	N	.	.	.	.	.	.	.	UA748AFM	0	TOA3748F	
DIL-14/1C	N	N	TF	E-	E+	V-	N	N	T*	R	V+	F*	N	N	.	.	.	UA748ADM	0	TOA3748J	
T05-8/1M	TF	E-	E+	V-M	T*	R	V+	F*	.	.	.	.	.	.	.	.	.	UA748AHM	0	TOA3748V	
DIL-14/1P	N	N	F*	E-	E+	V-	N	N	$\delta$	R	V+	F	N	N	.	.	.	LM709AJ	UA709ADM	0	TOA4709E
FLP-10/3C	N	F*	E-	E+	V-	$\delta$	R	V+	F	N	.	.	.	.	.	.	.	SN52709AFA	UA709AFM	0	TOA4709F
DIL-14/1C	N	N	F*	E-	E+	V-	N	N	$\delta$	R	V+	F	N	N	.	.	.	LM709AJ	UA709ADM	0	TOA4709J
DIL-14/1P	N	N	F*	E-	E+	V-	N	N	$\delta$	R	V+	F	N	N	.	.	.	LM709AJ	UA709ADM	0	TOA4709P
T05-8/1M	F*	E-	E+	V-M	$\delta$	R	V+	F	.	.	.	.	.	.	.	.	.	MC1709AG	UA709AHM	0	TOA4709V
DIL-14/1P	N	N	T	E-	E+	V-	N	N	T*	R	V+	N	N	N	.	.	.	MC1556L	0	TOA7741E	
FLP-10/3C	N	T	E-	E+	V-	T*	R	V+	N	N	.	.	.	.	.	.	.	LM143F	0	TOA7741F	
DIL-14/1C	N	N	T	E-	E+	V-	N	N	T*	R	V+	N	N	N	.	.	.	MC1556L	0	TOA7741J	
DIL-14/1P	N	N	T	E-	E+	V-	N	N	T*	R	V+	N	N	N	.	.	.	MC1556L	0	TOA7741P	
T05-8/1M	T	E-	E+	V-M	T*	R	V+	N	.	.	.	.	.	.	.	.	.	MC1556G	0	TOA7741V	
T05-10/1M	R1	V+	E-1	E+1	V-	E+2	E-2	V+2	R2	N	.	.	.	.	.	.	.	TBC0747	UA747AHM	0	TOA7747AV
T05-8/1M	R1	E-1	E+1	V-	E+2	E-2	R2	V+	.	.	.	.	.	.	.	.	.	.	UA798HM	0	TOA7747BV
DIL-14/1P	N	N	TF	E-	E+	V-	N	N	T*	R	V+	F*	N	N	.	.	.	UA101AD	LM101AJ14	0	TOA7748E
FLP-10/3C	N	TF	E-	E+	V-	T*	R	V+	F*	N	.	.	.	.	.	.	.	SFC2101APM	LM101AF	0	TOA7748F
DIL-14/1C	N	N	TF	E-	E+	V-	N	N	T*	R	V+	F*	N	N	.	.	.	UA101AD	LM101AJ14	0	TOA7748J
T05-8/1M	TF	E-	E+	V-M	T*	R	V+	F*	.	.	.	.	.	.	.	.	.	SFC2101A	LM101AH	0	TOA7748V
DIL-14/1P	N	N	T	E-	E+	V-	N	N	T*	R	V+	N	N	N	.	.	.	.	TOA7741E	0	TOA8741E
FLP-10/3C	N	T	E-	E+	V-	T*	R	V+	N	N	.	.	.	.	.	.	.	.	TOA7741F	0	TOA8741F
DIL-14/1C	N	N	T	E-	E+	V-	N	N	T*	R	V+	N	N	N	.	.	.	.	TOA7741J	0	TOA8741J
DIL-14/1P	N	N	T	E-	E+	V-	N	N	T*	R	V+	N	N	N	.	.	.	.	TOA7741P	0	TOA8741P
T05-8/1M	T	E-	E+	V-M	T*	R	V+	N	.	.	.	.	.	.	.	.	.	.	TOA7741V	0	TOA8741V
T05-10/1M	R1	V+1	E-1	E+1	V-	E+2	E-2	V+2	R2	N	.	.	.	.	.	.	.	TBB0747	UA747HC	0	TOA8747AV
T05-8/1M	R1	E-1	E+1	V-	E+2	E-2	R2	V+	.	.	.	.	.	.	.	.	.	UA798HM	0	TOA8747BV	
DIL-14/1P	N	N	TF	E-	E+	V-	N	N	T*	R	V+	F*	N	N	.	.	.	UA201AD	LM201AJ14	0	TOA8748E
FLP-10/3C	N	TF	E-	E+	V-	T*	R	V+	F*	N	.	.	.	.	.	.	.	SFC2201APM	LM201AF	0	TOA8748F
DIL-14/1C	N	N	TF	E-	E+	V-	N	N	T*	R	V+	F*	N	N	.	.	.	UA201AD	LM201AJ14	0	TOA8748J
T05-8/1M	TF	E-	E+	V-M	T*	R	V+	F*	.	.	.	.	.	.	.	.	.	SFC2101A	LM201AH	0	TOA8748V
DIL-14/1P	N	N	T	E-	E+	V-	N	N	T*	R	V+	N	N	N	.	.	.	.	0	TOA8748Y	
DIL-14/1P	N	E-1	E+1	V-	E+2	E-2	N	S2	R	V+	G	S1	N	.	.	.	.	0	TSC1225E		
FLP-10/3C	E-1	E+1	V-	E+2	E-2	S2	R	V+	G	S1	.	.	.	.	.	.	.	.	0	TSC1225F	
DIL-14/1C	N	E-1	E+1	V-	E+2	E-2	N	S2	R	V+	G	S1	N	.	.	.	.	0	TSC1225J		
T05-10/1M	G	S1	E-1	E+1	V-M	E+2	E-2	S2	R	V+	.	.	.	.	.	.	.	.	0	TSC1225V	

# Appendix A

# Explanatory notes to tabulations

The general layout plan of the information in the tables of this compendium should be immediately evident from the data tabulation explanatory chart set out overleaf.

Supporting Appendices with additional information are:

- App. B Glossary of *Opamp Terms*
- App. C Tabulation *Codes for Manufacturers*
- App. D IC Manufacturers' *House Numbers*
- App. E Tabulation *Codes for Applications*
- App. F *Case Outline and Leadout Diagrams*
- App. G Codes for *Leadout Connections*

Unit symbols used in the tables are:

- A = amperes
- C = °centigrade
- dB = decibels
- G = gigaohms (megohms  $\times 10^3$ )
- GHZ = gigahertz (megahertz  $\times 10^3$ )
- K = kilohms
- KHZ = kilohertz
- M = megohms
- MA = milliamperes, mA
- MAX = maximum
- MHZ = megahertz
- MIN = minimum
- MV = millivolts
- MWC = milliwatts, case at 25C
- MWF = milliwatts, free air at 25C
- MWH = milliwatts, heat sink, 25C
- NA = nanoamps (microamps  $\times 10^{-3}$ )
- NV = nanovolts (microvolts  $\times 10^{-3}$ )
- PA = picoamps (microamps  $\times 10^{-12}$ )
- R = ohms
- T = teraohms (megohms  $\times 10^6$ )
- V = volts
- WC = watts, case at 25C
- WF = watts, free air at 25C
- WH = watts, heatsink, 25C
- $\mu$ A = microamps
- $\mu$ S = microseconds
- $\mu$ V = microvolts
- $\mu$ W = microwatts
- $\mu$ WF = microwatts, free air at 25C

Where a unit symbol appears in the middle of a value, it indicates the position of the decimal point, e.g. 3K3 = 3.3K.



## Appendix A

### LEFT HAND PAGE

For detailed explanations of column heading notations, see App. A.

Also for ready references the more important abbreviations used in the column headings are listed below:

- APP = application  
(codes at APP.E.)
- CMRR = common mode rejection ratio
- CMP = compensation  
(frequency)
- $dV_{io}/dT$  = input offset voltage temperature drift
- GBP = gain bandwidth product
- $I_b$  = input bias current
- $I_{io}$  = input bias offset current
- $I_Q$  = quiescent supply current
- MFR = manufacturer  
(codes at App.C.)
- $P_Q$  = quiescent power consumer
- PSRR = power supply rejection ratio
- $V_{icm}$  = common mode input voltage rating
- $V_{idc}$  = differential input voltage rating
- $V_{io}$  = input offset voltage
- $V_S$  = dc supply voltage

### RIGHT HAND PAGE

Lead out coding summary (details at APP.G.) for different cases (APP.F.)

- A = gain adjust
- B = bias adjust
- C = case
- E- = inverting input
- E+ = non-inverting input
- F,F\* = input frequency compensation
- G = ground
- J = high level input
- K = output, open collector
- L = output, open emitter
- M = metal case
- N = not connected
- Q = special terminal
- R,R\* = outputs
- S = strobe
- T,T\* = offset balance
- V+ = +ve dc supply
- V- = -ve dc supply
- W = guard ring
- X = blank position, no lead
- + + = +ve supplementary dc supply
- - = -ve supplementary dc supply
- $\phi, \phi^*$  = output frequency compensation

CASE (APP. F.)	LD 1	LD 2	LD 3	LD 4	LD 5	LD 6	LD 7	LD 8	LD 9	LD 10	LD 11	LD 12	LD 13	LD 14	LD 15	LD 16	EUROPE SUBSTITUTION	USA SUBSTITUTION	ISS	TYPE NUMBER	
T05-8/1M	T	E-	E+	V-	T*	R	V+	N	.	.	.	.	.	.	.	.	.	.	LH0022H	0	LH0022CH

CASE = PACKAGE OF DIFFERENT TYPES CODED ACCORDING TO APP. F - FIRST NUMBER INDICATES NUMBER OF LEAD POSITIONS EG DIL-14 = 14 LEAD DUAL-IN-LINE PACKAGE

LD1, LD2, ETC = LEAD NUMBERS WITH CONNECTIONS ACCORDING TO PAGE FOOTNOTE OR APP. G.

EURO SUBSTITUTION = PROELECTRON STANDARD OR OTHER TYPE AVAILABLE IN EUROPE

USA SUBSTITUTION = SUGGESTED ALTERNATIVE AVAILABLE IN USA.

ISS = ISSUE NUMBER OF DATA ENTRY

TYPE No. REPEATED ON R.H. MARGIN

# Appendix C

## Tabulation Codes for Manufacturers

<b>ADU</b>	<b>Advanced Micro Devices Inc.,</b> 901 Thompson Pl., Sunnyvale, CA 94086, USA	<b>ITU</b>	DA14 5HT, UK <b>ITT Semiconductors</b> 74 Commerce Way, Woburn, MA, 01801, USA
<b>ANG</b>	<b>Analog Devices Ltd,</b> Central Ave., East Molesey, KT8 9BR, Surrey, UK	<b>MNG</b>	<b>Mitsubishi Shoji Kaisha Ltd,</b> Bow Bells House, Bread St., London, EC4, UK
<b>ANU</b>	<b>Analog Devices Inc.,</b> P.O. Box 280, Norwood, Mass., 02062	<b>MNJ</b>	<b>Mitsubishi Electric Corp.,</b> 2-12 Marunouchi, Chiyoda-ku, Tokyo, Japan
<b>BLG</b>	<b>Bell &amp; Howell Ltd,</b> Lennox Road, Basingstoke, Hants, UK	<b>MTG</b>	<b>Motorola Ltd</b> (Semiconductor Products Div.), York House, Empire Way, Wembley, Middlesex, HA9 0PR, UK
<b>BLU</b>	<b>Bell &amp; Howell</b> (Control Products Divison), 706 Bostwick Ave, Bridgeport, Conn. 06605, USA	<b>MTU</b>	<b>Motorola Semiconductor Products Inc.,</b> 5005 E. McDowell Road, Phoenix, AZ, 85008, USA
<b>BUG</b>	<b>Burr-Brown International Ltd,</b> 17 Exchange Rd, Watford, WQD1 7EB, Herts., UK	<b>MUG</b>	<b>Mullard Ltd,</b> Mullard House, Torrington Place, London, WC1E 7HD, UK
<b>BUU</b>	<b>Burr-Brown Research Corp.,</b> P.O. Box 11400, Tucson, AZ, 85734, USA	<b>NAG</b>	<b>National Semiconductor (UK) Ltd,</b> Harpur Centre, Bedford, MK40 3LF, UK
<b>CMG</b>	<b>Computing Techniques Ltd,</b> Brookers Rd, Billingshurst, Sussex, RH14 9RZ, UK	<b>NAU</b>	<b>National Semiconductor Corp.,</b> 2900 Semiconductor Drive, Santa Clara, CA, 95051, USA
<b>DAG</b>	<b>Datel UK Ltd,</b> Stephenson Close, Portway Ind. Estate, Andover, Hants, UK	<b>NIJ</b>	<b>Nippon Electric Co. Ltd,</b> 1753 Shimonumabe, Nakahara-ku, Kawasaki, Japan
<b>DAU</b>	<b>Datel Systems Inc.,</b> 1020 Turnpike St., Canton, MA 02021, USA	<b>OAU</b>	<b>Opamp Labs Inc.,</b> 1033 N. Sycamore Ave., Los Angeles, CA 90038, USA
<b>FAG</b>	<b>Fairchild Camera &amp; Instrument (UK) Ltd,</b> 230 High St., Potters Bar, Herts., UK	<b>OBS</b>	Obsolete – no longer commercially available.
<b>FAU</b>	<b>Fairchild Semiconductor</b> 464 Ellis St., Mountain View, CA 94042, USA	<b>OTU</b>	<b>Optical Electronics Inc.,</b> P.O. Box 11140, Tucson, AZ, 85734, USA
<b>FEG</b>	<b>Ferranti Ltd,</b> (Electronic Department), Gem Mill, Chadderton, Oldham, Lancs., OL9 8NP, UK	<b>PLG</b>	<b>Plessey Semiconductors,</b> Cheney Manor, Swindon, Wilts., SN2 2QW, UK
<b>FUJ</b>	<b>Fujitsu Ltd,</b> 1015 Kamikodanaka, Kawasaki, Japan	<b>PRG</b>	<b>Precision Monolithics</b> (Bourns Trimpot Ltd) 17/27 High St., Hounslow, Middlesex, UK
<b>HAG</b>	<b>Harris Semiconductor (Memec) Ltd,</b> The Firs, Whitchurch, Nr. Aylesbury, Bucks., HP22 4JU, UK	<b>PRU</b>	<b>Precision Monolithics (Bourns) Inc.,</b> 1500 Space Park Drive, Santa Clara, CA, 95050, USA
<b>HAU</b>	<b>Harris Semiconductor</b> P.O. Box 883, Melbourne, FL, 32901, USA	<b>RAG</b>	<b>Raytheon Semiconductor</b> The Pinnacles, Harlow, Essex, CM19 5BB, UK
<b>HIJ</b>	<b>Hitachi Ltd</b> (Semiconductor and IC Div.), 1450 Josuihonimachi, Kodaira City, Tokyo, Japan	<b>RAU</b>	<b>Raytheon Semiconductor,</b> 350 Ellis Street, Mountain View, CA, 94042, USA
<b>ING</b>	<b>Intersil Inc.,</b> 8 Tessa Rd, Richfield Trading Estate, Reading, Berks., UK	<b>RCG</b>	<b>RCA (Great Britain) Ltd,</b> Lincoln Way, Windmill Road, Sunbury-on- Thames, Middlesex, UK
<b>INU</b>	<b>Intersil Inc.,</b> 10900 N. Tantau Ave, Cupertino, CA, 95014, USA	<b>RCU</b>	<b>RCA Solid State Division</b> Route 202, Somerville, NJ, 08876, USA
<b>ITG</b>	<b>ITT Semiconductors</b> Maidstone Rd, Fooks Cray, Sidcup, Kent,	<b>SAJ</b>	<b>Sanken Electric Co. Ltd,</b> 1-22-8 Nishi-Ikebukuro, Toshima-Ku, Tokyo, Japan



Appendix C

<b>SGG</b>	<b>SGS-ATES (UK) Ltd,</b> Planar House, Walton Street, Aylesbury, Bucks., UK	<b>SPU</b>	<b>Sprague Electric Company</b> (Semiconductor Div.), 115 Northeast Cutoff, Worcester, MA, 01606, USA
<b>SGI</b>	<b>SGS-ATES Componenti Spa,</b> Via Olivetti, 2 Agrate Brianza, 20041, Milan, Italy	<b>TDG</b>	<b>Teledyne Semiconductor,</b> Heathrow House, Bath Road, Cranford, Hounslow, Middlesex, TW5 9QP, UK
<b>SHG</b>	<b>Shindengen Hyokuto Boeki Haisha Ltd,</b> St. Alphage House, Fore St., London, EC2Y 5DA, UK	<b>TDU</b>	<b>Teledyne (Amelco) Semiconductor,</b> 1300 Terra Bella Ave, Mountain View, CA, 94032, USA
<b>SHJ</b>	<b>Shindengen Electric Mfg Co., Ltd,</b> New Ohtemachi Bldng, 2-1, 2-chome, Ohtemachi, Chiyoda-ku, Tokyo, Japan	<b>TEB</b>	<b>Teledyne-Philbrick,</b> Heathrow House, Bath Road, Cranford, Hounslow, Middlesex, TW5 9QP, UK
<b>SIG</b>	<b>Siemens Ltd,</b> Great West Road, Brentford, Middlesex, TW8 9DG, UK	<b>TEU</b>	<b>Teledyne-Philbrick,</b> Allied Drive at Route 128, Dedham, MA, 02026, USA
<b>SIW</b>	<b>Siemens Aktiengesellschaft,</b> Richard-Strauss-Strasse 76, D-8000 Munchen 2, Postfach 202109, W. Germany	<b>TGG</b>	<b>Texas Instruments Ltd,</b> Manton Lane, Bedford, UK
<b>SJG</b>	<b>Signetics International Corporation</b> Yeoman House, 63 Croydon Rd, London, SE20, UK	<b>TGU</b>	<b>Texas Instruments Inc.</b> (Components Group), P.O. Box 5012, Dallas, Texas, 75222, USA
<b>SJU</b>	<b>Signetics Corp.,</b> 811 East Arques Ave, Sunnydale, CA. 94086, USA	<b>THF</b>	<b>Thomson-CSF (Sescosem),</b> 50 Rue Jean Pierre Timbaud, BP 120, 92403, Courbevoie, France
<b>SKU</b>	<b>Silicon General Inc.,</b> 7382 Bolsa Avenue, Westminster, CA, 92683, USA	<b>THG</b>	<b>Thomson-CSF (UK) Ltd,</b> Ringway House, Bell Rd, Daneshill, Basingstoke, Hants., RG24 0QG, UK.
<b>SLG</b>	<b>Siliconix Ltd,</b> 30A High St., Thatcham, Newbury, Berks., RG13 4JG, UK	<b>TKJ</b>	<b>Tokyo Sanyo Electric Co. Ltd</b> (Semiconductor Div.), Oizumachi, Oragun, Gumma, Japan
<b>SLU</b>	<b>Siliconix Incorporated,</b> 2201 Laurelwood Road, Santa Clara, CA, 95054, USA	<b>TOG</b>	<b>Toshiba (UK) Ltd,</b> Toshiba House, Great South West Rd, Feltham, Middlesex, UK
<b>SOJ</b>	<b>Sony Semiconductor Corp.,</b> 14-1, Asa hi-sho 4, Atsuigi-shi, Kanagawa-ken, 243, Japan	<b>TOJ</b>	<b>Toshiba (Tokyo Shibaura) Electric Co.,</b> 2-1, 5-chome, Ginza Chuo-ku, Tokyo, Japan
<b>SPG</b>	<b>Sprague Electric (UK) Ltd,</b> 159 High St., Yiewsley, W. Drayton, Middlesex, UB7 7RY, UK	<b>TRU</b>	<b>Transitron Electronic Corp.,</b> 168 Albion St., Wakefield, MA, 01881, USA
		<b>ZEU</b>	<b>Zeltex Inc.,</b> 940 Detroit Ave, Concord, CA, 94518, USA

# Appendix D

## IC Manufacturers'

### House Numbers

(General Note: Manufacturers often adopt their own 'in-house' serial numbering for their ICs. Listed below are the initial letters of numerical series used by different manufacturers.)

<b>AD</b>	Analog Devices	<b>OP</b>	Precision Monolithics
<b>ADO</b>	Analog Devices	<b>P</b>	Teledyne-Philbrick
<b>AM</b>	Advanced Micro Devices; Datel	<b>PF</b>	Teledyne-Philbrick
<b>AMD</b>	Advanced Micro Devices	<b>PG</b>	General Instruments (obs.)
<b>AMLM</b>	Advanced Micro Devices	<b>PP</b>	Teledyne-Philbrick
<b>AMSSS</b>	Advanced Micro Devices	<b>RA</b>	Radiation (now Harris)
<b>AMU</b>	Advanced Micro Devices	<b>RC</b>	Raytheon
<b>C</b>	Bell & Howell	<b>RL</b>	Raytheon
<b>CA</b>	RCA	<b>RM</b>	Raytheon
<b>CIA</b>	Teledyne-Philbrick	<b>RSN</b>	Raytheon
<b>CMP</b>	Precision Monolithics	<b>RV</b>	Raytheon
<b>CN</b>	Ferranti	<b>S</b>	Signetics
<b>DA</b>	Teledyne-Philbrick	<b>SA</b>	Teledyne-Philbrick
<b>EP</b>	Teledyne-Philbrick	<b>SE</b>	Signetics; Mullard
<b>ESL</b>	Teledyne-Philbrick	<b>SFC</b>	Thomson-CSF
<b>FSL</b>	Teledyne-Philbrick	<b>SG</b>	Silicon General
<b>FSS</b>	Ferranti	<b>SH</b>	Fairchild
<b>HA</b>	Harris	<b>SK</b>	RCA
<b>HEPC</b>	Motorola	<b>SL</b>	Plessey; Teledyne-Philbrick
<b>ICH</b>	Intersil	<b>SN</b>	Texas Instruments
<b>ICL</b>	Intersil	<b>SP</b>	Teledyne-Philbrick
<b>JM</b>	Fairchild	<b>SQ</b>	Teledyne-Philbrick
<b>JSF</b>	Thomson-CSF	<b>SSS</b>	Precision Monolithics
<b>L</b>	Analog Devices; SGS-ATES	<b>SU</b>	Signetics; Mullard
<b>LA</b>	Teledyne-Philbrick	<b>T</b>	Teledyne-Philbrick Transitron
<b>LF</b>	National Semiconductor	<b>TA</b>	AEG-Telefunken
<b>LH</b>	National Semiconductor	<b>TAA</b>	Proelectron Standard
<b>LM</b>	National Semiconductor	<b>TBA</b>	Proelectron Standard
<b>M</b>	Mitsubishi	<b>TBB</b>	Proelectron Standard
<b>MC</b>	Motorola Semiconductors	<b>TBC</b>	Proelectron Standard
<b>MCC</b>	Motorola Semiconductors	<b>TBE</b>	Proelectron Standard
<b>MCCF</b>	Motorola Semiconductors	<b>TCA</b>	Proelectron Standard
<b>MCE</b>	Motorola Semiconductors	<b>TDA</b>	Proelectron Standard
<b>MCH</b>	Motorola Semiconductors	<b>TDB</b>	Proelectron Standard
<b>MIC</b>	ITT Semiconductors	<b>TDC</b>	Proelectron Standard
<b>MLF</b>	Motorola; Teledyne-Philbrick	<b>TDE</b>	Proelectron Standard
<b>MLM</b>	Motorola Semiconductors	<b>TL</b>	AEG-Telefunken
<b>MLMC</b>	Motorola Semiconductors	<b>TOA</b>	Transitron
<b>MONO-OP</b>	Precision Monolithics	<b>TSC</b>	Transitron
<b>N</b>	Signetics; Mullard	<b>U</b>	Fairchild
<b>NC</b>	General Instruments (obs.)	<b>ULN</b>	Sprague
<b>NE</b>	Signetics; Mullard	<b>ULS</b>	Sprague
<b>NH</b>	National Semiconductor	<b>USL</b>	Teledyne-Philbrick
		<b>ZA</b>	Zeltex
		<b>ZEL</b>	Zeltex
		<b>ZLD</b>	Ferranti
		<b>ZN</b>	Ferranti
		<b>μA</b>	Fairchild

# Appendix E

## Tabulation Codes for Applications

<b>BDO</b>	Balanced differential-output amplifier	<b>PAA</b>	Parametric amplifier
<b>CDA</b>	Current-difference amplifier	<b>PIA</b>	Precision instrumentation amplifier
<b>CHP</b>	Chopper-stabilized amplifier	<b>PRA</b>	Programmable opamp
<b>CPR</b>	DC comparator	<b>QCD</b>	Quad current-difference amplifier
<b>DBD</b>	Dual balanced differential-output amplifier	<b>QCP</b>	Quad comparator
<b>DCP</b>	Dual Comparator	<b>QFE</b>	Quad fet-input opamp
<b>DFE</b>	Dual fet-input opamp	<b>Q GK</b>	Quad general-purpose, internally-compensated, opamp
<b>DGK</b>	Dual general purpose opamp	<b>QGU</b>	Quad general-purpose, uncompensated, opamp
<b>DGU</b>	Dual general-purpose uncompensated opamp	<b>QLQ</b>	Quad low-quiescent-power opamp
<b>DHS</b>	Dual high-slew-rate opamp	<b>QPI</b>	Quad precision instrumentation amplifier
<b>DLN</b>	Dual low-noise opamp	<b>QPR</b>	Quad programmable opamp
<b>DPI</b>	Dual precision instrumentation amplifier	<b>QSB</b>	Quad super-beta opamp
<b>DPR</b>	Dual programmable opamp	<b>SBA</b>	Super-beta opamp
<b>DSB</b>	Dual super-beta opamp	<b>TCP</b>	Triple comparator
<b>FET</b>	Fet-input opamp	<b>TFE</b>	Triple fet-input opamp
<b>GPK</b>	General-purpose, internally-compensated, opamp	<b>TGK</b>	Triple general-purpose, internally compensated, opamp
<b>GPU</b>	General-purpose, uncompensated, opamp	<b>TGU</b>	Triple general-purpose, uncompensated, opamp
<b>HCO</b>	High current output opamp	<b>TLN</b>	Triple low-noise opamp
<b>HIR</b>	High input resistance opamp	<b>TLP</b>	Triple low-quiescent-power opamp
<b>HPO</b>	High power output opamp	<b>TOT</b>	Triple operational transconductance amplifier
<b>HSR</b>	High slew rate opamp	<b>TPI</b>	Triple precision instrumentation amplifier
<b>HVO</b>	High voltage output opamp	<b>TPR</b>	Triple programmable opamp
<b>LBC</b>	Low input bias current opamp	<b>TSB</b>	Triple super-beta opamp
<b>LCD</b>	Low input offset current drift opamp	<b>VFA</b>	Voltage-follower amplifier
<b>LNA</b>	Low noise opamp	<b>WBA</b>	Wide-band opamp
<b>LOC</b>	Low input offset current opamp	<b>XHG</b>	Extra-high-gain opamp
<b>LOV</b>	Low input offset voltage opamp	<b>XLP</b>	Extra-low quiescent power opamp
<b>LQP</b>	Low quiescent power opamp	<b>XSR</b>	Extra-high slew rate opamp
<b>LVD</b>	Low input offset voltage drift opamp	<b>XWB</b>	Extra-wide-band opamp
<b>MWB</b>	Medium-wideband opamp		
<b>OTA</b>	Operational transconductance amplifier		

# Appendix G

## Codes for Leadout Connections

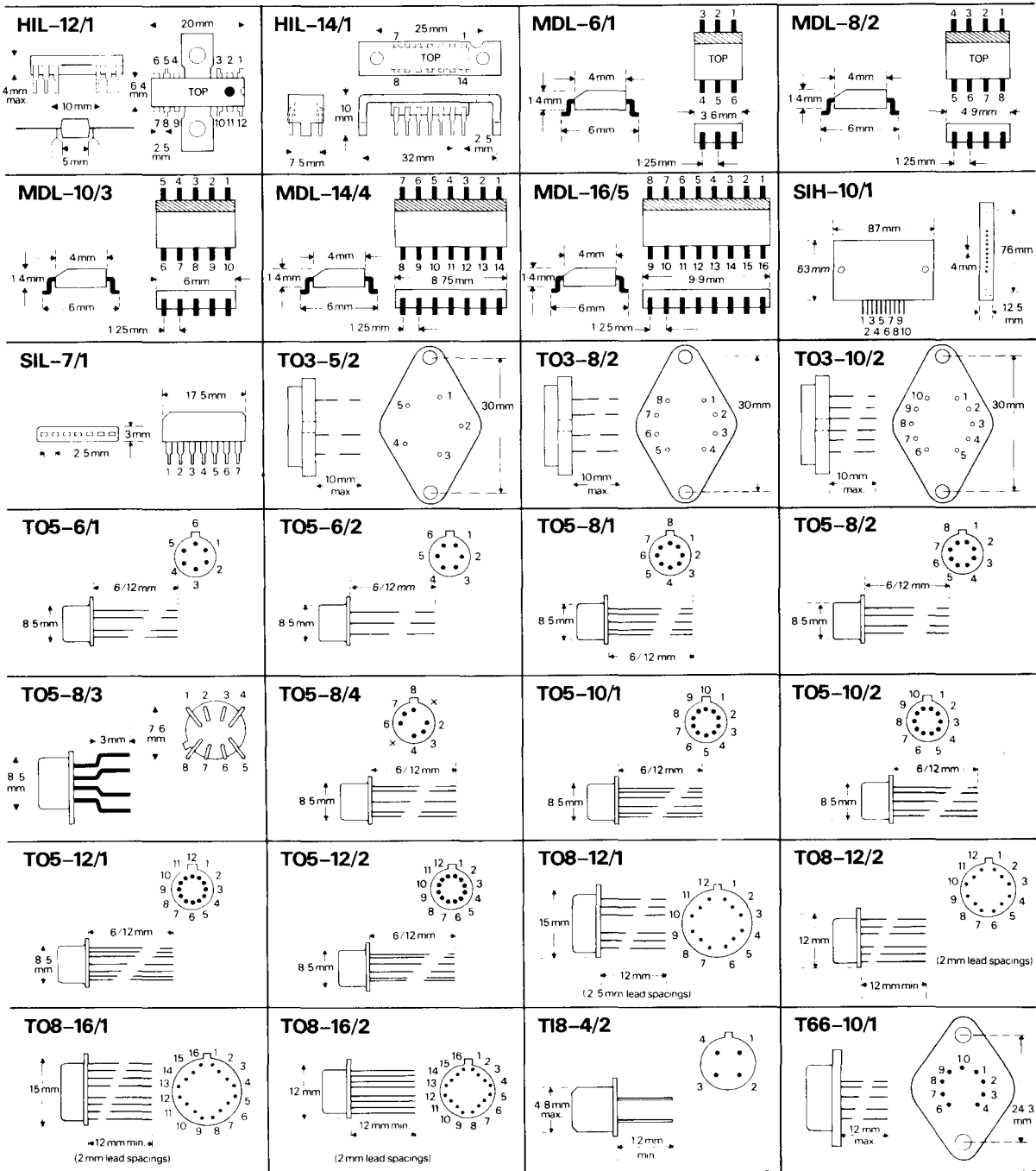
### *I: Connection Codes in Serial Order*

A	= Gain adjust, 1
A*	= Gain adjust, 2
B	= Bias adjust or set
C	= Case, package, screen
E+	= Input, non-inverting, low-level
E-	= Input, inverting, low-level
F	= Input frequency compensation, 1
F*	= Input frequency compensation, 2
G	= Ground, common, earth, zero volts
J+	= Input, non-inverting, high-level
J-	= Input, inverting, high-level
K	= Output, open collector
L	= Output, open emitter
M	= Metal casing
N	= Not connected, i.e. isolated lead
Q	= Special terminal (consult manufacturer's data)
R	= Output, 1
R*	= Output, 2
S	= Strobe
T	= Offset balance, trim or null, 1
T*	= Offset balance, trim or null, 2
V+	= +ve dc supply
V-	= -ve dc supply
W	= Guard ring
X	= Blank position, lead omitted
++	= +ve supplementary dc supply
--	= -ve supplementary dc supply
φ	= Output frequency compensation, 1
φ*	= Output frequency compensation, 2

### *II: Lead Assignments in Alphabetical Order*

Balance, offset, 1 = T
Balance, offset, 2 = T*
Bias adjust = B
Blank position, without lead = X
Case = C
Compensation, input, 1 = F
Compensation, input, 2 = F*
Compensation, output, 1 = φ
Compensation, output, 2 = φ*
DC supply, +ve = V+
DC supply, -ve = V-
Frequency compensation, input, 1 = F
Frequency compensation, input, 2 = F*
Frequency compensation, output, 1 = φ
Frequency compensation, output, 2 = φ*
Gain adjust, 1 = A
Gain adjust, 2 = A*
Ground = G
Guard ring = W
Input, inverting, high-level = J-
Input, non-inverting, high-level = J+
Input, inverting, low-level = E-
Input, non-inverting, low-level = E+
Input offset voltage, adjust, 1 = T
Input offset voltage, adjust, 2 = T*
Lead omitted, blank position = X
Lead in position but not connected = N
Metal case = M
Not connected, but lead in position = N
Null, offset, 1 = T
Null, offset, 2 = T*
Offset voltage adjust, 1 = T
Offset voltage adjust, 2 = T*
Output, 1 = R
Output, 2 = R*
Output, open-collector = K
Output, open-emitter = L
Package = C
Special purpose terminal (data sheet to be consulted) = Q
Strobe = S
Supply, dc, +ve = V+
Supply, dc, -ve = V-
Supply, dc, supplementary, +ve = ++
Supply, dc, supplementary, -ve = --
Trim (offset voltage), 1 = T
Trim (offset voltage), 2 = T*

Appendix F



Appendix F

