

TYPE NUMBER	MFR	APP	COMP	GBP MIN	SLEW RATE MIN	V _{S+} MAX	V _{S-} MAX	T _{DB} MAX	A _{VOL} MIN	V _{IO} MAX	I _B MAX	I _{IO} MAX	P _{TOT} MAX	I _{OUT} MIN	V _{OUT} MIN	V _{ICM} MAX	V _{IDF} MAX	dV _{IO} /dT MAX	P _O MAX	I _O MAX	CM RR MIN	PS RR MIN	R _N MIN	
SF.C2710C	TFH	CPR	EXT	.	.	+14V	-7V	70C	60dB	5MV	25uA	5uA	500MWF	5MA	1V	7V	5V	20uV/C	150MW	9MA	70dB	.	.	
SF.C2710EC	TFH	CPR	EXT	.	.	+14V	-7V	70C	60dB	5MV	25uA	5uA	600MWF	5MA	1V	7V	5V	20uV/C	150MW	9MA	70dB	.	.	
SF.C2710KM	TFH	CPR	EXT	.	.	+14V	-7V	125C	61dB	2MV	20uA	3uA	670MWF	5MA	1V	7V	5V	10uV/C	150MW	9MA	80dB	.	.	
SF.C2710M	TFH	CPR	EXT	.	.	+14V	-7V	125C	61dB	2MV	20uA	3uA	500MWF	5MA	1V	7V	5V	10uV/C	150MW	9MA	80dB	.	.	
SF.C2710PM	TFH	CPR	EXT	.	.	+14V	-7V	125C	61dB	2MV	20uA	3uA	570MWF	5MA	1V	7V	5V	10uV/C	150MW	9MA	80dB	.	.	
SF.C2711C	THF	DCP	EXT	.	.	+14V	-7V	70C	57dB	5MV	100uA	15uA	500MWF	5MA	2.5V	7V	5V	20uV/C	230MW	.	.	.	.
SF.C2711EC	THF	DCP	EXT	.	.	+14V	-7V	70C	57dB	5MV	100uA	15uA	670MWF	5MA	2.5V	7V	5V	20uV/C	230MW	.	.	.	.
SF.C2711KM	THF	DCP	EXT	.	.	+14V	-7V	125C	58dB	3.5MV	75uA	10uA	670MWF	5MA	2.5V	7V	5V	20uV/C	200MW	.	.	.	.
SF.C2711M	THF	DCP	EXT	.	.	+14V	-7V	125C	58dB	3.5MV	75uA	10uA	500MWF	5MA	2.5V	7V	5V	20uV/C	200MW	.	.	.	.
SF.C2711PM	THF	DCP	EXT	.	.	+14V	-7V	125C	58dB	3.5MV	75uA	10uA	570MWF	5MA	2.5V	7V	5V	20uV/C	200MW	.	.	.	.
SF.C2741C	THF	DGK	INT	.	0.2V/uS	+18V	-18V	70C	86dB	6MV	500NA	200NA	500MWF	5MA	12V	15V	30V	.	.	3MA	70dB	76dB	300K	
SF.C2741DC	THF	GPK	INT	.	0.2V/uS	+18V	-18V	70C	86dB	6MV	500NA	200NA	500MWF	5MA	12V	15V	30V	.	.	3MA	70dB	76dB	300K	
SF.C2741EC	THF	DGK	INT	.4MHZ	0.3V/uS	+22V	-22V	70C	94dB	3MV	80NA	30NA	500MW	10MA	16V	15V	30V	15uV/C	150MW	.	80dB	86dB	1M	
SF.C2741KM	THF	DGK	INT	.4MHZ	0.3V/uS	+22V	-22V	125C	94dB	3MV	80NA	30NA	500MW	5MA	12V	15V	30V	15uV/C	150MW	.	80dB	86dB	1M	
SF.C2741M	THF	GPK	INT	.	0.2V/uS	+22V	-22V	125C	94dB	5MV	500NA	200NA	500MWF	5MA	12V	15V	30V	.	.	85MW	3MA	70dB	76dB	300K
SF.C2741PM	FAU	DGK	INT	.	0.2V/uS	+22V	-22V	125C	94dB	5MV	500NA	200NA	500MWF	5MA	12V	15V	30V	.	.	85MW	3MA	70dB	76dB	300K
SF.C2747C	THF	DGK	INT	.	0.2V/uS	+18V	-18V	70C	88dB	6MV	500NA	200NA	680MWF	5MA	12V	15V	30V	.	.	85MW	3MA	70dB	76dB	300K
SF.C2747EC	THF	DGK	INT	.4MHZ	0.3V/uS	+22V	-22V	70C	94dB	3MV	80NA	30NA	500MWF	10MA	16V	15V	30V	15uV/C	150MW	.	80dB	86dB	1M	
SF.C2747KM	THF	DGK	INT	.	0.2V/uS	+22V	-22V	125C	94dB	5MV	500NA	200NA	680MWF	5MA	12V	15V	30V	.	.	85MW	3MA	70dB	76dB	300K
SF.C2747M	THF	DGK	INT	.	0.2V/uS	+22V	-22V	125C	94dB	5MV	500NA	200NA	680MWF	5MA	12V	15V	30V	.	.	85MW	3MA	70dB	76dB	300K
SF.C2748C	THF	GPU	EXT	.	0.2V/uS	+18V	-18V	70C	86dB	6MV	500NA	200NA	500MWF	5MA	12V	15V	30V	.	.	85MW	3MA	70dB	76dB	300K
SF.C2748DC	THF	GPU	EXT	.	0.2V/uS	+18V	-18V	70C	86dB	6MV	500NA	200NA	500MWF	5MA	12V	15V	30V	.	.	85MW	3MA	70dB	76dB	300K
SF.C2748M	THF	GPU	EXT	.	0.2V/uS	+22V	-22V	125C	94dB	5MV	500NA	200NA	500MWF	5MA	12V	15V	30V	.	.	85MW	3MA	70dB	76dB	300K
SF.C2761C	THF	GPU	EXT	.	3V/uS	+18V	-18V	70C	81dB	6MV	1uA	0.3uA	500MWF	25MA	14V	18V	2V	35uV/C	190MW	.	3MA	65dB	74dB	50K
SF.C2761DC	THF	GPU	EXT	.	3V/uS	+18V	-18V	70C	81dB	6MV	1uA	0.3uA	500MWF	25MA	14V	18V	2V	15uV/C	190MW	.	3MA	65dB	74dB	50K
SF.C2761DT	THF	GPU	EXT	.	3V/uS	+18V	-18V	85C	81dB	6MV	1uA	0.3uA	500MWF	25MA	14V	18V	2V	15uV/C	190MW	.	3MA	65dB	74dB	50K
SF.C2761M	THF	GPU	EXT	.	3V/uS	+18V	-18V	125C	85dB	4MV	700NA	100NA	500MWF	25MA	14V	18V	2V	25uV/C	180MW	.	3MA	70dB	74dB	50K
SF.C2761PM	THF	GPU	EXT	.	3V/uS	+18V	-18V	125C	85dB	4MV	700NA	100NA	500MWF	25MA	14V	18V	2V	15uV/C	180MW	.	3MA	70dB	74dB	50K
SF.C2761T	THF	GPU	EXT	.	3V/uS	+18V	-18V	85C	81dB	6MV	1uA	0.3uA	500MWF	25MA	14V	18V	2V	35uV/C	190MW	.	3MA	65dB	74dB	50K
SF.C2776C	THF	PRA	INT	.	0.3V/uS	+18V	-18V	70C	94dB	6MV	50NA	25NA	500MWF	2MA	10V	15V	30V	.	.	6MW	2MA	70dB	74dB	2M
SF.C2776DC	THF	PRA	INT	.	0.3V/uS	+18V	-18V	70C	94dB	6MV	50NA	25NA	310MWF	2MA	10V	15V	30V	.	.	6MW	2MA	70dB	74dB	2M
SF.C2776EC	THF	PRA	INT	.	0.3V/uS	+18V	-18V	125C	106dB	5MV	50NA	15NA	670MWF	2MA	10V	15V	30V	.	.	6MW	2MA	70dB	76dB	2M
SF.C2776KM	THF	PRA	INT	.	0.3V/uS	+18V	-18V	125C	106dB	5MV	50NA	15NA	670MWF	2MA	10V	15V	30V	.	.	6MW	2MA	70dB	76dB	2M
SF.C2776M	THF	PRA	INT	.	0.3V/uS	+18V	-18V	125C	100dB	5MV	50NA	15NA	500MWF	2MA	10V	15V	30V	.	.	6MW	2MA	70dB	76dB	2M
SF.C2776PC	THF	PRA	INT	.	0.3V/uS	+18V	-18V	70C	94dB	6MV	50NA	25NA	250MWF	2MA	10V	15V	30V	.	.	6MW	2MA	70dB	74dB	2M
SF.C2776PM	THF	PRA	INT	.	0.3V/uS	+18V	-18V	125C	106dB	5MV	50NA	15NA	250MWF	2MA	10V	15V	30V	.	.	6MW	2MA	70dB	76dB	2M
SF.C2778C	THF	PRA	EXT	.	0.3V/uS	+18V	-18V	70C	94dB	6MV	50NA	25NA	310MWF	2MA	10V	15V	30V	.	.	5.7MW	2UA	70dB	76dB	2M
SF.C2778DC	THF	PRA	EXT	.	0.3V/uS	+18V	-18V	70C	94dB	6MV	50NA	25NA	310MWF	2MA	10V	15V	30V	.	.	5.7MW	2UA	70dB	76dB	2M
SF.C2778EC	THF	PRA	EXT	.	0.3V/uS	+18V	-18V	70C	94dB	6MV	50NA	25NA	670MWF	2MA	10V	15V	30V	.	.	5.7MW	2UA	70dB	76dB	2M
SF.2778KM	THF	PRA	EXT	.	0.3V/uS	+18V	-18V	125C	100dB	5MV	50NA	15NA	670MWF	2MA	10V	15V	30V	.	.	5.4MW	2UA	70dB	76dB	2M
SF.C2778M	THF	PRA	EXT	.	0.3V/uS	+18V	-18V	125C	100dB	5MV	50NA	15NA	500MWF	2MA	10V	15V	30V	.	.	5.4MW	2UA	70dB	76dB	2M
SF.C2778PC	THF	PRA	EXT	.	0.3V/uS	+18V	-18V	70C	94dB	6MV	50NA	25NA	250MWF	2MA	10V	15V	30V	.	.	5.7MW	2UA	70dB	76dB	2M
SF.C2778PM	THF	PRA	EXT	.	0.3V/uS	+18V	-18V	125C	100dB	5MV	50NA	15NA	250MWF	2MA	10V	15V	30V	.	.	5.4MW	2UA	70dB	76dB	2M
SF.C2861C	THF	GPU	EXT	.	3V/uS	+10V	-10V	70C	75dB	10MV	1.0uA	0.3uA	500MWF	25MA	10V	.	10V	35uV/C	.	2MA	60dB	74dB	50K	
SF.C2861DC	THF	GPU	EXT	.	3V/uS	+10V	-10V	70C	75dB	10MV	1.0uA	0.3uA	500MWF	25MA	10V	.	10V	35uV/C	.	2MA	60dB	74dB	50K	
SF.C2861DT	THF	GPU	EXT	.	3V/uS	+10V	-10V	85C	75dB	10MV	1.0uA	0.3uA	500MWF	25MA	10V	.	10V	35uV/C	.	2MA	60dB	74dB	50K	
SF.C2861M	THF	GPU	EXT	.	3V/uS	+10V	-10V	125C	85dB	4MV	0.7uA	0.1uA	500MWF	25MA	10V	.	10V	25uV/C	.	2MA	70dB	74dB	50K	
SF.C2861PM	THF	GPU	EXT	.	3V/uS	+10V	-10V	125C	85dB	4MV	0.7uA	0.1uA	500MWF	25MA	10V	.	10V	25uV/C	.	2MA	70dB	74dB	50K	
SF.C2861T	THF	GPU	EXT	.	3V/uS	+10V	-10V	85C	75dB	10MV	1.0uA	0.3uA	500MWF	25MA	10V	.	10V	35uV/C	.	2MA	60dB	74dB	50K	
SG101AD	SKU	GPU	EXT	.	.	+22V	-22V	125C	94dB	2MV	75NA	10NA	500MWF	5MA	12V	15V	30V	15uV/C	.	3MA	80dB	80dB	1.5M	
SG101AJ	SKU	GPU	EXT	.	.	+22V	-22V	125C	94dB	2MV	75NA	10NA	500MWF	5MA	12V	15V	30V	15uV/C	.	3MA	80dB	80dB	1.5M	
SG101AT	SKU	GPU	EXT	.	.	+22V	-22V	125C	94dB	2MV	75NA	10NA	500MWF	5MA	12V	15V	30V	15uV/C	.	3MA	80dB	80dB	1.5M	
SG101D	SKU	GPU	EXT	.	.	+22V	-22V	125C	94dB	5MV	1.5uA	0.5uA	500MWF	5MA	12V	15V	30V	15uV/C	.	3MA	70dB	70dB	300K	
SG101F	SKU	GPU	EXT	.	.	+22V	-22V	125C	94dB	5MV	1.5uA	0.5uA	500MWF	5MA	12V	15V	30V	15uV/C	.	3MA	70dB	70dB	300K	
SG101J	SKU	GPU	EXT	.	.	+22V	-22V	125C	94dB	5MV	1.5uA	0.5uA	500MWF	5MA	12V	15V	30V	15uV/C	.	3MA	70dB	70dB	300K	
SG101T	SKU	GPU	EXT	.	.	+22V	-22V	125C	94dB	5MV	1.5uA	0.5uA	500MWF	5MA	12V	15V	30V	15uV/C	.	3MA	70dB	70dB	300K	
SG102J	SKU	VFA	INT	.	15V/uS	+18V	-18V	125C	0dB	4MV	3NA	.	500MWF	1MA	10V	15V	15V	50uV/C	.	6MA	.	70dB	10G	.
SG102T	SKU	VFA	INT	.	.	+18V	-18V	125C	0dB	5MV	10NA	.	500MWF	1MA	10V	.	.	30uV/C	.	6MA	.	60dB	10G	.
SG107D	SKU	GPK	INT	.	.	+22V	-22V	125C	94dB	2MV	75NA	10NA	500MWF	5MA	12V	15V	30V	15uV/C	.	3MA	80dB	80dB	1.5M	

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_{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_{IDR} = 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
- ϕ,ϕ^* = 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 SUBSTITUTE	USA SUBSTITUTE	ISS	TYPE NUMBER	
T05-8/1M	G	E+	E-	V-M	N	N	R	V+	.	.	.	.	.	.	.	.	LM710CH	UA710HC	0	SF.C2710C
DIL-14/1P	N	G	E+	E-	N	V-	N	N	R	N	V+	N	N	N	.	.	.	UA710DM	0	SF.C2710EC	
DIL-14/1C	N	G	E+	E-	N	V-	N	N	R	N	V+	N	N	N	.	.	.	UA710DM	0	SF.C2710KM	
T05-8/1M	G	E+	E-	V-M	N	N	R	V+	.	.	.	.	.	.	.	.	LM710H	UA710HM	0	SF.C2710M
FLP-10/3G	G	E+	E-	N	V-	R	N	V+	N	N	.	.	.	.	.	.	.	UA710FM	0	SF.C2710PM
T05-10/1M	G	S1	E-1	E+1	V-	E+2	E-2	S2	R	V+	.	.	.	.	.	.	LM711CH	UA711HC	0	SF.C2711C
DIL-14/1P	N	E-1	E+1	V-	E+2	E-2	N	N	S2	R	V+	G	S1	N	.	.	LM711CN	UA711DC	0	SF.C2711EC	
DIL-14/1C	N	E-1	E+1	V-	E+2	E-2	N	N	S2	R	V+	G	S1	N	.	.	.	UA711DM	0	SF.C2711KM	
T05-10/1M	G	S1	E-1	E+1	V-	E+2	E-2	S2	R	V+	.	.	.	.	.	.	LM711H	UA711HM	0	SF.C2711M
FLP-10/3G	E-1	E+1	V-	E+2	E-2	S2	R	V+	G	S1	.	.	.	.	.	.	.	UA711FM	0	SF.C2711PM
T05-8/1M	T	E-	E+	V-M	T*	R	V+	N	.	.	.	.	.	.	.	.	TBA221	UA741HC	0	SF.C2741C
DIL-8/1P	T	E-	E+	V-	T*	R	V+	N	.	.	.	.	.	.	.	.	TBA221B	UA741TC	0	SF.C2741DC
DIL-14/1P	N	N	T	E-	E+	V-	N	N	T*	R	V+	N	N	N	.	.	LM741ED	UA741EDC	0	SF.C2741EC	
DIL-14/1C	N	N	T	E-	E+	V-	N	N	T*	R	V+	N	N	N	.	.	LM741D	UA741DM	0	SF.C2741KM	
T05-8/1M	T	E-	E+	V-M	T*	R	V+	N	.	.	.	.	.	.	.	.	TBA222	UA741HM	0	SFC2741M
FLP-10/3P	N	T	E-	E+	V-	T*	R	V+	N	N	.	.	.	.	.	.	LM741F	UA741FM	0	SF.C2741PM
T05-10/1M	R1	V+1	E-1	E+1	V-	E+2	E-2	V+2	R2	N	.	.	.	.	.	.	TBB0747	UA747HC	0	SF.C2747C
DIL-14/1P	E-1	E+1	T1	V-	T2	E+2	E-2	T*2	V+2	R2	N	R1	V+1	T*1	.	.	LM747ED	UA747EDC	0	SF.C2747EC	
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	.	.	LM747D	UA747DM	0	SF.C2747KM	
T05-10/1M	R1	V+1	E-1	E+1	V-	E+2	E-2	V+2	R2	N	.	.	.	.	.	.	TBC0747	UA747HM	0	SF.C2747M
T05-8/1M	FT	E-	E+	V-	T*	R	V+	F*	.	.	.	.	.	.	.	.	TBB0748	UA748HC	0	SF.C2748C
DIL-8/1P	FT	E-	E+	V-	T*	R	V+	F*	.	.	.	.	.	.	.	.	TBB0748	UA748TC	0	SF.C2748DC
T05-8/1M	FT	E-	E+	V-	T*	R	V+	F*	.	.	.	.	.	.	.	.	TBC0748	UA748HM	0	SF.C2748M
T05-8/4M	X	V+	E+	E-	X	V-	K	ϕ	.	.	.	.	.	.	.	.	TAA761	.	0	SF.C2761C
DIL-6/1P	V+	E+	E-	V-	K	ϕ	.	.	.	.	.	.	.	.	.	.	TAA761A	.	0	SF.C2761DC
DIL-6/1P	V+	E+	E-	V-	K	ϕ	.	.	.	.	.	.	.	.	.	.	TAA765A	.	0	SF.C2761DT
T05-8/4M	X	V+	E+	E-	X	V-	K	ϕ	.	.	.	.	.	.	.	.	TAA762	.	0	SF.C2761M
FLP-10/3G	V+	N	E+	N	E-	V-	N	K	N	ϕ	.	.	.	.	.	.	.	.	0	SFC.2761PM
T05-8/4M	X	V+	E+	E-	X	V-	K	ϕ	.	.	.	.	.	.	.	.	TAA765	.	0	SF.C2761T
T05-8/1M	T	E-	E+	V-	T*	R	V+	B	.	.	.	.	.	.	.	.	MC1776CG	UA776HC	0	SF.C2776C
DIL-8/1P	T	E-	E+	V-	T*	R	V+	B	.	.	.	.	.	.	.	.	.	UA776TC	0	SF.C2776DC
DIL-14/1P	N	N	T	E-	E+	V-	N	N	T*	R	V+	B	N	N	.	.	MC1776L	UA776DM	0	SF.C2776EC	
DIL-14/1P	N	N	T	E-	E+	V-	N	N	T*	R	V+	B	N	N	.	.	MC1776L	UA776DM	0	SF.C2776KM	
T05-8/1M	T	E-	E+	V-	T*	R	V+	B	.	.	.	.	.	.	.	.	MC1776G	UA776HM	0	SF.C2776M
FLP-10/3G	N	T	E-	E+	V-	T*	R	V+	B	N	.	.	.	.	.	.	.	.	0	SF.C2776PC
FLP-10/3G	N	T	E-	E+	V-	T*	R	V+	B	N	.	.	.	.	.	.	.	.	0	SF.C2776PM
T05-8/1M	F	E-	E+	V-	TF*	R	V+	B	.	.	.	.	.	.	.	.	.	.	0	SFC2778C
DIL-8/1P	F	E-	E+	V-	TF*	R	V+	B	.	.	.	.	.	.	.	.	.	.	0	SF.C2778DC
DIL-14/1P	N	N	F	E-	E+	V-	N	N	TF*	R	V+	B	N	N	.	.	.	.	0	SF.C2778EC
DIL-14/1C	N	N	F	E-	E+	V-	N	N	TF*	R	V+	B	N	N	.	.	.	.	0	SF.C2778KM
T05-8/1M	F	E-	E+	V-	TF*	R	V+	B	.	.	.	.	.	.	.	.	.	.	0	SF.C2778M
FLP-10/3G	N	F	E-	E+	V-	TF*	R	V+	B	N	.	.	.	.	.	.	.	.	0	SFC2778PC
FLP-10/3G	N	F	E-	E+	V-	TF*	R	V+	B	N	.	.	.	.	.	.	.	.	0	SF.C2778PM
T05-8/1M	X	V+	E+	E-	X	V-	K	ϕ	TAA861	.	0	SF.C2861M
DIL-6/1P	V+	E+	E-	V-	K	ϕ	TAA861A	.	0	SF.C2861DC
DIL-6/1P	V+	E+	E-	V-	K	ϕ	TAA865A	.	0	SF.C2861DT
T05-8/1M	X	V+	E+	E-	X	V-	K	ϕ	TAA862	.	0	SF.C2861M
FLP-10/3G	V+	N	E+	N	E-	V-	N	K	N	ϕ	.	.	.	.	.	.	.	.	0	SF.C2861PM
T05-8/1M	X	V+	E+	E-	X	V-	K	ϕ	TAA865	.	0	SF.C2861T
DIL-14/1C	N	N	FT	E-	E+	V-	N	N	T*	R	V+	F*	N	N	.	.	UA101AD	LM101AJ14	0	SG101AD	
FLP-10/3C	N	FT	E-	E+	V-	T*	R	V+	F*	N	SFC2101APM	LM101AF	0	SG101AF
DIL-14/1C	N	N	FT	E-	E+	V-	N	N	T*	R	V+	F*	N	N	.	.	.	UA101AD	LM101AJ14	0	SG101AJ
T05-8/1M	FT	E-	E+	V-M	T*	R	V+	F*	SFC2101A	LM101AH	0	SG101AT
DIL-14/1C	N	N	FT	E-	E+	V-	N	N	T*	R	V+	F*	N	N	.	.	.	UA101AD	LM101J14	0	SG101D
FLP-10/3C	N	FT	E-	E+	V-	T*	R	V+	F*	N	SFC2101APM	LM101F	0	SG101F
DIL-14/1C	N	N	FT	E-	E+	V-	N	N	T*	R	V+	F*	N	N	.	.	.	UA101AD	LM101J14	0	SG101J
T05-8/1M	FT	E-	E+	V-M	T*	R	V+	F*	SFC2101A	LM101H	0	SG101T
DIL-14/1C	N	N	T	N	E+	V-	N	N	L	R	V+	T*	N	N	.	.	.	SNS2110JA	LM110D	0	SG102J
T05-8/1M	T	N	E+	V-	L	R	V+	T*	UA102M	LM102H	0	SG102T
DIL-14/1C	N	N	N	E-	E+	V-	N	N	N	R	V+	N	N	N	.	.	.	SNS2107JA	LM107D	0	SG107D

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
- μ A = microamps
- μ S = microseconds
- μ V = microvolts
- μ W = microwatts
- μ 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
- ϕ, ϕ^* = 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

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

Appendix C

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

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

Appendix E

Tabulation Codes for Applications

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

Appendix G

Codes for Leadout Connections

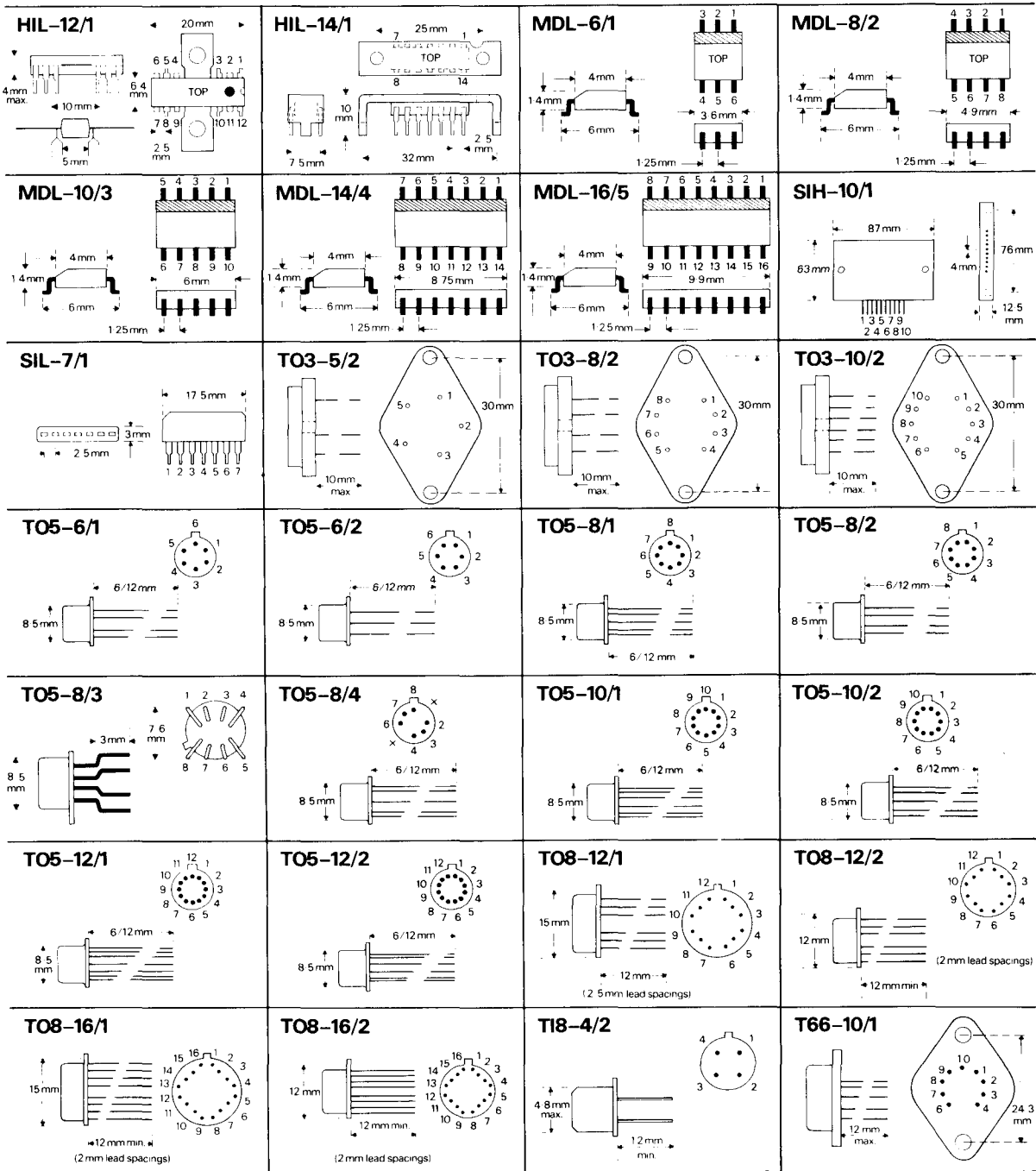
I: Connection Codes in Serial Order

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

