



Limiter Amplifier

179 - 250 D

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LIMITER AMPLIFIER 179-250D

TECHNICAL SPECIFICATIONS

179-2511-D-3

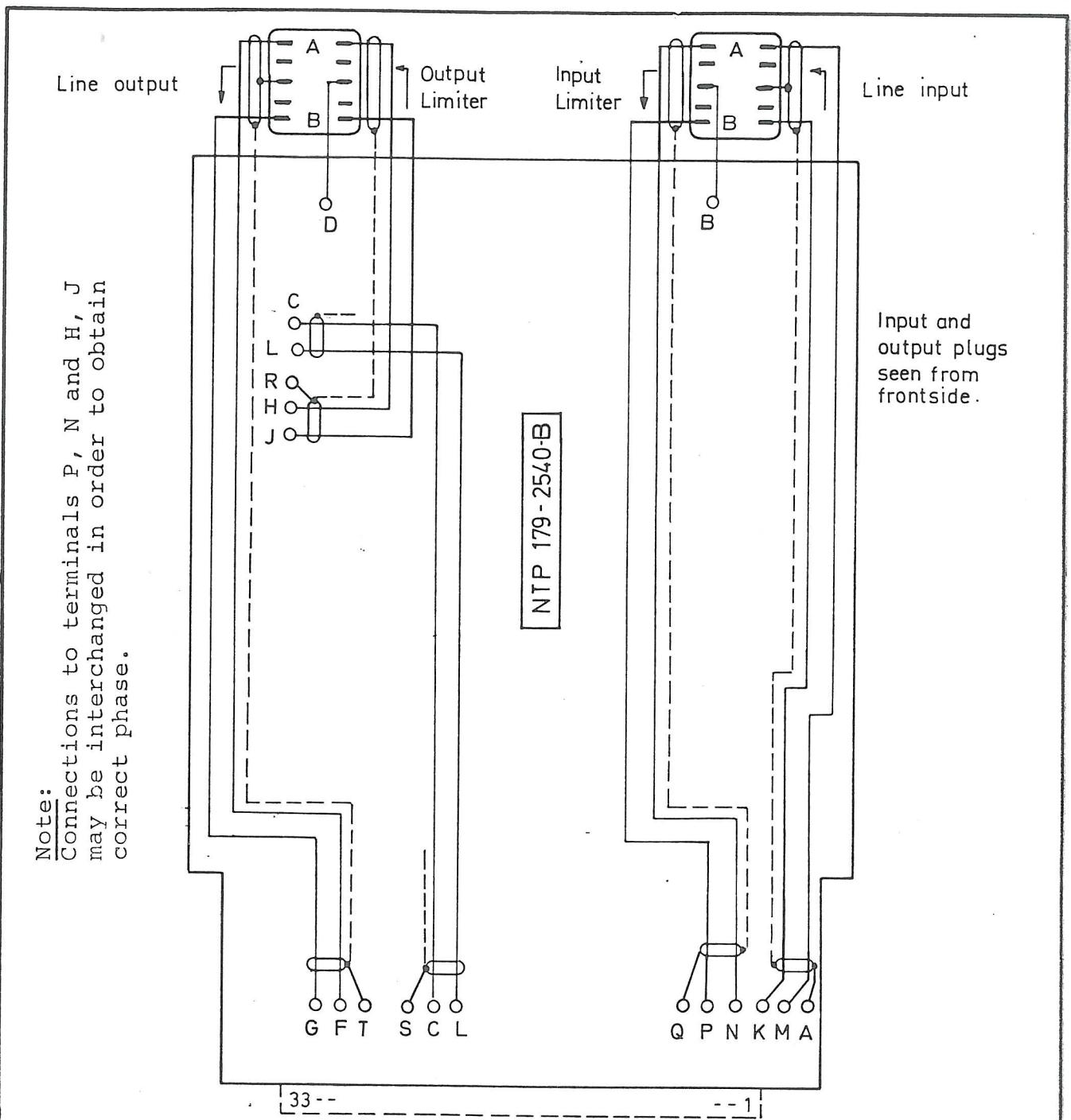
Supply voltage	:	24V DC \pm 10% positive ground
Max. ripple voltage	:	0,1V pp 50Hz to 20kHz
Current consumption steady state, no signal	:	approx. 75mA
" " " " , during limiting	:	approx. 85mA incl. indicator diode
" " " during heat up	:	approx. 250mA in 45 sec.
Temperature range	:	-20° to +60°C (+4 to +140°F)
Frequency range within 0,5dB	:	20Hz to 20kHz
Input impedance at 1kHz	:	2kOhm \pm 15% balanced floating
Output impedance	:	20 Ohm \pm 15% balanced floating
Minimum load impedance	:	2000Ohm
Limiting threshold (input)	:	+16,5, +7,5, +1,5, -4,5, -10,5, -16,5dBu
Output in limiting range	:	16,5dBu \pm 0,5dBu
Limiting range depending on setting of input.	:	
Limiting threshold	:	6,15,21,27,30dB (max. 30dB)
Input overload level	:	+21dBu (8,6 V rms, sinus)
Distortion, 20hz to 20kHz, 0 to 20dB lim.	:	0,5%
" " " 20 " ,20 " 30dB "	:	1%
Attack time see NOTE 1	:	See curve 179-2515
Recovery time, depending on magnitude and duration of input signal	:	See curves 179-2512/13 and 14
Control voltage output see NOTE 2	:	1 Volt DC per 5dB gain reduction
Control current output for instrument (An instrument with internal resistance of appr. 63 Ohm such as NTP: D48PL or 179-900 should be used).	:	0,25mA DC per 5dB gain reduction. Instrument 0-1mA DC, gives limiting indication 0-20dB (linear DB scale)
Limiting indicator output (LED indicator)	:	10mA DC
Signal to Noise Ratio at limiting threshold	:	81dB flat response RMS
Frequency dependent limiting threshold:	:	
Terminal 24 connected to 25	:	Time constant 50 usec.
" 24 " " 26	:	Time constant 75 usec.
No connections	:	Frequency independent threshold.

NOTE 1:

The output limiting level stated above applies to steady state conditions.
Peaks shorter than the attacktime will be limited at a level max. 3dB above steady state conditions.

NOTE 2: Stereo Operation.

The control voltage of two units may be linked so as to obtain equal gain-reduction in the two stereo channels. In this mode terminals 18 "Stereo Control Voltage" and 15 "12V DC equalizing" respectively of the two limiters are parallel connected.



Terminal:

- 1: Input cable screen, isolated.
- 2: A Input
- 3: B
- 4: As term.1., via Input plug.
- 5: not connected=Input Threshold +15 dBu
- 6: conn.to term.5= " + 6 dBu
- 7: " " 5= " 0 dBu
- 8: " " 5= " - 6 dBu
- 9: " " 5= " -12 dBu
- 10: " " 5= " -18 dBu
- 11,12,13 & 14: Supply +
- 15: 12V dc equalizing (stereo operation)

- 16: + Instrument output
- 17: -
- 18: Stereo Control
- 19,20,21 & 22: supply -
- 23: LED indicator (negative)
- 24: Deemphasis, see below
- 25: Conn.to term.24= 50μsec.
- 26: " " 24= 75μsec.
- 27: Output cable screen isolated.
- 28,29: A output
- 30,31: B "
- 32: As term. 27 via output plug
- 33: Housing.

Pos.	Antal	Materiale	Behandl.	Del af
Målestok				
Tolerance	mm			
Tegnet	13-9-72 IW	LIMITER AMPLIFIER 179-250-B		
Godkendt	PTJ	Terminals & Interconnections		
Revideret	4			
				N. TØNNES PEDERSEN A/S
				179-2502-B-4

etterser
2/ 2/73 40
3/ 24/74 BM/IW

Normally the Limiter Amplifier will stay correctly adjusted, except when a component has failed and has been replaced; then it may be necessary to make certain adjustments. Before attempting to make any adjustments, note the tolerances stated in the Technical Specifications. The functions of the trimpotentiometers are as follows:

P4: Compensates for individual pinch-off of the F.E.T. (Q1)

P5: Compensates for individual slope $\frac{\Delta R}{\Delta V} \frac{SD}{GS}$ of the F.E.T.

P2: Linearity adjustment of the FET Attenuator circuit.

P3: Adjustments for minimum distortion of the FET Attenuator.

P1: Input common mode rejection

Do not attempt to make any adjustments until the current consumption has fallen to a steady level, appr. 75mA after 60 sec.

Correct sequence of adjustments as follows:

See Note 1.

b. Pinch-off adjust by P4

Conditions: Input signal -16.5dBu 1kHz on terminal 2 and 3.

P4 is adjusted until the output voltage is +16.5dBu (limiting threshold -16.5dBu: term. 5 connected to term. 10).

The adjustment range can be altered by connecting or disconnecting R30 and / or R31.

c. Slope dB/V and Linearity adjustment by P5 and P2.

Conditions: Like referred under pos. b.

A floating external DC-source 0-6V is connected between terminal 17 and 18, terminal 18 positive. The DC voltage is set to 3.0 Volt, and P5 is adjusted, so that the output level is 1.5dBu (15dB attenuation). Now the DC voltage is set to 6.0 Volt and P2 is adjusted, until the output level is -13.5dBu (30dB attenuation). Because of interaction between P5 and P2, the adjustments are repeated until correct output level is obtained.

e. Distortion adjustment of P3.

Term. 5 still connected to term. 10.

Conditions: +3.5dBu 1kHz on term. 2 and 3.

P3 is adjusted to minimum distortion.

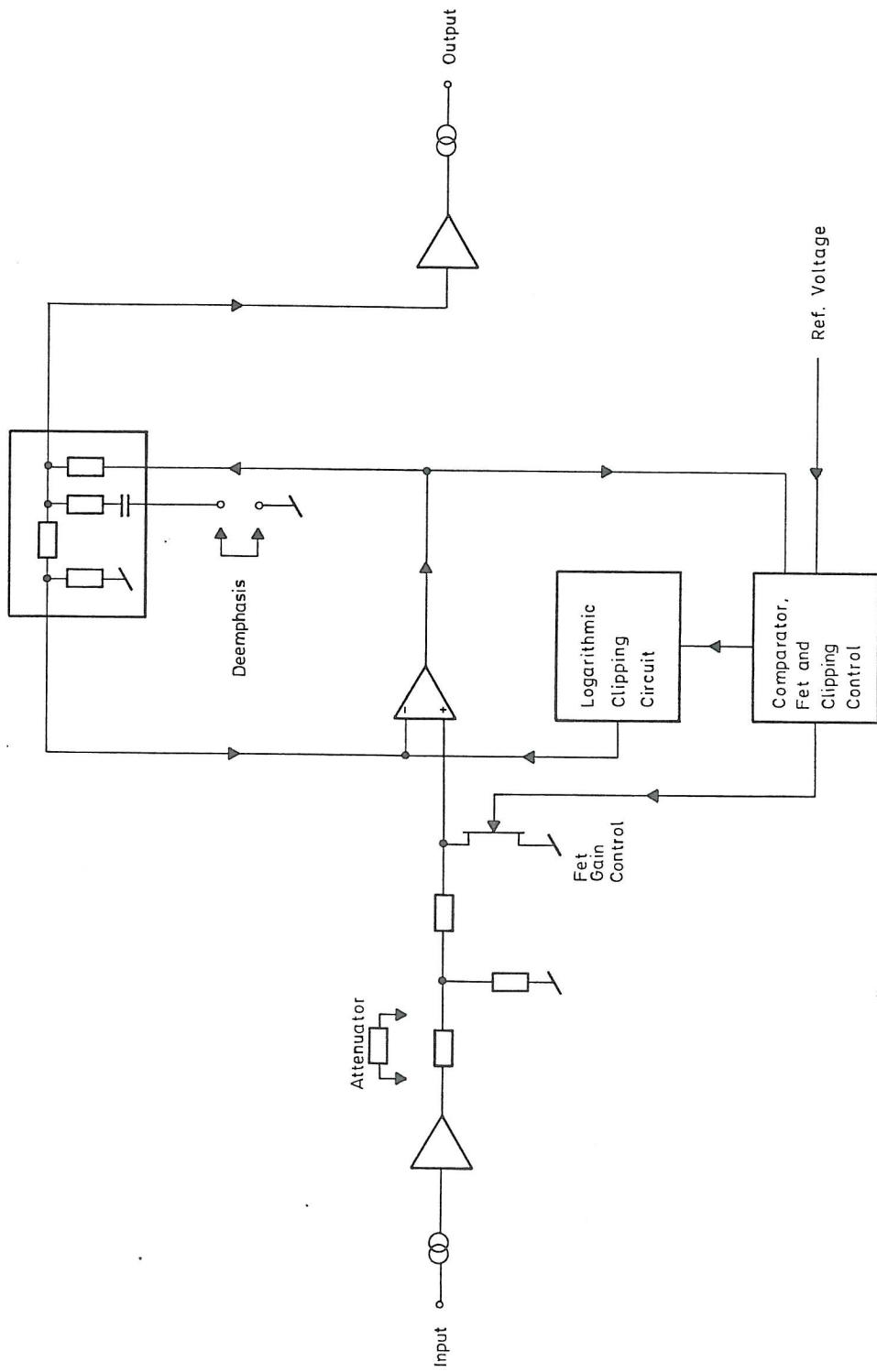
Because of interaction between P3 and P4, the adjustment mentioned under pos. b might be carried out once more.

f. Input transformer symmetrically balancing by P1.

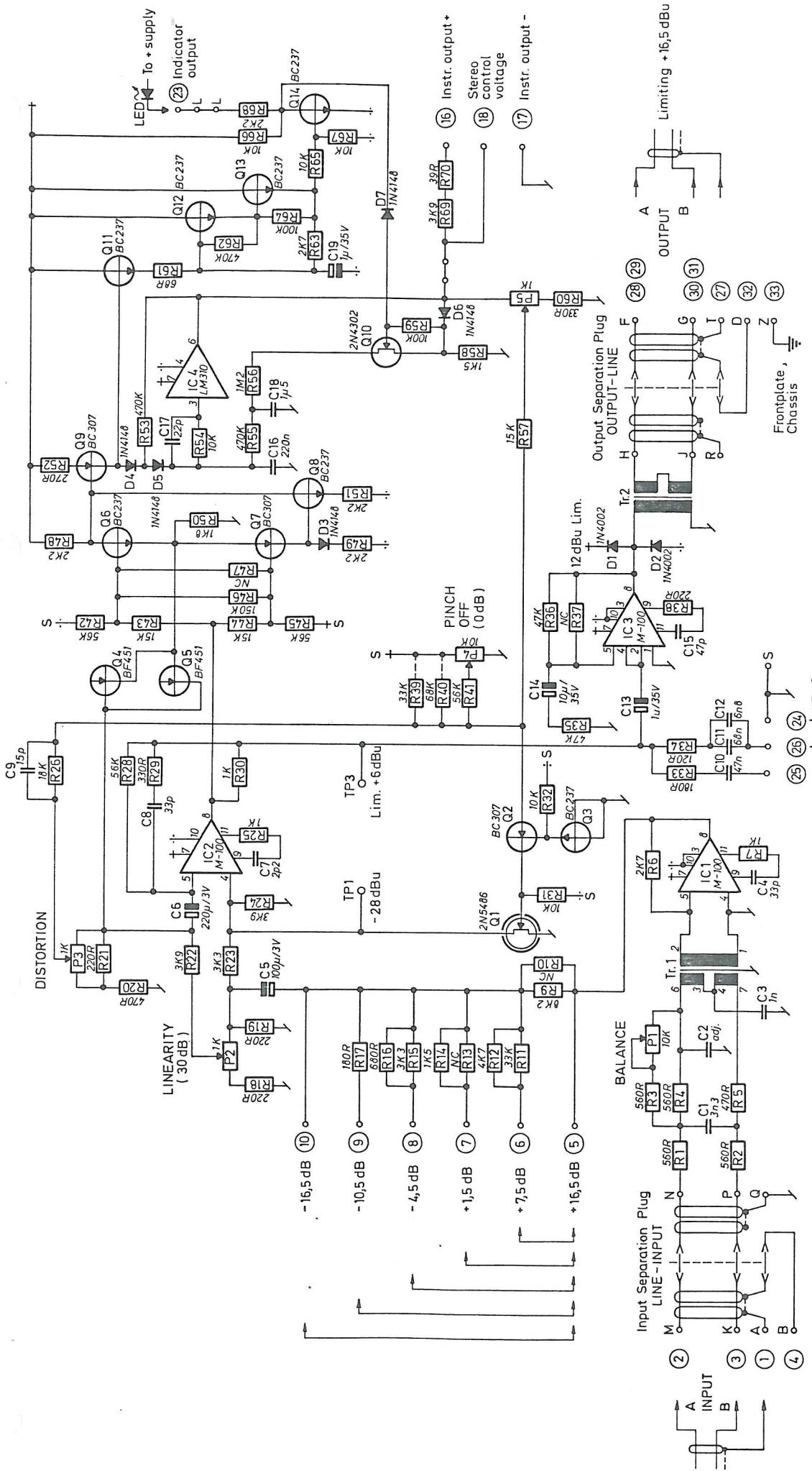
Conditions: Input terminals 2 and 3 are connected together, and an input signal of +15dBu level 15kHz is applied between term. 2,3 and term. 24. Trimmer potentiometer P1 is turned to maximum attenuation of the output signal which means best common mode rejection.

g. The adjustment mentioned under position b is checked again, and if necessary carried out once more.

Note 1: During alignment of the unit, no deemphasis should be used: Term. 25 and 26 must be connected.

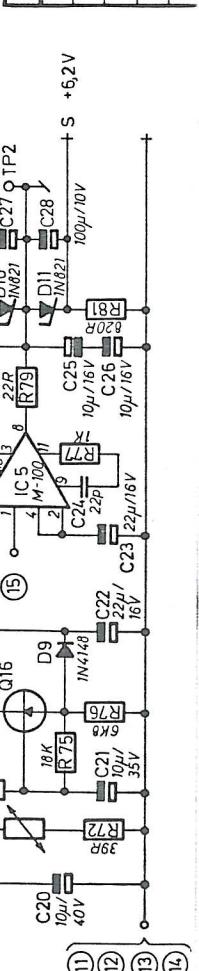


Block Diagram Limiter 179-250D



Terminal numbers in circles correspond to 33-pole ISEP card connector

Pos.:	Aantal:	Materiale:	Behandl:	Detail:
M Messlok:				
Tolerans: ±	mm			
Tegnet:	19.11.81.T.L.			
Godkendt:				
Rev. dato:				



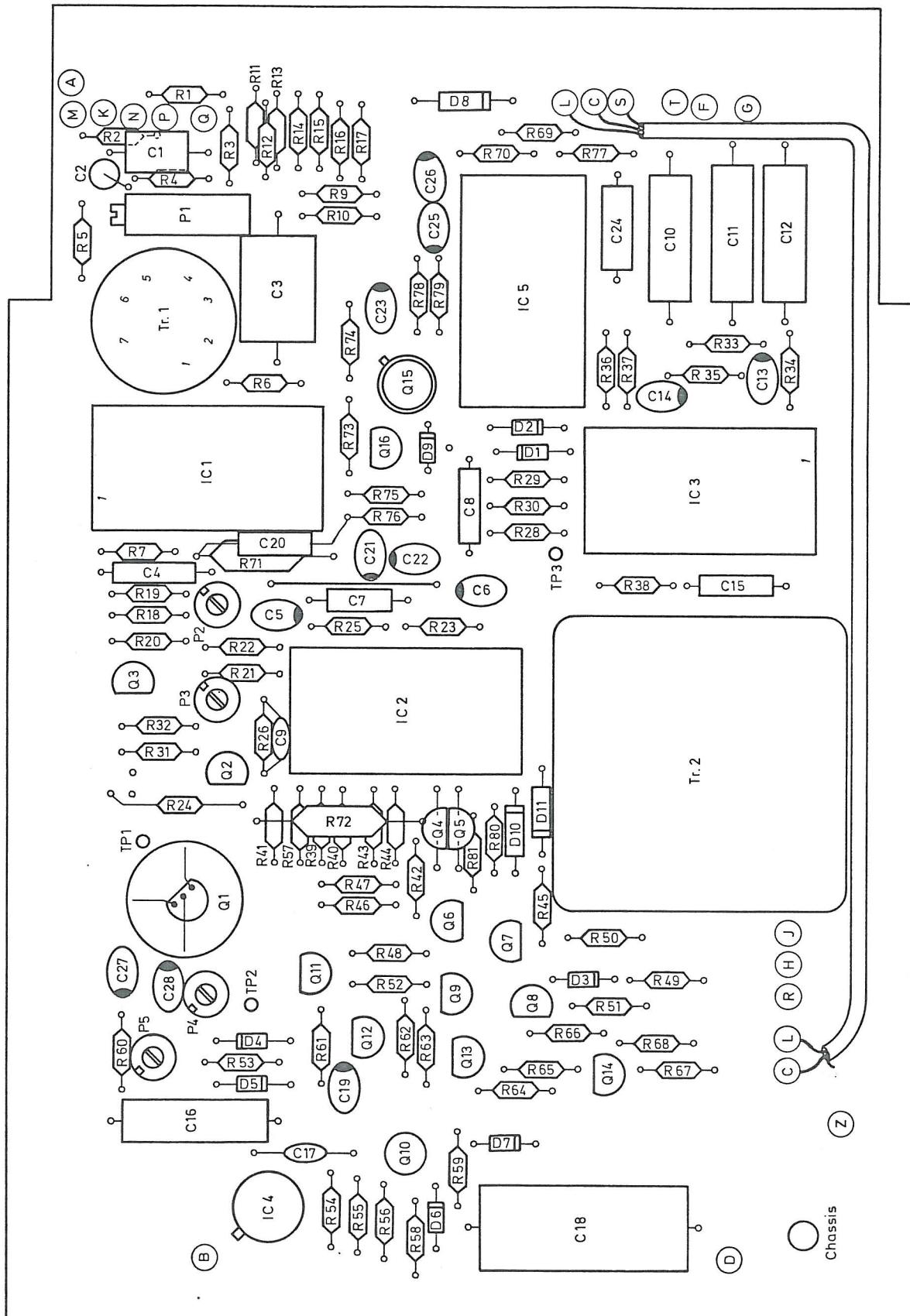
- Supply
+ Supply

+ Supply

* Supply

Retteleser

NTP
NTP ELEKTRONIK A/S
179-2530-D Diagram



Mål	: 110,5 x 159 mm
Konstruktør:	B. S.
Tegnet:	: 30.9.83. T.L.
Godkendt:	:
Revideret:	:

Limiter Amplifier
Component Lay - out

NTP
NTP ELEKTRONIK A/S

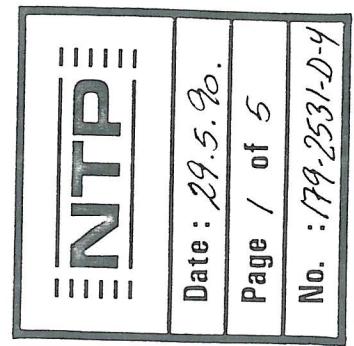
179-2541-D-3

NTP 179-250D LIMITER AMPLIFIER

PARTS LIST 179-250D

PARTS LIST

REF.NO	NTP-ID.	DESCRIPTION	QTY	MANUFACT/DRW.NO.	PART NO.
R 79	RCA-2220	RESISTOR CARBON 22R 0 .66W 5%	1	MBB 0207	22R
R 70	RCA-2390	RESISTOR CARBON 39R 0 .66W 5%	1	MBB 0207	39R
R 61	RCA-2680	RESISTOR CARBON 68R 0 .66W 5%	1	MBB 0207	68R
R 34	RCA-3120	RESISTOR CARBON 120R 0 .66W 5	1	MBB 0207	120R
R 17	RCA-3180	RESISTOR CARBON 180R 0 .66W 5	1	MBB 0207	180R
R 33	RCA-3180	RESISTOR CARBON 180R 0 .66W 5	1	MBB 0207	180R
R 18	RCA-3220	RESISTOR CARBON 220R 0 .66W 5	1	MBB 0207	220R
R 19	RCA-3220	RESISTOR CARBON 220R 0 .66W 5	1	MBB 0207	220R
R 21	RCA-3220	RESISTOR CARBON 220R 0 .66W 5	1	MBB 0207	220R
R 38	RCA-3220	RESISTOR CARBON 220R 0 .66W 5	1	MBB 0207	220R
R 52	RCA-3270	RESISTOR CARBON 270R 0 .66W 5	1	MBB 0207	270R
R 29	RCA-3330	RESISTOR CARBON 330R 0 .66W 5	1	MBB 0207	330R
R 60	RCA-3330	RESISTOR CARBON 330R 0 .66W 5	1	MBB 0207	330R
R 5	RCA-3470	RESISTOR CARBON 470R 0 .66W 5	1	MBB 0207	470R
R 20	RCA-3470	RESISTOR CARBON 470R 0 .66W 5	1	MBB 0207	470R
R 1	RCA-3560	RESISTOR CARBON 560R 0 .66W 5	1	MBB 0207	560R
R 2	RCA-3560	RESISTOR CARBON 560R 0 .66W 5	1	MBB 0207	560R
R 3	RCA-3560	RESISTOR CARBON 560R 0 .66W 5	1	MBB 0207	560R
R 4	RCA-3560	RESISTOR CARBON 560R 0 .66W 5	1	MBB 0207	560R
R 16	RCA-3680	RESISTOR CARBON 680R 0 .66W 5	1	MBB 0207	680R
R 80	RCA-3820	RESISTOR CARBON 820R 0 .66W 5	1	MBB 0207	820R
R 81	RCA-3820	RESISTOR CARBON 820R 0 .66W 5	1	MBB 0207	820R
R 7	RCA-4100	RESISTOR CARBON 1K 0 .66W 5%	1	MBB 0207	1K
R 25	RCA-4100	RESISTOR CARBON 1K 0 .66W 5%	1	MBB 0207	1K
R 30	RCA-4100	RESISTOR CARBON 1K 0 .66W 5%	1	MBB 0207	1K
R 77	RCA-4100	RESISTOR CARBON 1K 0 .66W 5%	1	MBB 0207	1K
R 78	RCA-4100	RESISTOR CARBON 1K 0 .66W 5%	1	MBB 0207	1K
R 14	RCA-4150	RESISTOR CARBON 1K5 0 .66W 5%	1	MBB 0207	1K5
R 58	RCA-4150	RESISTOR CARBON 1K5 0 .66W 5%	1	MBB 0207	1K5
R 50	RCA-4180	RESISTOR CARBON 1K8 0 .66W 5%	1	MBB 0207	1K8
R 48	RCA-4220	RESISTOR CARBON 2K2 0 .66W 5%	1	MBB 0207	2K2
R 49	RCA-4220	RESISTOR CARBON 2K2 0 .66W 5%	1	MBB 0207	2K2
R 51	RCA-4220	RESISTOR CARBON 2K2 0 .66W 5%	1	MBB 0207	2K2



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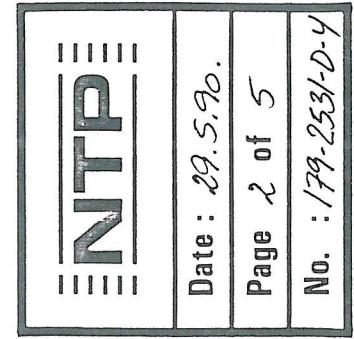
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No. : 179-253/-D-4

NTP 179-250D LIMITER AMPLIFIER

PARTS LIST

REF.NO	NTP-ID.	DESCRIPTION	QTY	MANUFACT/DRW.NO.	PART NO.
R 68	RCA-4220	RESISTOR CARBON 2K2 0.66W 5%	1	MBB 0207	2K2
R 6	RCA-4270	RESISTOR CARBON 2K7 0.66W 5%	1	MBB 0207	2K7
R 63	RCA-4270	RESISTOR CARBON 2K7 0.66W 5%	1	MBB 0207	2K7
R 15	RCA-4330	RESISTOR CARBON 3K3 0.66W 5%	1	MBB 0207	3K3
R 23	RCA-4330	RESISTOR CARBON 3K3 0.66W 5%	1	MBB 0207	3K3
R 22	RCA-4390	RESISTOR CARBON 3K9 0.66W 5%	1	MBB 0207	3K9
R 24	RCA-4390	RESISTOR CARBON 3K9 0.66W 5%	1	MBB 0207	3K9
R 69	RCA-4390	RESISTOR CARBON 3K9 0.66W 5%	1	MBB 0207	3K9
R 12	RCA-4470	RESISTOR CARBON 4K7 0.66W 5%	1	MBB 0207	4K7
R 76	RCA-4680	RESISTOR CARBON 6K8 0.66W 5%	1	MBB 0207	6K8
R 9	RCA-4820	RESISTOR CARBON 8K2 0.66W 5%	1	MBB 0207	8K2
R 31	RCA-5100	RESISTOR CARBON 10K 0.66W 5%	1	MBB 0207	10K
R 32	RCA-5100	RESISTOR CARBON 10K 0.66W 5%	1	MBB 0207	10K
R 54	RCA-5100	RESISTOR CARBON 10K 0.66W 5%	1	MBB 0207	10K
R 65	RCA-5100	RESISTOR CARBON 10K 0.66W 5%	1	MBB 0207	10K
R 66	RCA-5100	RESISTOR CARBON 10K 0.66W 5%	1	MBB 0207	10K
R 67	RCA-5100	RESISTOR CARBON 10K 0.66W 5%	1	MBB 0207	10K
R 74	RCA-5100	RESISTOR CARBON 10K 0.66W 5%	1	MBB 0207	10K
R 43	RCA-5150	RESISTOR CARBON 15K 0.66W 5%	1	MBB 0207	15K
R 44	RCA-5150	RESISTOR CARBON 15K 0.66W 5%	1	MBB 0207	15K
R 57	RCA-5150	RESISTOR CARBON 15K 0.66W 5%	1	MBB 0207	15K
R 26	RCA-5180	RESISTOR CARBON 18K 0.66W 5%	1	MBB 0207	18K
R 75	RCA-5180	RESISTOR CARBON 18K 0.66W 5%	1	MBB 0207	18K
R 73	RCA-5220	RESISTOR CARBON 22K 0.66W 5%	1	MBB 0207	22K
R 11	RCA-5330	RESISTOR CARBON 33K 0.66W 5%	1	MBB 0207	33K
R 39	RCA-5330	RESISTOR CARBON 33K 0.66W 5%	1	MBB 0207	33K
R 35	RCA-5470	RESISTOR CARBON 47K 0.66W 5%	1	MBB 0207	47K
R 36	RCA-5470	RESISTOR CARBON 47K 0.66W 5%	1	MBB 0207	47K
R 28	RCA-5560	RESISTOR CARBON 56K 0.66W 5%	1	MBB 0207	56K
R 41	RCA-5560	RESISTOR CARBON 56K 0.66W 5%	1	MBB 0207	56K
R 42	RCA-5560	RESISTOR CARBON 56K 0.66W 5%	1	MBB 0207	56K
R 45	RCA-5560	RESISTOR CARBON 56K 0.66W 5%	1	MBB 0207	56K
R 40	RCA-5680	RESISTOR CARBON 68K 0.66W 5%	1	MBB 0207	68K



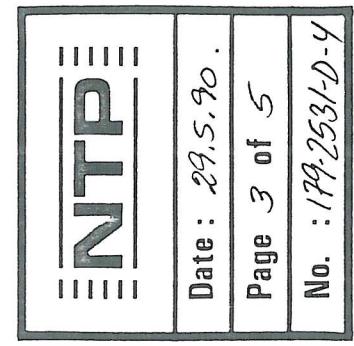
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No. : 179-2531-D-Y

NTP 179-250D LIMITER AMPLIFIER

REF. NO.	NTP-ID.	DESCRIPTION	QTY	MANUFACT/DRW.NO.	PART NO.
R 59	RCA-6100	RESISTOR CARBON 100K 0.66W 5%	1	MBB 0207	MBB 0207 100K
R 64	RCA-6100	RESISTOR CARBON 100K 0.66W 5%	1	MBB 0207	MBB 0207 100K
R 46	RCA-6150	RESISTOR CARBON 150K 0.66W 5%	1	MBB 0207	MBB 0207 150K
R 53	RCA-6470	RESISTOR CARBON 470K 0.66W 5%	1	MBB 0207	MBB 0207 470K
R 55	RCA-6470	RESISTOR CARBON 470K 0.66W 5%	1	MBB 0207	MBB 0207 470K
R 62	RCA-6470	RESISTOR CARBON 470K 0.66W 5%	1	MBB 0207	MBB 0207 470K
R 56	RCA-7120	RESISTOR CARBON 1M2 0.66W 5%	1	MBB 0207	MBB 0207 1M2
R 71	RCC-2390	RESISTOR CARBON 39R 0.50W 5%	1	SBD 0411	SBD 0411 39R
R 72	RCC-2390	RESISTOR CARBON 39R 0.50W 5%	1	SBD 0411	SBD 0411 39R
R 8	RAA-9999	RESISTOR, NOT USED	1	RAA-9999	RAA-9999
R 10	RAA-9999	RESISTOR, NOT USED	1	RAA-9999	RAA-9999
R 13	RAA-9999	RESISTOR, NOT USED	1	RAA-9999	RAA-9999
R 27	RAA-9999	RESISTOR, NOT USED	1	RAA-9999	RAA-9999
R 37	RAA-9999	RESISTOR, NOT USED	1	RAA-9999	RAA-9999
R 47	RAA-9999	RESISTOR, NOT USED	1	RAA-9999	RAA-9999
P 2	RFB-4100	TRIMPOTENTIOMETER 1K	1	BOURNS 3329	3329H-1-102
P 3	RFB-4100	TRIMPOTENTIOMETER 1K	1	BOURNS 3329	3329H-1-102
P 5	RFB-4100	TRIMPOTENTIOMETER 1K	1	BOURNS 3329	3329H-1-102
P 4	RFB-5100	TRIMPOTENTIOMETER 10K	1	BOURNS 3329	3329H-1-103
P 1	RFA-5100	TRIMPOTENTIOMETER 10K	1	BOURNS 3006	3006P-1-103
C 7	CCB-0122	CAP CERAMIC 2.2PF/100V	1	FH 2222	2222 632 03228
C 9	CCB-0215	CAP CERAMIC 15PF/100V	1	FH 2222	2222 632 58159
C 20	CFD-0810	CAP ELECTROLYTIC 10UF/40V	1	ROE EB	ROE EB 15UF
C 18	CLB-0715	CAP POLYESTER 1.5UF/63V	1	ROE MKT	1813
C 16	CLF-0622	CAP POLYESTER 220NF/250V	1	SIEMENS B32234	1813 515/065
C 10	CLK-0547	CAP POLYCARBONATE 47NF/63V	1	ROE KC	1853
C 11	CLK-0568	CAP POLYCARBONATE 68NF/63V	1	ROE KC	1853
C 12	CND-0468	CAP POLYSTYRENE 6.8NF/63V	1	FH 2222	2222 424 46802
C 17	CNE-0222	CAP POLYSTYRENE 22PF/160V	1	SIEMENS B31110	B31110 A1220 F
C 24	CNE-0222	CAP POLYSTYRENE 22PF/160V	1	SIEMENS B31110	B31110 A1220 F
C 4	CNE-0233	CAP POLYSTYRENE 33PF/160V	1	SIEMENS B31110	B31110 A1330 F
C 8	CNE-0233	CAP POLYSTYRENE 33PF/160V	1	SIEMENS B31110	B31110 A1330 F
C 15	CNE-0247	CAP POLYSTYRENE 47PF/160V	1	SIEMENS B31110	B31110 A1470 H

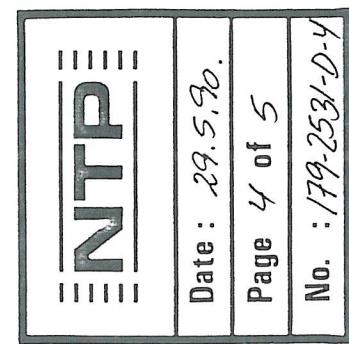


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No. : 179-2531-D-4

REF. NO	NTP-ID.	DESCRIPTION	QTY	MANUFACT/DRW.NO.	PART NO.
C 1	CNE-0433	CAP POLYSTYRENE 3 .3NF /160V	1	SIEMENS B31310	B31310 A1332 H
C 3	CNG-0410	CAP POLYSTYRENE 1NF /630V	1	SIEMENS B31063	B31063 A6102 J
C 5	CTA-0910	CAP TANTALUM 100UF /3V	1	ERO ETP	ETP 3G 1000UF
C 6	CTA-0922	CAP TANTALUM 220UF /3V	1	ERO ETQ	ETQ 5 220UF
C 27	CTC-0910	CAP TANTALUM 100UF /10V	1	ERO ETQ	ETQ 5 100UF
C 28	CTC-0910	CAP TANTALUM 100UF /10V	1	ERO ETQ	ETQ 5 100UF
C 25	CTD-0810	CAP TANTALUM 10UF /16V	1	ERO ETP	ETP 2E 10UF
C 26	CTD-0810	CAP TANTALUM 10UF /16V	1	ERO ETP	ETP 2E 10UF
C 22	CTD-0822	CAP TANTALUM 22UF /16V	1	ERO ETP	ETP 3G 22UF
C 23	CTD-0822	CAP TANTALUM 22UF /16V	1	ERO ETP	ETP 3G 22UF
C 13	CTF-0710	CAP TANTALUM 1UF /3.5V	1	ERO ETP	ETP 1A 1UF
C 19	CTF-0710	CAP TANTALUM 1UF /35V	1	ERO ETP	ETP 1A 1UF
C 14	CTF-0810	CAP TANTALUM 10UF /35V	1	ERO ETP	ETP 3G 10UF
C 21	CTF-0810	CAP TANTALUM 10UF /35V	1	ERO ETP	ETP 3G 10UF
C 2	CAA-XXXX	CAPACITOR, FACTORY ADJUSTSET	1	CAA-XXXX	CAA-XXXX
D 1	QDS-4002	DIODE, SILICIUM	1	F-126	IN 4002
D 2	QDS-4002	DIODE, SILICIUM	1	F-126	IN 4002
D 8	QDS-4002	DIODE, SILICIUM	1	F-126	IN 4002
D 3	QDS-4148	DIODE, SILICIUM	1	QDS-4148	IN 4148
D 4	QDS-4148	DIODE, SILICIUM	1	QDS-4148	IN 4148
D 5	QDS-4148	DIODE, SILICIUM	1	QDS-4148	IN 4148
D 6	QDS-4148	DIODE, SILICIUM	1	QDS-4148	IN 4148
D 7	QDS-4148	DIODE, SILICIUM	1	QDS-4148	IN 4148
D 9	QDS-4148	DIODE, SILICIUM	1	QDS-4148	IN 4148
D 10	QZR-0062	REFERENCE DIODE	1	DO-34	IN 821
D 11	QZR-0062	REFERENCE DIODE	1	DO-34	IN 821
Q 3	QBN-0237	TRANSISTOR, NPN	1	TO-92	BC237 B
Q 6	QBN-0237	TRANSISTOR, NPN	1	TO-92	BC237 B
Q 8	QBN-0237	TRANSISTOR, NPN	1	TO-92	BC237 B
Q 11	QBN-0237	TRANSISTOR, NPN	1	TO-92	BC237 B
Q 12	QBN-0237	TRANSISTOR, NPN	1	TO-92	BC237 B
Q 13	QBN-0237	TRANSISTOR, NPN	1	TO-92	BC237 B
Q 14	QBN-0237	TRANSISTOR, NPN	1	TO-92	BC237 B



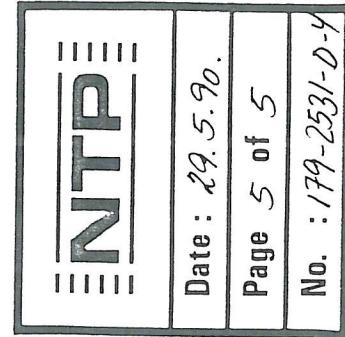
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No. : 179-2531-D-4

NTP 179-250D LIMITER AMPLIFIER

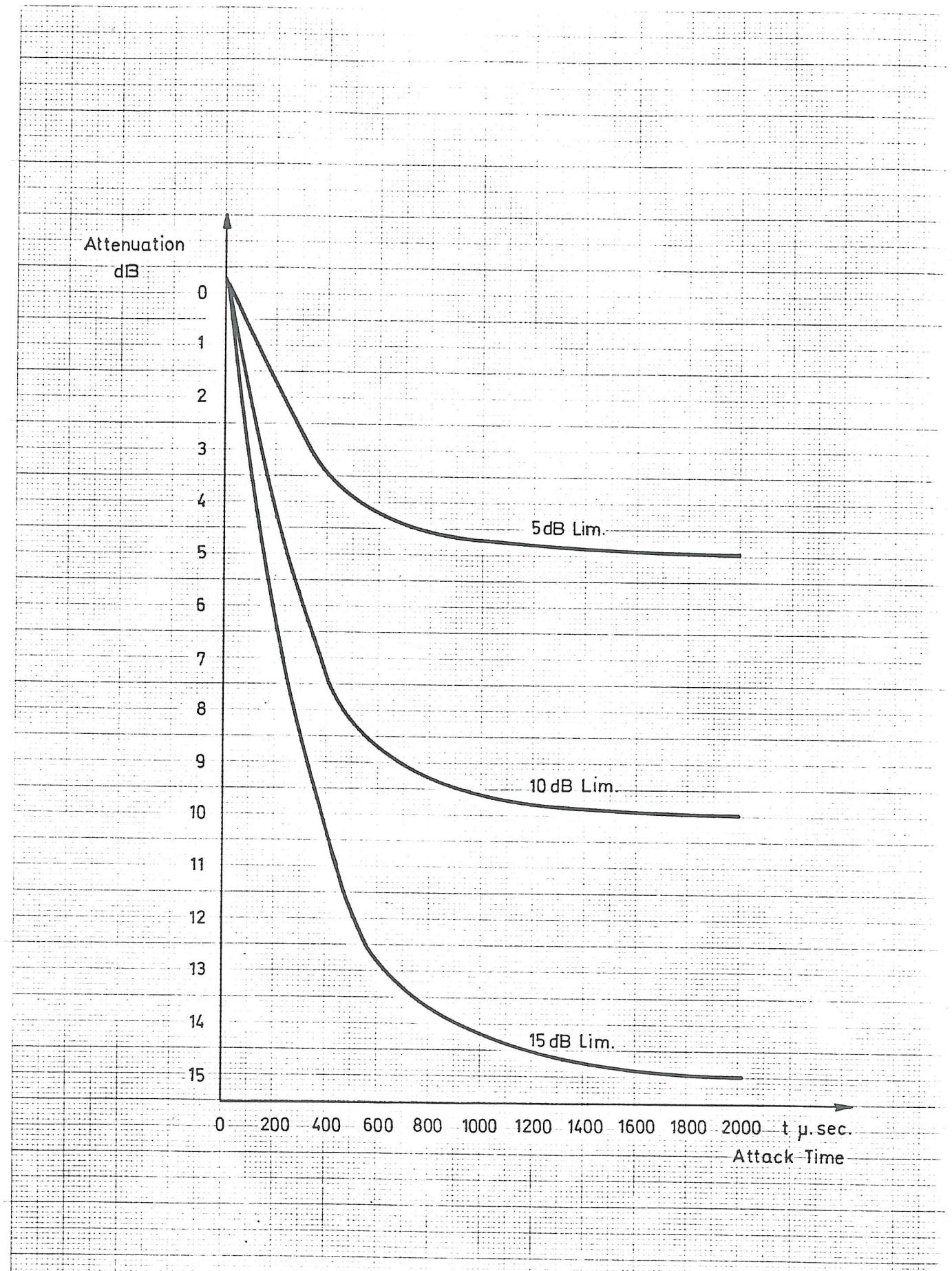
REF. NO	NTP-ID.	DESCRIPTION	QTY	MANUFACT/DRW.NO.	PART NO.
		PARTS LIST			
		PARTS LIST			
		PARTS LIST			
Q 15	QBN-14116	TRANSISTOR, NPN	1	TO-39	BC141-16
Q 2	QBP-0307	TRANSISTOR, PNP	1	TO-92	BC307
Q 7	QBP-0307	TRANSISTOR, PNP	1	TO-92	BC307
Q 9	QBP-0307	TRANSISTOR, PNP	1	TO-92	BC307
Q 16	QBP-0307	TRANSISTOR, PNP	1	TO-92	BC307
Q 4	QBP-0451	TRANSISTOR PNP	1	TO-92	BF451
Q 5	QBP-0451	TRANSISTOR PNP	1	TO-92	BF451
Q 10	QFN-4302	FET	1	QFN-4302	2N 4302
Q 1	QFN-5486	FET TRANSISTOR	1	QFN-5486	2N 5486
IC 1	250-100C	LINEAR AMPLIFIER	1	250-100C	250-100C
IC 2	250-100C	LINEAR AMPLIFIER	1	250-100C	250-100C
IC 3	250-100C	LINEAR AMPLIFIER	1	250-100C	250-100C
IC 5	250-100C	LINEAR AMPLIFIER	1	250-100C	250-100C
IC 4	ILA-310F	OP-AMP	1	NAT. TO-5	LM 310H
TR 1	LTB-0001	TRANSFORMER	1:3	BEYER 376	376.203.655
TR 2	LTS-0003	OUTPUTTRANSFORMER	1:1	UDGÅR AF PROD.	JS 13590
1	QBA-0016	TRANSISTOR OVEN	1	QBA-0016	5 ST 1-2
4	KLM-3301	ISEP-CONN. 33P HAN	1	CANNON G20 A33	G20 A33 A5BFBM
5	KWF-1001	SHORT CIRCUIT CONN. 10P FEM	2	STANDARD STR-B	STR-B-17156
6	KWM-1001	SHORT CIRCUIT BLOCK 10P MAL	2	STANDARD STR-B	STR-B-17174
7	MDZ-2112	SCREENBOX SHUT	1	179-2555-A-4	211-020-216
8	MDZ-2113	THUMB SCREW	1	ZAG	211-010-00000
9	MDZ-2114	NYLONBUSHING	4	ZAG	211-009-00000
10	MNR-0001	COPPER TUBE RIVET	3	S 6086	MNR-0001
11	179-2540	P.C. BOARD	1	179-2540-B-3	179-2540
12	179-2553	FRONT PLATE	1	179-2553-D-4	179-2553
13	179-2551	SUPPORT PLATE	1	179-2551-B-4	179-2551
14	179-2552	CLAMPING PLATE	2	179-2552-B-4	179-2552
15	179-2554	OUNTING PIECE	4	179-2554-A-4	179-2554
16	351-1054	THREADED BUSHING	1	351-1054-A-4	351-1054



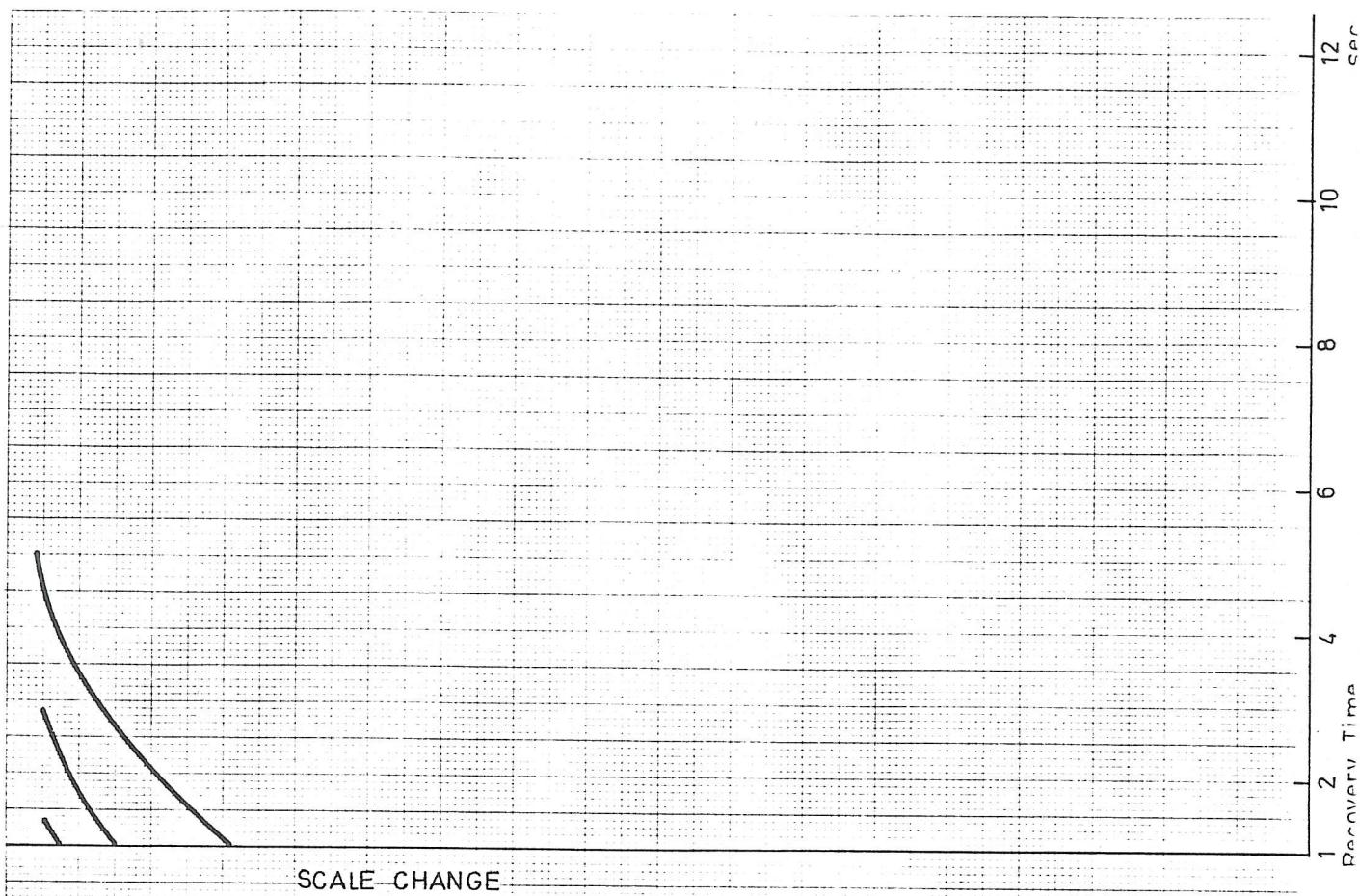
Date : 29.5.90.

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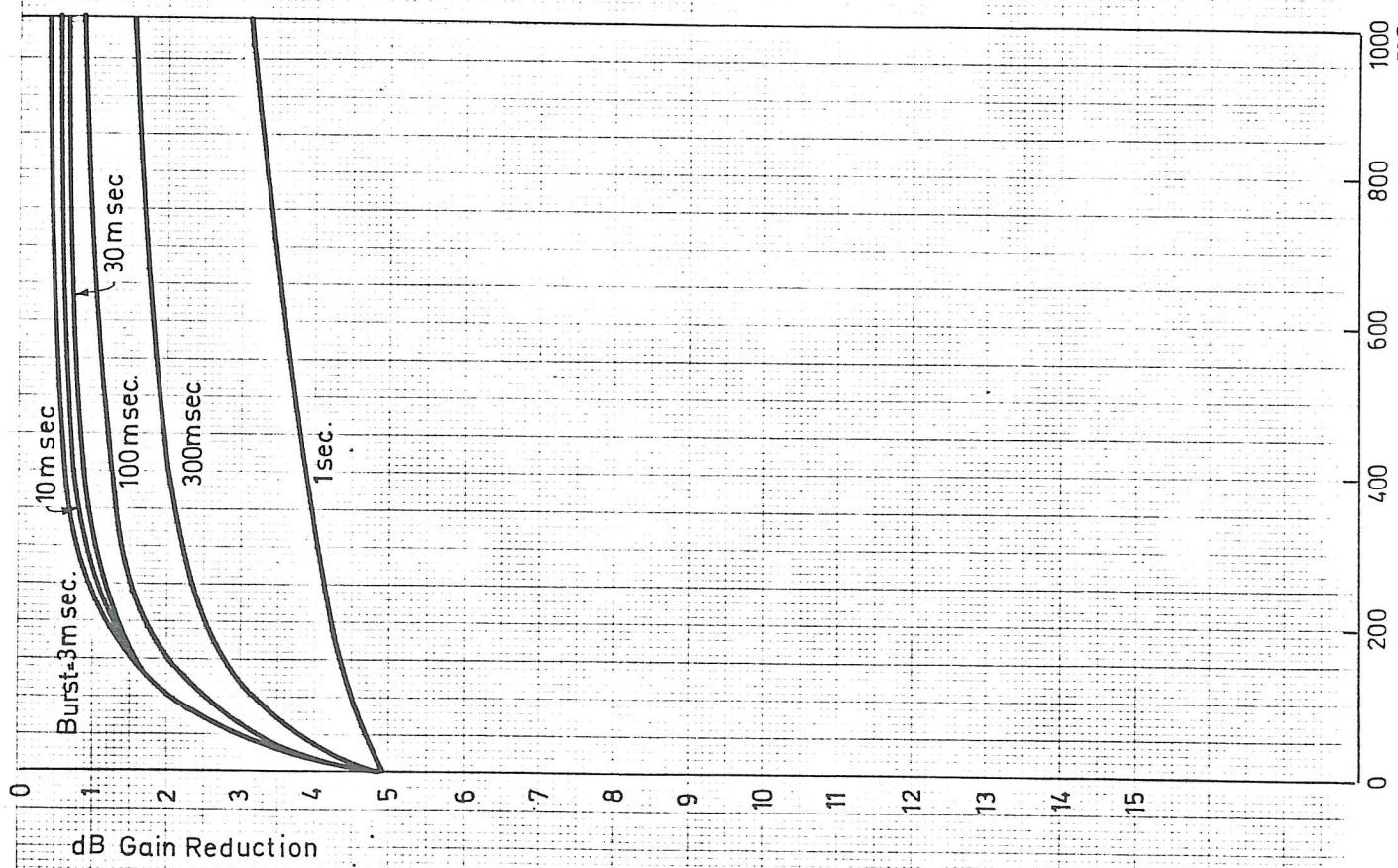
No. : 179-2531-D-4



Pos.:	Antal:	Materiale:	Behandl.:	Del af:
Målestok :				
Tolerance: \pm mm				
Tegnet : 19.6.73 IW		Limiter Amplifier 179-250-A/B		
Godkendt: 1/5-74 D.M.		Attacktime Characteristics		
Revideret :				
				N. TØNNES PEDERSEN A/S
				179-2515 - A-4

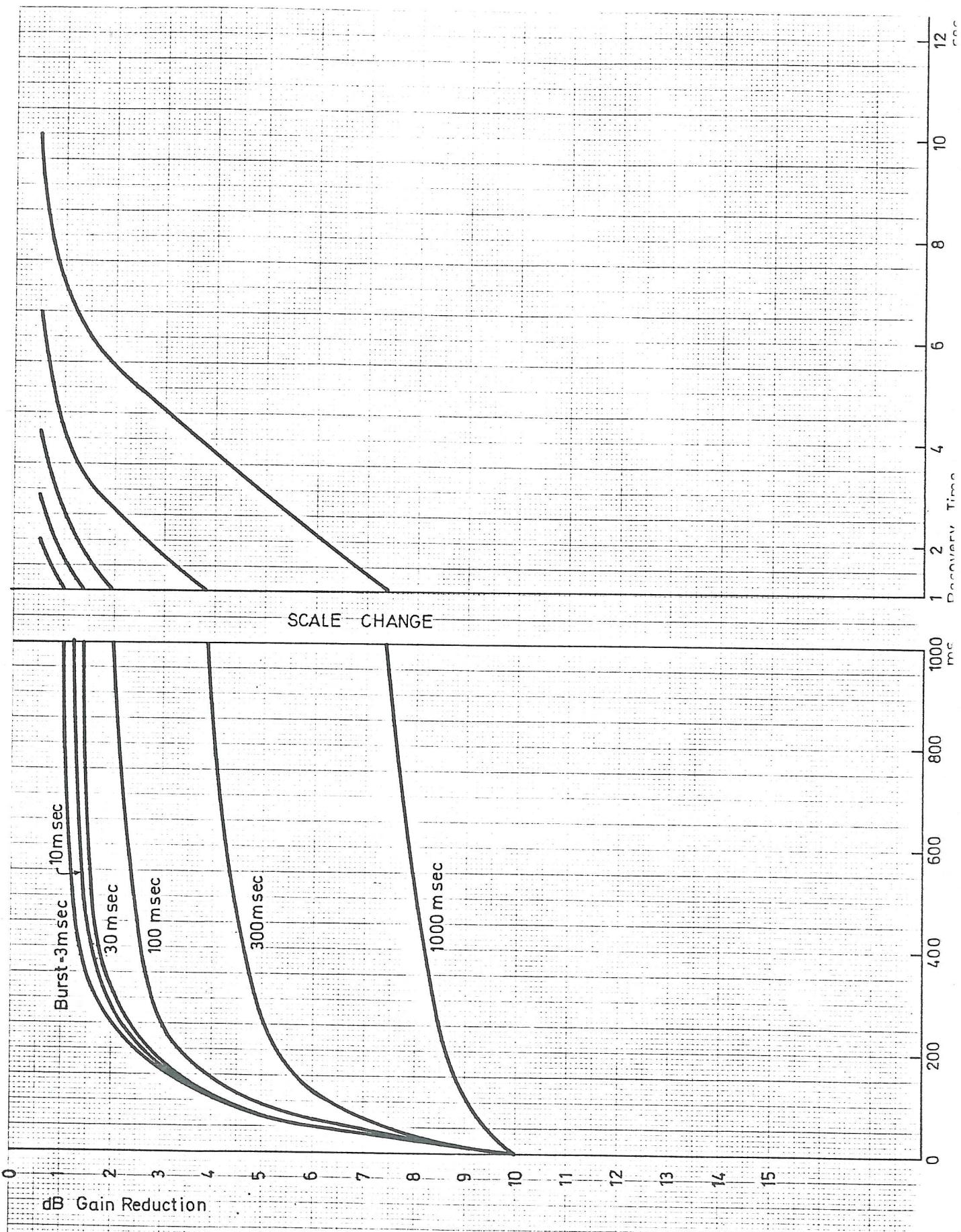


SCALE CHANGE

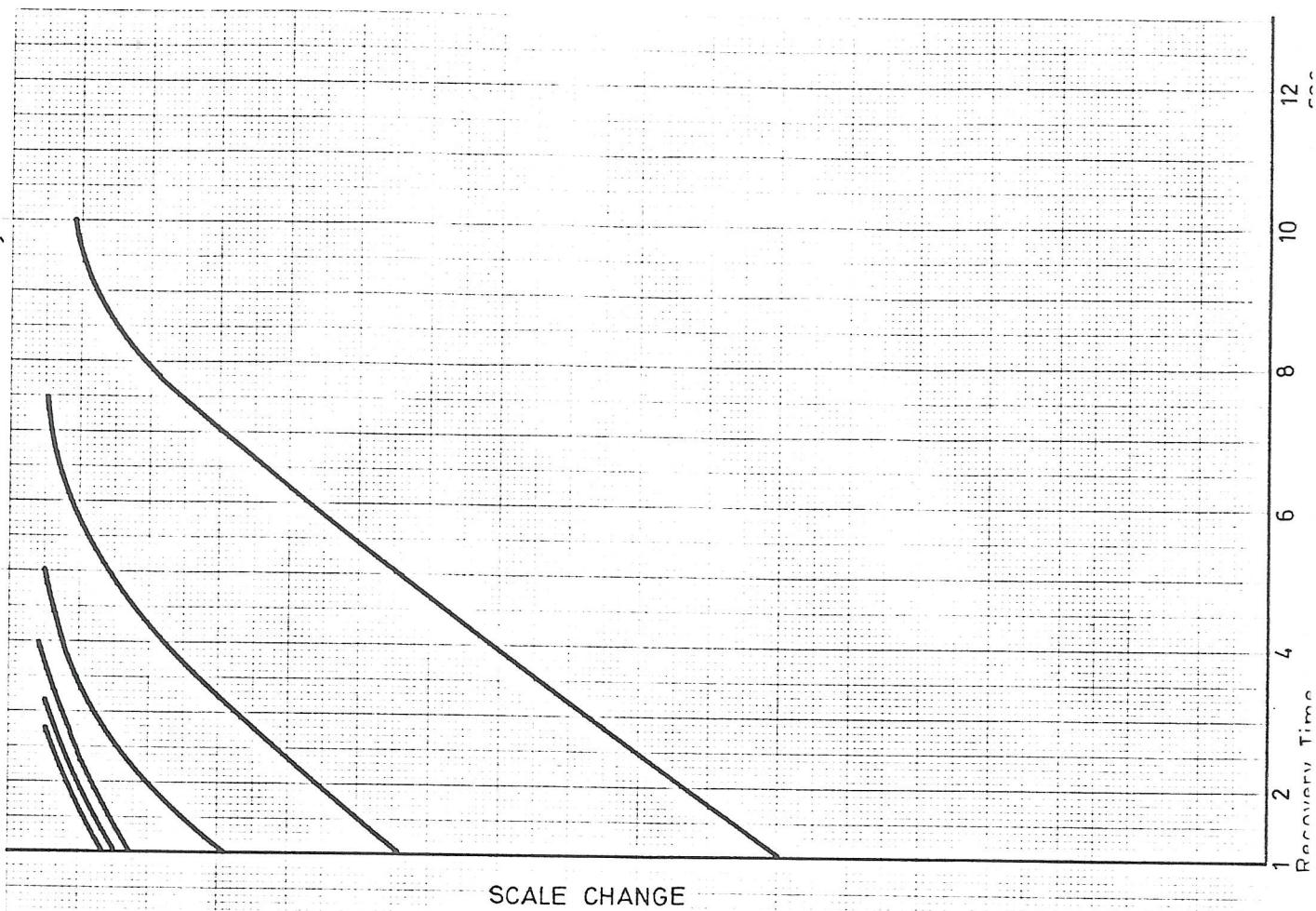


dB Gain Reduction

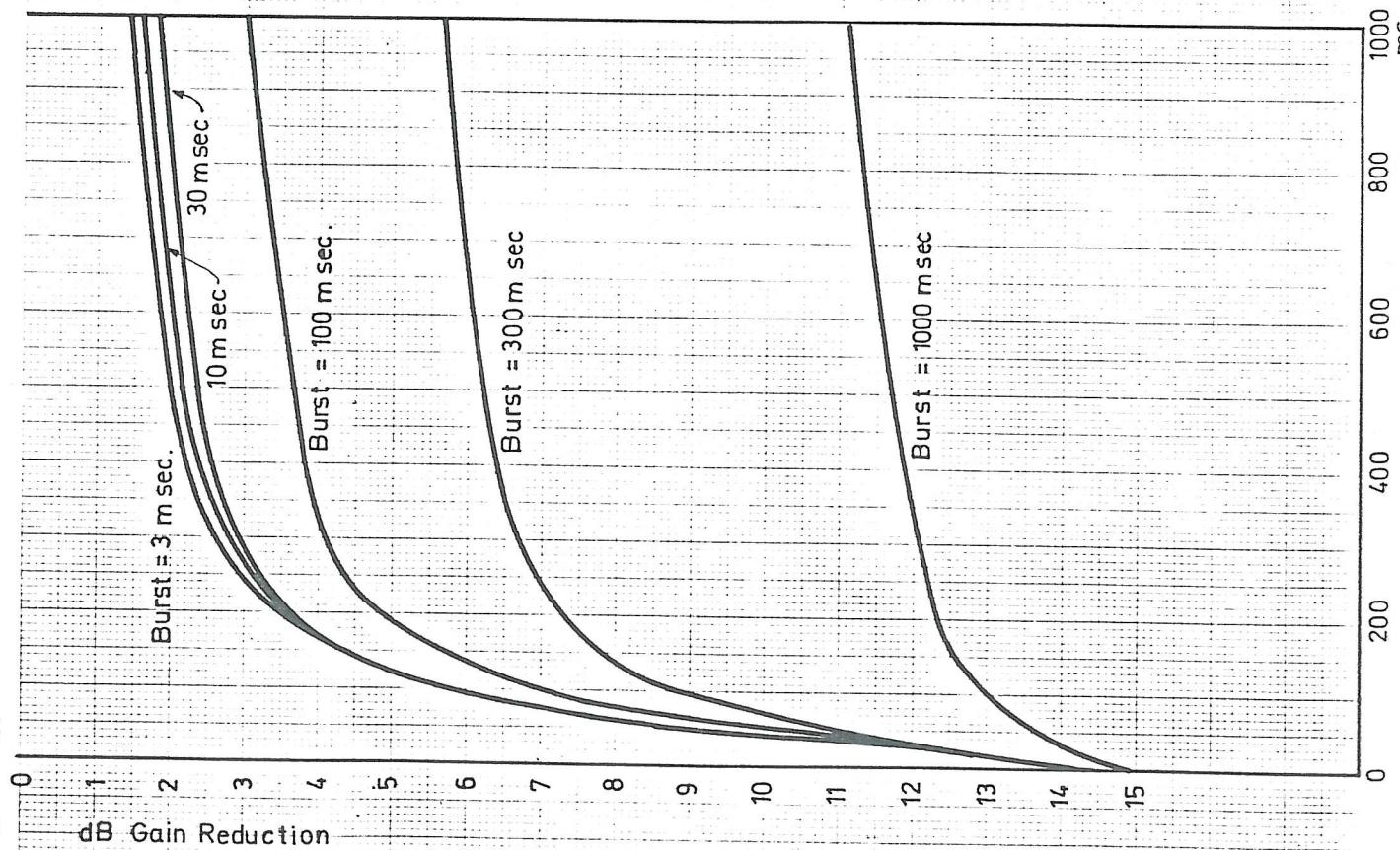
Pos.:	Antal:	Materiale:	Behandl.:	Del af:
Målestok :				
Tolerance: \pm mm				
Tegnet : 19.6.73 IW				
Godkendt: 1/5 - 74 B.M.		Limiter Amplifier 179 - 250 - B		
Revideret :		Recovery Characteristics at 5dB Gain Reduction		
		Tone burst 5kHz 3ms to 1000ms		
				NTP N. TØNNES PEDERSEN A/S
				179 - 2512 - B - 4



Pos.:	Antal:	Materiale:	Behandl.:	Del af:
Målestok :				
Tolerance: \pm mm		Limiter Amplifier 179-250-B		
Tegnet : 19.6.73 IW		Recovery Characteristics at 10dB		
Godkendt: 1/5-74 BM		Gain Reduction.		
Revideret :		Tone burst 5kHz 3ms to 1000ms		
			NTP N. TØNNES PEDERSEN A/S	179-2513 - B - 4



SCALE CHANGE



dB Gain Reduction

Pos.:	Antal:	Materiale:	Behandl.:	Del af:
Målestok :				
Tolerance: \pm mm				
Tegnet : 19.6.73 IW				
Godkendt: 1/5 - 74 3.1		Limiter Amplifier 179-250-B		
Revideret :		Recovery Characteristics at 15 dB Gain Reduction.		
		Tone burst 5kHz 3ms to 1000 ms		NTP N. TØNNES PEDERSEN A/S
				179-2514-B-4