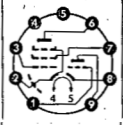


ECL 82 Triode/Pentode mit getrennten Kathoden Triode: Multivibrator NF-Verstärker	Pico 9 Noval	$U_f = 6,3 \text{ V}$ $I_f \text{ ca. } 780 \text{ mA}$	Triode NF-Verstärker in Widerstandsverstärkerschaltung Resistance-coupled amplifier	Triode
	Größe 12 Outlines 12	indirekt geheizt indir. heated	$R_g = 3 \text{ M}\Omega$ $R_g = 22 \text{ M}\Omega$ $U_b = 170 \text{ V}$ 170 V 200 V $R_a = 220 \text{ k}\Omega$ $220 \text{ k}\Omega$ $220 \text{ k}\Omega$ $R_g = 680 \text{ k}\Omega$ $680 \text{ k}\Omega$ $680 \text{ k}\Omega$ $R_k = 2,7 \text{ k}\Omega$ $2,2 \text{ k}\Omega$ $— \text{ k}\Omega$ $I_a = 0,43 \text{ mA}$ $0,52 \text{ mA}$ $0,5 \text{ mA}$ $0,61 \text{ mA}$	$U_a = 300 \text{ V}$ $U_{asp}^{1)} = 600 \text{ V}$ $N_a = 0,5 \text{ W}$ $I_k = 15 \text{ mA}$ $I_{ksp}^{1)} = 100 \text{ mA}$ $R_g^{2)} = 3 \text{ M}\Omega$ $R_g^{3)} = 1 \text{ M}\Omega$ $R_g^{4)} = 22 \text{ M}\Omega$ $Z_g^{(50 \text{ Hz})} = 0,5 \text{ M}\Omega$
Stift · Pin	1 g_T 2 k_P, s, g_3 3 g_1	Triode $U_a = 100 \text{ V}$ $U_g = 0 \text{ V}$ $I_a = 3,5 \text{ mA}$		

Type	Allgemeine Daten General data	Betriebswerte Typical operation	Grenzwerte Maximum ratings
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ECL 82 (Fortsetzung) (continuation) Pentode: Vertikal- Ablenk- Leistungs- verstärker NF-Leistungs- verstärker Triode/pentode with separate cathodes Triode: multivibrator AF amplifiers Pentode: vertical deflection power amplifiers AF power amplifiers	4 f 5 f 6 a_P 7 g_2 8 k_T 9 a_T	$S = 2,5 \text{ mA/V}$ $\mu = 70$ Pentode $U_a = 200 \text{ V}$ $U_{g2} = 200 \text{ V}$ $U_{g1} = -16 \text{ V}$ $I_a = 35 \text{ mA}$ $I_{g2} = 7 \text{ mA}$ $S = 6,4 \text{ mA/V}$ $R_i = 20 \text{ k}\Omega$ $\mu_{g2g1} = 9,5$	$U_{a \text{ eff}} = 25 \text{ V}$ 26 V 20 V 25 V $V = 51$ 52 53 55 f_{ach} $k = 2,3$ $1,6$ $1,4$ $1,4$ $\%$	$U_{i/k} = 150 \text{ V}$ $R_{f/k} = 20 \text{ k}\Omega$ Pentode $U_{a0} = 900 \text{ V}$ $U_a = 300 \text{ V}$ $+U_{asp}^{1)} = 2500 \text{ V}$ $-U_{asp} = -500 \text{ V}$ $N_a (U_a > 250 \text{ V}) = 5 \text{ W}$ $N_a (U_a < 250 \text{ V}) = 7 \text{ W}$ $U_{g20} = 550 \text{ V}$ $U_{g2} = 300 \text{ V}$ $N_{g2} = 1,8 \text{ W}$ $N_{g2 \text{ ausgest.}} = 3,2 \text{ W}$ $I_k = 50 \text{ mA}$ $R_{g1}^{2)} = 2 \text{ M}\Omega$ $R_{g1}^{3)} = 1 \text{ M}\Omega$ $U_{i/k} = 150 \text{ V}$ $R_{f/k} = 20 \text{ k}\Omega$
			Pentode Eintakt-A-Betrieb Class A amplifier $U_a = 170$ 200 200 V $U_{g2} = 170$ 170 200 V $U_{g1} = -11,5$ $-12,5$ -16 V $I_a = 41$ 35 35 mA $I_{g2} = 8$ $6,5$ 7 mA $R_a = 3,9$ $5,6$ $5,6 \text{ k}\Omega$ $U_{g1 \text{ eff}} (N) = 6$ $5,8$ $6,6 \text{ V}$ $N (10\%) = 3,3$ $3,4$ $3,5 \text{ W}$ $U_{g1 \text{ eff}} (50 \text{ mW}) = 0,59$ $0,56$ $0,6 \text{ V}$ 2 Röhren in Gegentakt-AB-Betrieb 2 tubes push-pull, class AB $U_a = 170$ 200 V $U_{g2} = 170$ 200 V $R_k = 135$ 165Ω $I_{a0} = 2 \times 33$ $2 \times 35 \text{ mA}$ $I_{a \text{ ausgest.}} = 2 \times 37$ $2 \times 38 \text{ mA}$ $I_{g20} = 2 \times 6,2$ $2 \times 6,5 \text{ mA}$ $I_{g2 \text{ ausgest.}} = 2 \times 15$ $2 \times 16,5 \text{ mA}$ $R_{aa} = 5$ $5 \text{ k}\Omega$	$U_{i/k} = 150 \text{ V}$ $R_{f/k} = 20 \text{ k}\Omega$ $U_{g20} = 550 \text{ V}$ $U_{g2} = 300 \text{ V}$ $N_{g2} = 1,8 \text{ W}$ $N_{g2 \text{ ausgest.}} = 3,2 \text{ W}$ $I_k = 50 \text{ mA}$ $R_{g1}^{2)} = 2 \text{ M}\Omega$ $R_{g1}^{3)} = 1 \text{ M}\Omega$ $U_{i/k} = 150 \text{ V}$ $R_{f/k} = 20 \text{ k}\Omega$ 1) Impulsdauer = 4% einer Periode, $t_{\text{max}} = 0,8 \text{ ms}$



$U_{g1 \text{ eff}} (N) = 9$ $10,9 \text{ V}$		Pulse time = 4% per period, $t_{\text{max}} = 0,8 \text{ ms}$
$N = 7$ 9 W		2) U_g mittels R_k U_g by R_k
$k = 4$ $4,8 \%$		3) U_g fest fixed grid bias

Kapazitäten · Capacitances		4) U_g nur durch R_g erzeugt U_g produced by voltage drop across R_g only
Triode	Pentode	
$c_e = 3 \text{ pF}$	$c_e = 9,3 \text{ pF}$	
$c_a = 4,3 \text{ pF}$	$c_a \text{ ca. } 8 \text{ pF}$	
$c_{ga} = 4,4 \text{ pF}$	$c_{g1a} < 0,3 \text{ pF}$	
$c_{gf} < 0,1 \text{ pF}$	$c_{g1f} < 0,3 \text{ pF}$	
Triode/Pentode		
$c_{aTg1P} < 0,02 \text{ pF}$	$c_{gTg1P} < 0,025 \text{ pF}$	
$c_{gTaP} < 0,02 \text{ pF}$	$c_{aTaP} < 0,25 \text{ pF}$	