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DECUS NO.	FOCAL8-162
TITLE	TRANSISTOR H-PARAMETER CONVERSIONS
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SOURCE LANGUAGE	FOCAL '69

TRANSISTOR H-PARAMETER CONVERSIONS

DECUS Program Library Write-up

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ABSTRACT

This program will allow the user to convert from one H-parameter to another under control of FOCAL. When the user types "GO" the program will introduce itself and ask questions concerning the type of parameter data one has and the parameter he requires. After the new data is typed out the program will ask questions concerning circuit gain. The value obtained from this calculation is theoretical since all the program requests is a value for RL (load resistance). The program was written under TSS/8 control, but the ASCII tape available may be loaded in the teletype under control of FOCAL. A binary tape is available for users with a high speed reader and the PIP option.

C-FOCAL, 1969

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Ø1.1Ø T  !,!, "PRECISION TSS/8 H-PARAMETER CONVERSION",!;GOTO 2.25
Ø1.18 T  !:"SURE BEATS USING A SLIDE RULE, HUH?!",!
Ø1.2Ø T  !, "WOULD YOU APPRECIATE CIRCUIT GAIN COMPUTATIONS ?",!
Ø1.21 A  "TYPE YES OR NO",ANS,!;IF (ANS-ØYES) 2.2,1.3,2.2
Ø1.3Ø T  "DO YOU HAVE A VALUE FOR RL ?",!
Ø1.31 A  "TYPE YES OR NO",Z,!;IF (Z-ØYES) 1.8,1.34,1.8
Ø1.34 A  "WHAT IS RL'S VALUE?",RL,!;S AV=(-Q*RL)/(1+DH*RL)
Ø1.6Ø S  AI=Q/(1+O+RL);S AP=AV*AI;T%, "AV",AV,!,"AI",AI,!,"AP",AP,!
Ø1.65 GOTO 2.2
Ø1.8Ø T  "WHATAYA MEAN NO, YOUR NOT IN HIGH SCHOOL ANYMORE BUNKIE",!
Ø1.81 T  "THIS IS THE TSS/8 BIGTIME, AND DON'T YOU FORGET IT ",!
Ø1.82 T  !, "I'LL HIT YOU WITH THAT ONCE MORE",!;GOTO 1.3

Ø2.2Ø A  "TO STOP, TYPE A Ø",X;IF (X) 3.Ø8,9.1,3.Ø8
Ø2.25 T  !, "ANSWER THE NEXT TWO QUESTIONS WITH -1,Ø,+1"!
Ø2.26 T  "CE=-1, CB=Ø, CC=1"!

Ø3.Ø8 A  "(1) CONVERT (CE,CB,CC) H-PARAMETERS",C2
Ø3.11 A  "(2) TO (CE,CB,CC) H-PARAMETERS",C1
Ø3.12 IF  (C1-C2) 3.2Ø, 2.2Ø, 3.2Ø
Ø3.2Ø IF  (C2) 4.1Ø,5.1Ø,6.1Ø

Ø4.1Ø A  "WHAT IS HIE?",IE;A "WHAT IS HRE?",RE;A "WHAT IS HFE?",QE
Ø4.13 A  "WHAT IS HOE?",OE;IF (C1) 3.15,4.3,4.6
Ø4.3Ø S  I=IE/(1+QE);S R=( (IE*OE)/(1+QE) )-RE;S Q=-QE/(1+QE)
Ø4.35 S  O=OE/(1+QE);T !,%, "HIB",I,!,"HRB",R,!,"HFB",Q,!,"HOB",O,!
Ø4.36 GOTO 1.18
Ø4.6Ø S  I=IE;S R=1-RE;S Q=-Q/(1+QE);S O=OE
Ø4.64 T  !,%, "HIC",I,!,"HRC",R,!,"HFC",Q,!,"HOC",O,!;GOTO 1.18
    
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05.10 A "WHAT IS HIB?", IB;A "WHAT IS HRB?", RB;A "WHAT IS HFB?", QB
05.13 A "WHAT IS HOB?", OB;IF (C1) 5.3,7.15,5.6
05.30 S I=IB/(1+QB);S R=( (IB*OB)/(1+QB) )=RB;S Q=(-QB)/(1+QB)
05.35 S O=OB/(1+QB);T !,%, "HIE", I,!, "HRE", R,!, "HFE", Q,!, "HOE", O,!
05.36 GOTO 1.18
05.60 S I=IB/(1+QB);S R=(1+QB)/(( (1+QB)*(1-RB) )+(OB*IB) )
05.61 S Q=-1/(1+QB);S O=OB/(1+QB)
05.64 T !,%, "HIC", I,!, "HRC", R,!, "HFC", Q,!, "HOC", O, !;GOTO 1.18

06.10 A "WHAT IS HIC?", IC;A "WHAT IS HRC?", RC;A "WHAT IS HFC?", QC
06.13 A "WHAT IS HOC?", OC;IF (C1) 6.3,6.6,3.15
06.30 S I=IC;S R=1-RC;S Q=-(1+QC);S C=CC
06.34 T !,%, "HIE", I,!, "HRE", R,!, "HFE", Q,!, "HOE", O, !;GOTO 1.18
06.60 S I=-IC/QC;S R=( (QC*(1-RC) )+(IC*OC) )/( (IC*OC)=(QC*RC) )
06.64 S Q=-(1+QC)/QC;S O=-OC/QC;T !,%, "HIB", I,!, "HRB", R,!, "HFB", Q, !
06.65 T "HOB", O, ! ;GOTO 1.18

09.10 QUIT
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