



.MODEL 2sk170 NJF (VTO=-5.211e-001 BETA=3.683e-002 LAMBDA=4.829e-003  
+ IS=1.000e-009, RD=0.000e+000 RS=0.000e+000  
+ CGS=5.647e-011 CGD=2.562e-011 PB=4.860e+000 FC=0.5)

.MODEL bc546 NPN (IS=2.39E-14 NF=1.008 ISE=3.55E-15 NE=1.541 BF=294.3 IKF=0.1357 VAF=63.2 NR=1.004 ISC=6.27E-14 NC=1.243 BR=7.946 IKR=0.1144 VAR=25.9 RB=1.00E-06  
+ RBM=1 RE=0.4683 RC=0.85 XTB=0 EG=1.11 XTI=3 CJE=1.36E-11 VJE=0.65 MJE=0.3279 TF=4.39E-10 XTF=120 VTF=2.643 ITF=0.7495 PTF=0 CJC=3.73E-12 VJC=0.3997 MJC=0.2955  
+ XCJC=0.6193 TR=1.00E-32 CJS=0 VJS=0.75 MJS=0.333 FC=0.9579 Vceo=65 Icsatmg=100m mtg=Philips)

.MODEL bc556 PNP (IS=3.83E-14 NF=1.008 ISE=1.22E-14 NE=1.528 BF=344.4 IKF=0.08039 VAF=21.11 NR=1.005 ISC=2.85E-13 NC=1.28 BR=14.84 IKR=0.047 VAR=32.02 RB=1.00E-06  
+ RBM=1 RE=0.6202 RC=0.5713 XTB=0 EG=1.11 XTI=3 CJE=1.23E-11 VJE=0.6106 MJE=0.378 TF=5.89E-10 XTF=3.414 VTF=5.23 ITF=0.1483 PTF=0 CJC=1.08E-11 VJC=0.1022 MJC=0.3563  
+ XCJC=0.6288 TR=1.00E-32 CJS=0 VJS=0.75 MJS=0.333 FC=0.8027 Vceo=65 Icsatmg=100m mtg=Philips)

.model MJE15030 NPN(IS=3.894e-11 BF=312.524 NF=1.0979 VAF=9.9963 IKF=0.796201 ISE=2.37397e-09 NE=1.94897 BR=0.14246 NR=1.64791 VAR=99.9749 IKR=0.00539895  
+ ISC=2.33175e-09 NC=2.78024 RB=267.202 IRB=0.99994e-13 RBM=0.299835 RE=0.04316e-05 RC=0.252928 XTB=0.1 XTI=3.92812 EG=1.05 CJE=2.42998e-09 VJE=0.794171 MJE=0.569313  
+ TF=1.87986e-09 XTF=1000 VTF=1635.34 ITF=270.188 CJC=2.43127e-10 VJC=0.4 MJC=0.361453 XCJC=0.802892 FC=0.8 CJS=0 VJS=0.75 MJS=0.5 TR=0.86194e-06 PTF=0 KF=0 AF=1)

.model MJE15031 PNP(IS=7.17489e-11 BF=457.169 NF=1.11376 VAF=6.01557 IKF=0.345808 ISE=1e-08 NE=2.18567 BR=0.247882 NR=1.39549 VAR=0.1557 IKR=0.0263893  
+ ISC=1e-16 NC=2.89486 RB=2.25208 IRB=0.0114008 RBM=0.009102785 RE=0.00815557 RC=0.0407779 XTB=0.1 XTI=0.1 EG=1.05 CJE=1.64037e-09 VJE=0.819491 MJE=0.537987  
+ TF=1.60991e-09 XTF=180.82 VTF=1.16561 ITF=6.50499 CJC=4.82516e-10 VJC=0.4 MJC=0.374287 XCJC=0.786653 FC=0.712788 CJS=0 VJS=0.75 MJS=0.5 TR=3.32795e-08 PTF=0 KF=0 AF=1)

.model MJ15003 NPN(IS=1e-09 BF=226.431 NF=0.85 VAF=3.4348 IKF=10 ISE=1e-08 NE=1.79698 BR=1.65466 NR=1.5 VAR=434.348 IKR=4.42319 ISC=5.49997e-09 NC=3.18751  
+ RB=43.922 IRB=0.1 RBM=0.1 RE=0.0001 RC=0.20765 XTB=0.746102 XTI=1 EG=1.05 CJE=0.62276e-08 VJE=0.505131 MJE=0.650363 TF=0.99972e-09 XTF=1.35733 VTF=0.996711  
+ ITF=0.999802 CJC=1.22855e-09 VJC=0.95 MJC=0.23 XCJC=0.803115 FC=0.638728 CJS=0 VJS=0.75 MJS=0.5 TR=1e-07 PTF=0 KF=0 AF=1)

.model MJ15004 PNP(IS=1e-09 BF=226.431 NF=0.85 VAF=3.4348 IKF=10 ISE=1e-08 NE=1.79698 BR=1.65466 NR=1.5 VAR=434.348 IKR=4.42319 ISC=5.49997e-09 NC=3.18751  
+ RB=43.922 IRB=0.1 RBM=0.1 RE=0.0001 RC=0.20765 XTB=0.746102 XTI=1 EG=1.05 CJE=0.99946e-08 VJE=0.4 MJE=0.658304 TF=9.99976e-09 XTF=1.3573 VTF=0.996475  
+ ITF=0.99985 CJC=1.22854e-09 VJC=0.95 MJC=0.23 XCJC=0.803124 FC=0.761291 CJS=0 VJS=0.75 MJS=0.5 TR=1e-07 PTF=0 KF=0 AF=1)