




***Analytical Engineering, Inc.***

*Analog Engineering and Circuit Simulation*

Component Modeling  
Circuit Modeling  
System Level Modeling

and much more...

The image features a square background with a marbled pattern in shades of green and brown. The text is centered and rendered in a bold, italicized, serif font with a slight shadow effect.

*CIRCUIT SIMULATION  
ACCURATE  
ENOUGH TO  
CHISEL IN STONE*

## CORRELATION PLOTS (LAB DATA VS. SIMULATED)

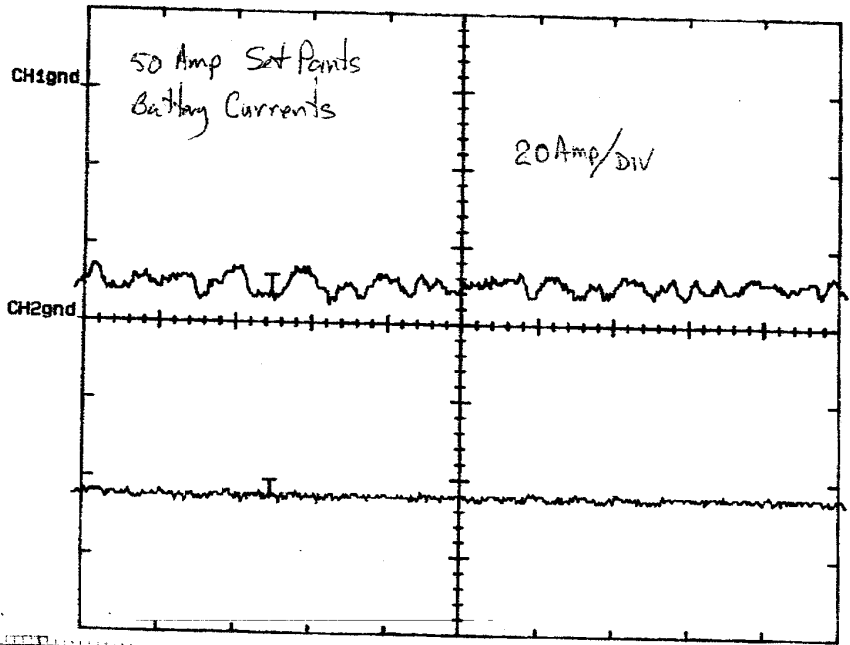
Ever wonder just how accurate that SPICE model you're building is compared to hardware results?

SPICE is becoming more and more accurate every day! The waveforms on the following pages are an example of the continuing quest for simulation as accurate as your breadboard.

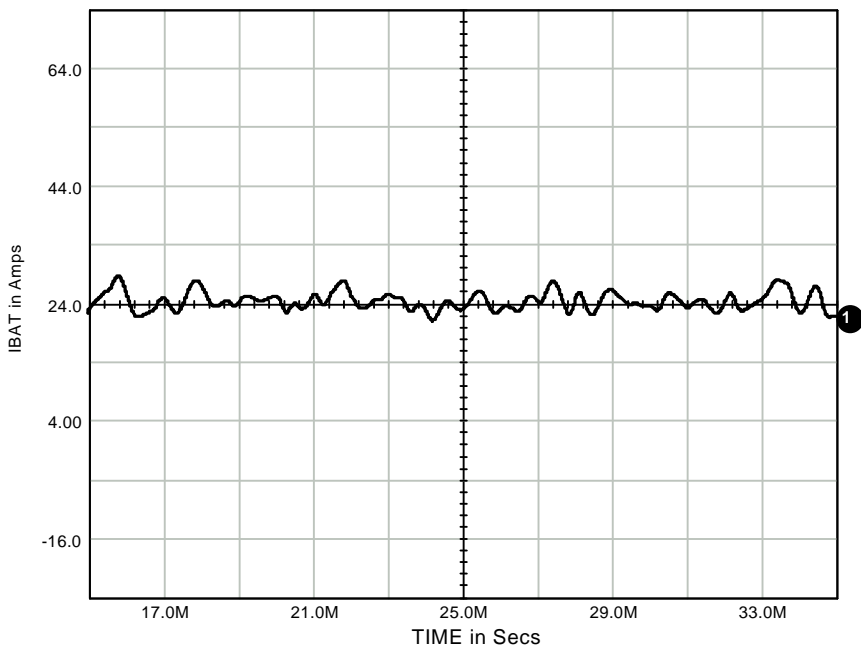
Waveforms provided courtesy of Analytical Engineering Incorporated. AEI specializes in engineering design, simulation, circuit modeling services, and worst case analysis services.  
Analytical Engineering Incorporated  
2253 E. Hope Circle  
Mesa, AZ 85213  
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CH1 10mVΩ A 2ms 10.6mV CH2  
CH2 10mVΩ

Attachment (2)



BOOK  
PAGE 58

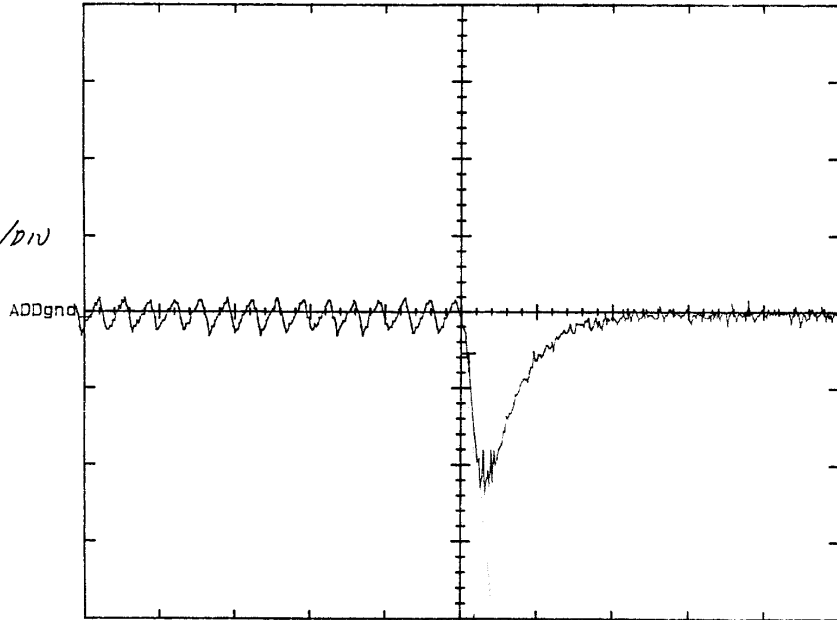


System Simulation of Noise Performance

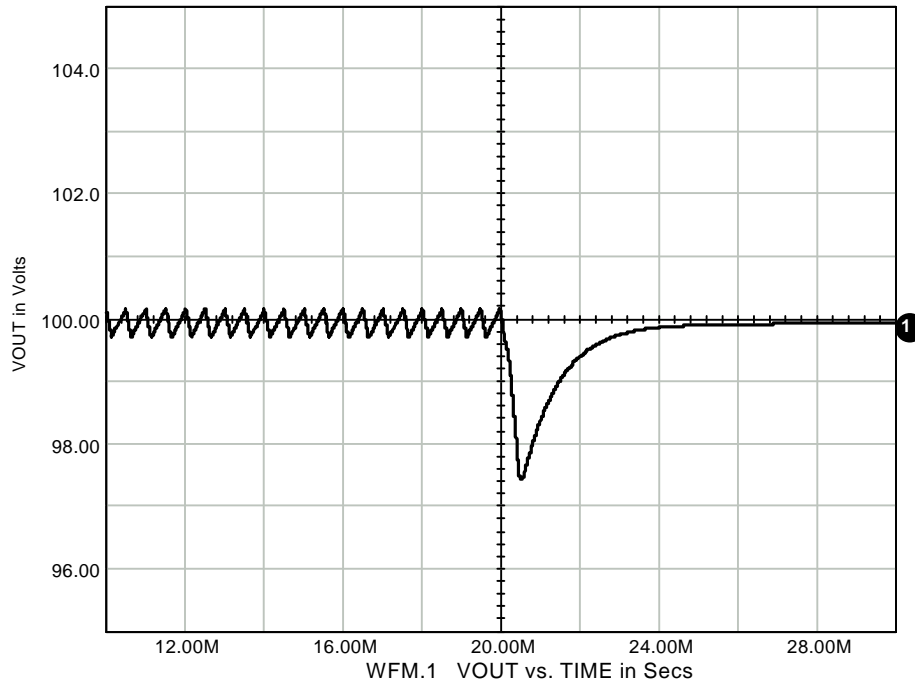
$I_{SAS} = 2.5A$      $V_{BAT} = 42V$   
 CH1 1V ~    A 2ms -93.8mV? VERT  
 CH2↓ 1V ~  
 ADD 1V     $I_D = 49.9A$  TO  $54.4A$ ,  $\Delta I_D = 5.1A$

7/21/96  
dk

$\Delta V_D$   
1.0V/DIV



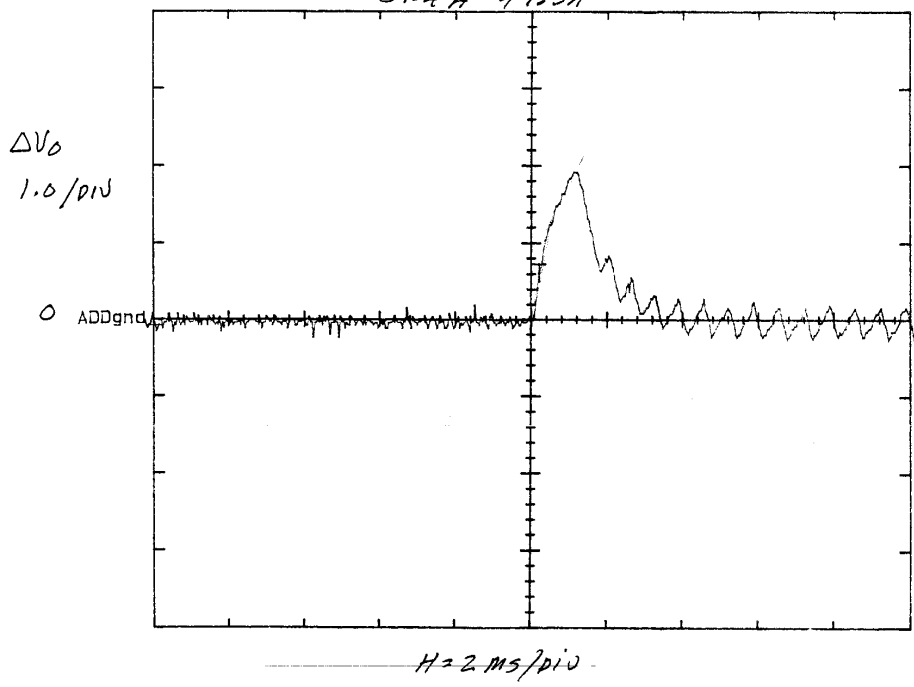
H = 2MS/DIV



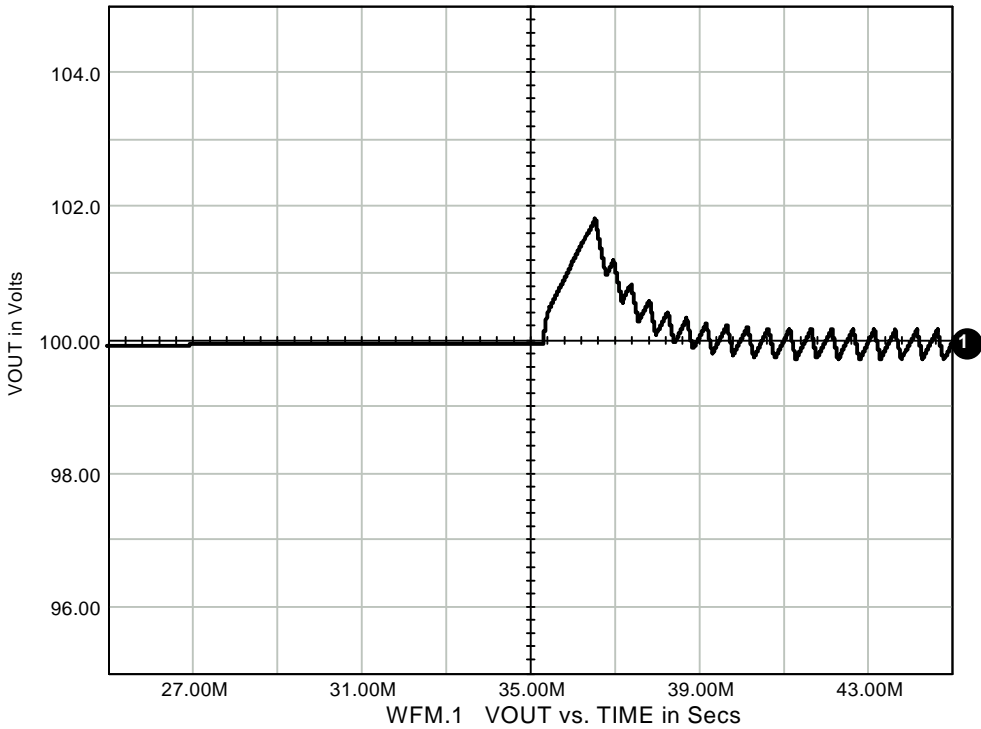
Power Supply Transient

$I_{SAT} = 2.5A$        $V_{BAT} = 42V$   
 CH1 1V      A      2ms      1.02 V/DIV  
 CH2↓ 1V ~  
 ADD 1V       $I_0 = 47.3A \text{ TO } 54.4$        $\Delta I_0 = 5.1A$   
                   $54.4A \text{ } 49.3A$

dh

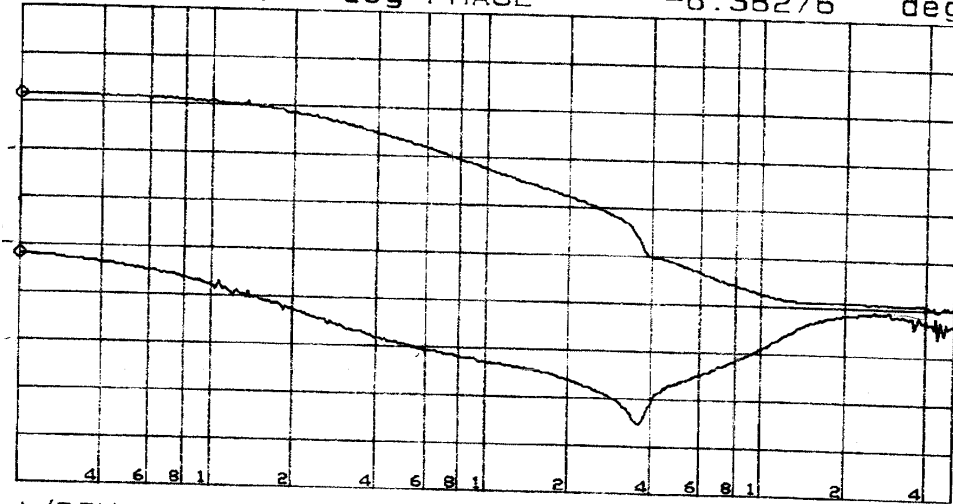


c

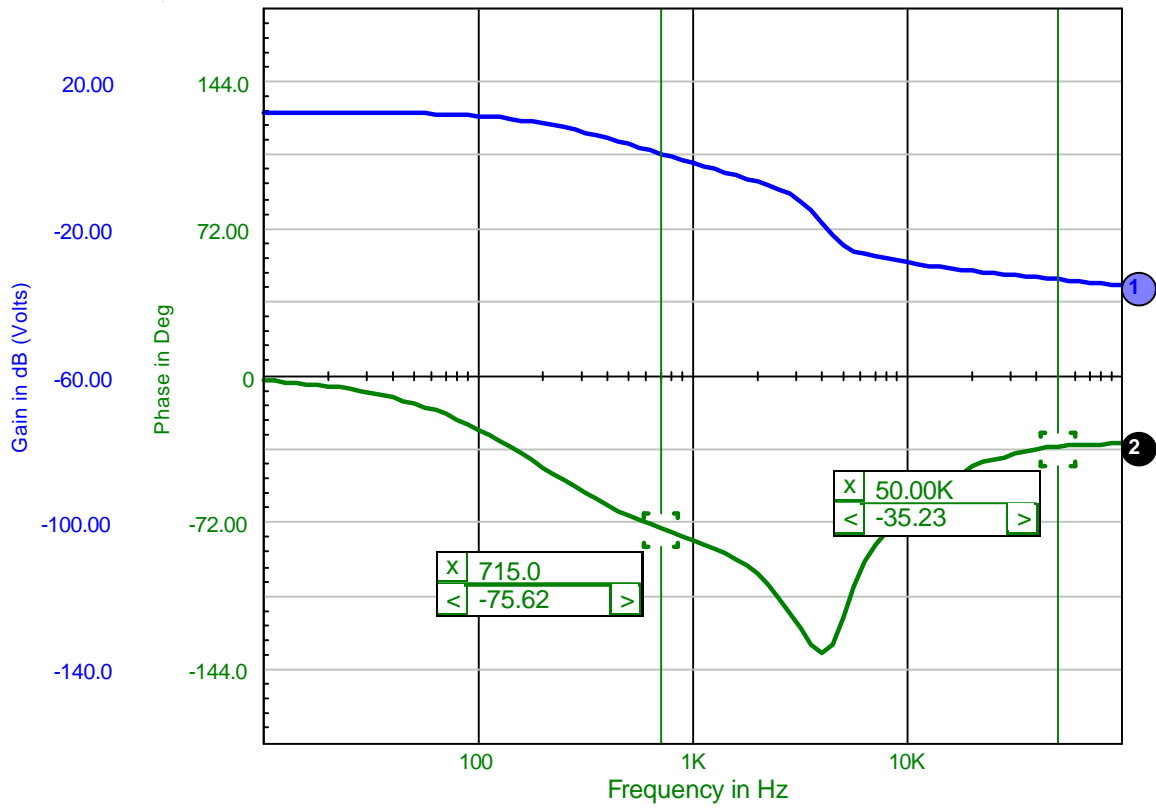


Power Supply Transient

PWR STG MAX LOAD, MAX LINE  
 A: T/R (dB) B:  $\theta$  MKR  
 A MAX 30.00 dB GAIN 20.000 Hz  
 B MAX 180.0 deg PHASE 11.7014 dB  
 -6.38276 deg

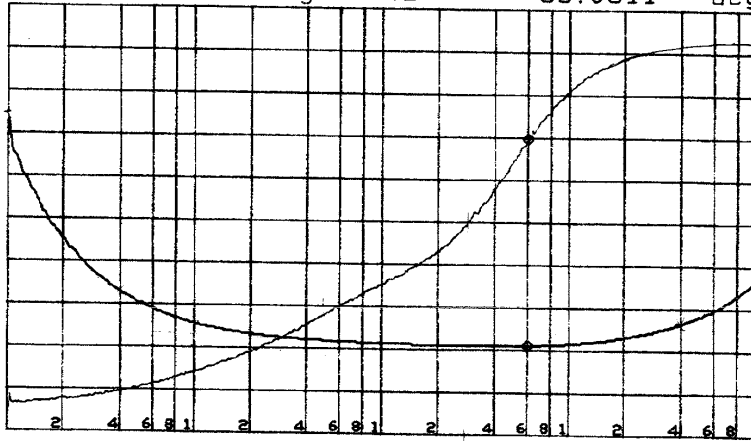


A/DIV 10.00 dB START 20.000 Hz  
 B MIN -180.0 deg STOP 50 000.000 Hz

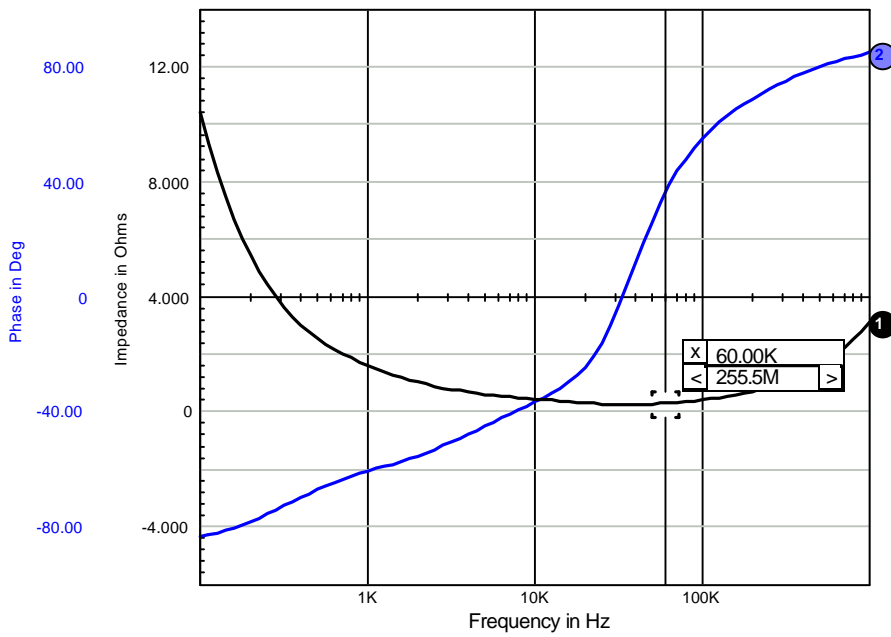


Control Loop Frequency Response

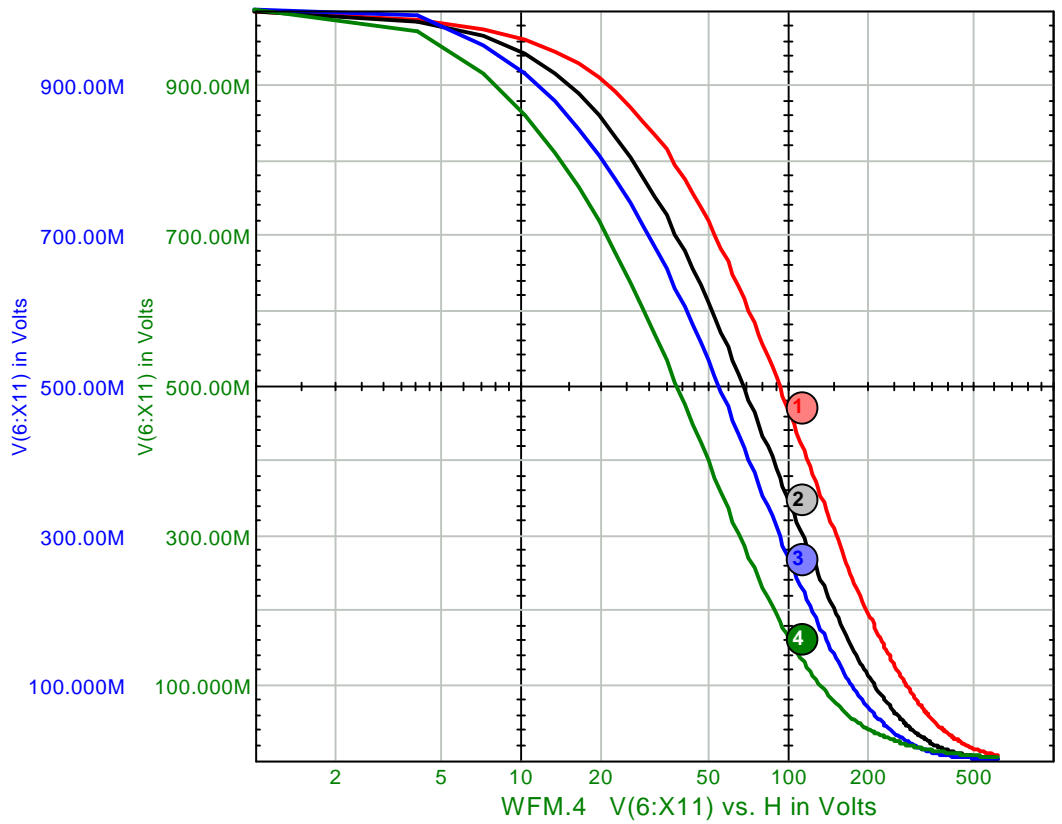
A: |Z|      B:  $\theta$        $\circ$  MKR      60 255.959 Hz  
 A MAX 16.00  $\Omega$       MAG      213.962 m $\Omega$   
 B MAX 100.0 deg      PHASE      39.0811 deg



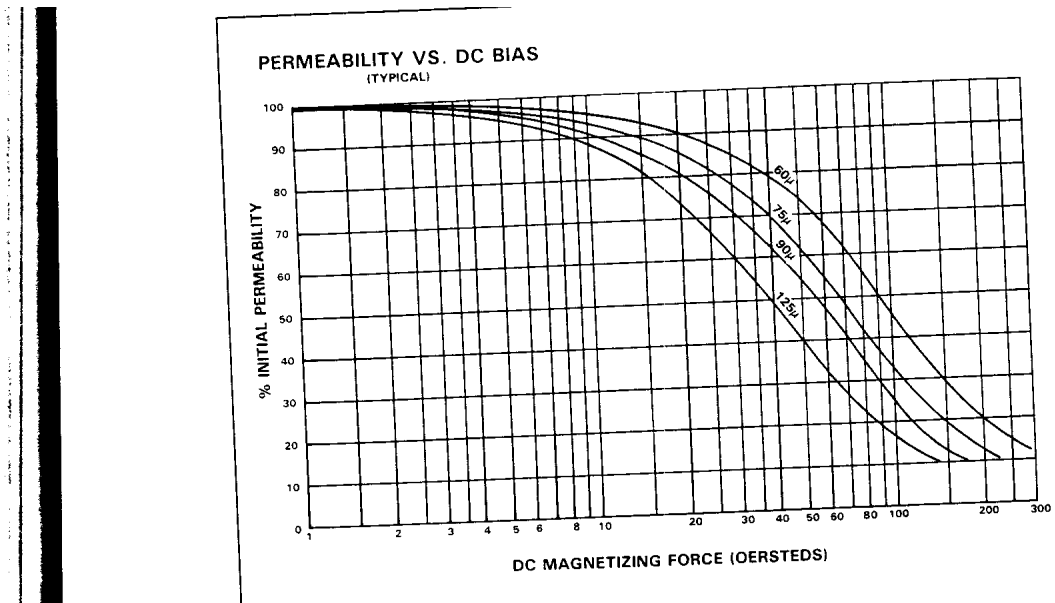
A/DIV 2.000  $\Omega$       START 100.000 Hz  
 B/DIV 20.00 deg      STOP 1 000 000.000 Hz



Capacitor Impedance



Family of curves, Permiability vs. DC Bias (Kool Mu)



MPP Core DC Response