CURVES - EXAMPLES

Mosfet N/P Channel
- ID vs. VDS (at range of VGS)
- ID vs. VGS (at range of VDS)
- IS vs. VSD
- RDS vs. VGS (at fixed ID)
- RDS vs. ID (at several VGS)
- IDSS vs. VDS (Reverse Bias Selectable)
- VGSTH vs. ID
- IGSS vs. VGS

Transistor NPN / PNP
- HFE vs. IC
- BVCE(O,S,R,V) vs. IC
- BVEBO vs. IE
- ICBO vs. VCBO
- VCE(SAT) vs. IC (at fixed IC/IB ratio)
- VCE(SAT) vs. IB (at range of IC)
- VBE(SAT) vs. IC (at fixed IC/IB ratio)
- VBE(ON) vs. IC (at fixed VCE)
- IC vs. VCE (at range of IB)(Curve Tracer only)
- IEBO vs. VEB
- ICEO vs. VCE

IGBT N/P Channel
- IC vs. VCE (at range of VGE)
- IC vs. VGE (at range of VCE)
- ICES vs. VCE
- IF vs. VF
- VCE vs. VGE

Diode
- IF vs. VF
- IR vs. VR

Zener
- IF vs. VF
- IZ vs. BVZ

TRIAC
- IT vs. VT+ (at fixed IG and RGK open)
- IT vs. VT- (at fixed IG and RGK open)

SCR
- IT vs. VTM (at fixed IG and RGK open)

SSOVP
- IT vs. VT+ (at fixed IBO)
- IT vs VT- (at fixed IBO)

SIDAC
- IT vs. VT+ (at fixed IBO)
- IT vs VT- (at fixed IBO)

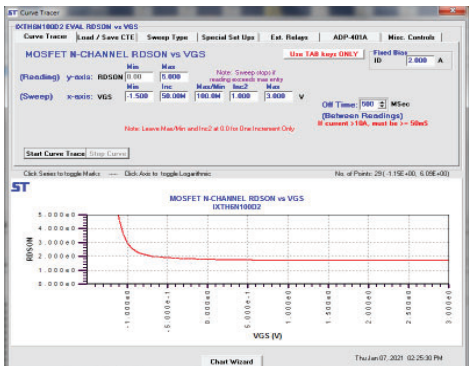
DIAC
- ID vs. VF+
- ID vs. VF-

Regulator Positive
- Electronic Load vs. VOUT (at fixed IMAX)

Regulator Negative
- Electronic Load vs. VOUT (at fixed IMAX)

JFET N/P Channel
- ID(OFF) vs. VDS (at range of VGS)
- ID(OFF) vs. VGS (Reverse Bias) (at fixed VDS)
- ID(ON) vs. VDS (at range of VGS)
- ID(ON) vs. VGS (Reverse Bias) (at fixed VDS)

Other Curves
- V vs. I Quadrants I and III
- I vs. V Quadrants I and III

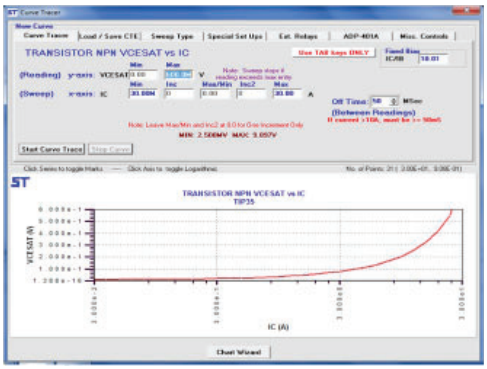


NMOS RDSON vs VGS (Figure 1)
Depletion Mode Device

NPN hFE vs IC (Figure 2)

N JFET, IDON vs VDS (Figure 3)

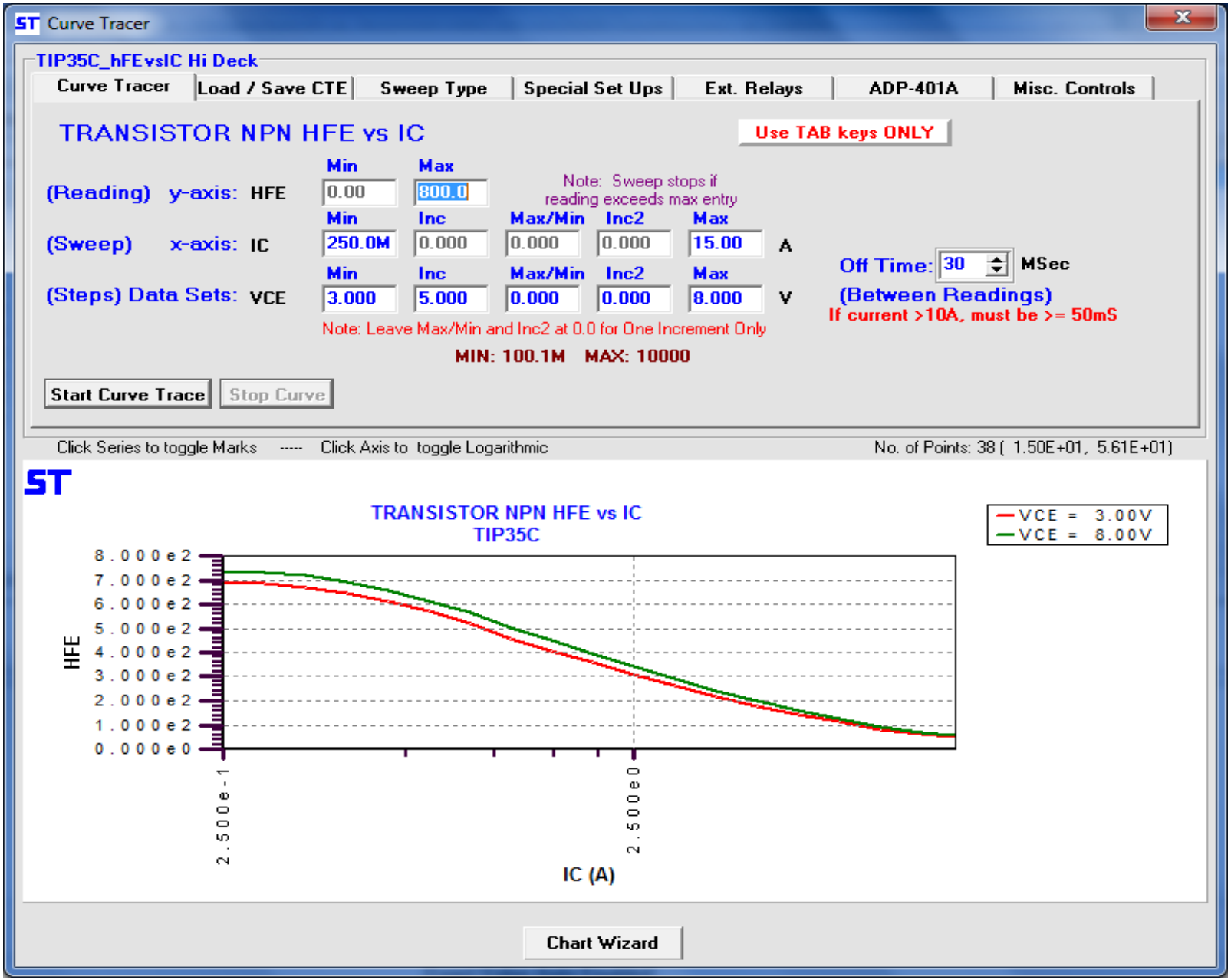
CURVE SUITE (Figure 4)



NPN VCESAT vs IC, IC/IB Fixed Ratio
(Figure 5)

NPN IC vs VCE (Figure 6)

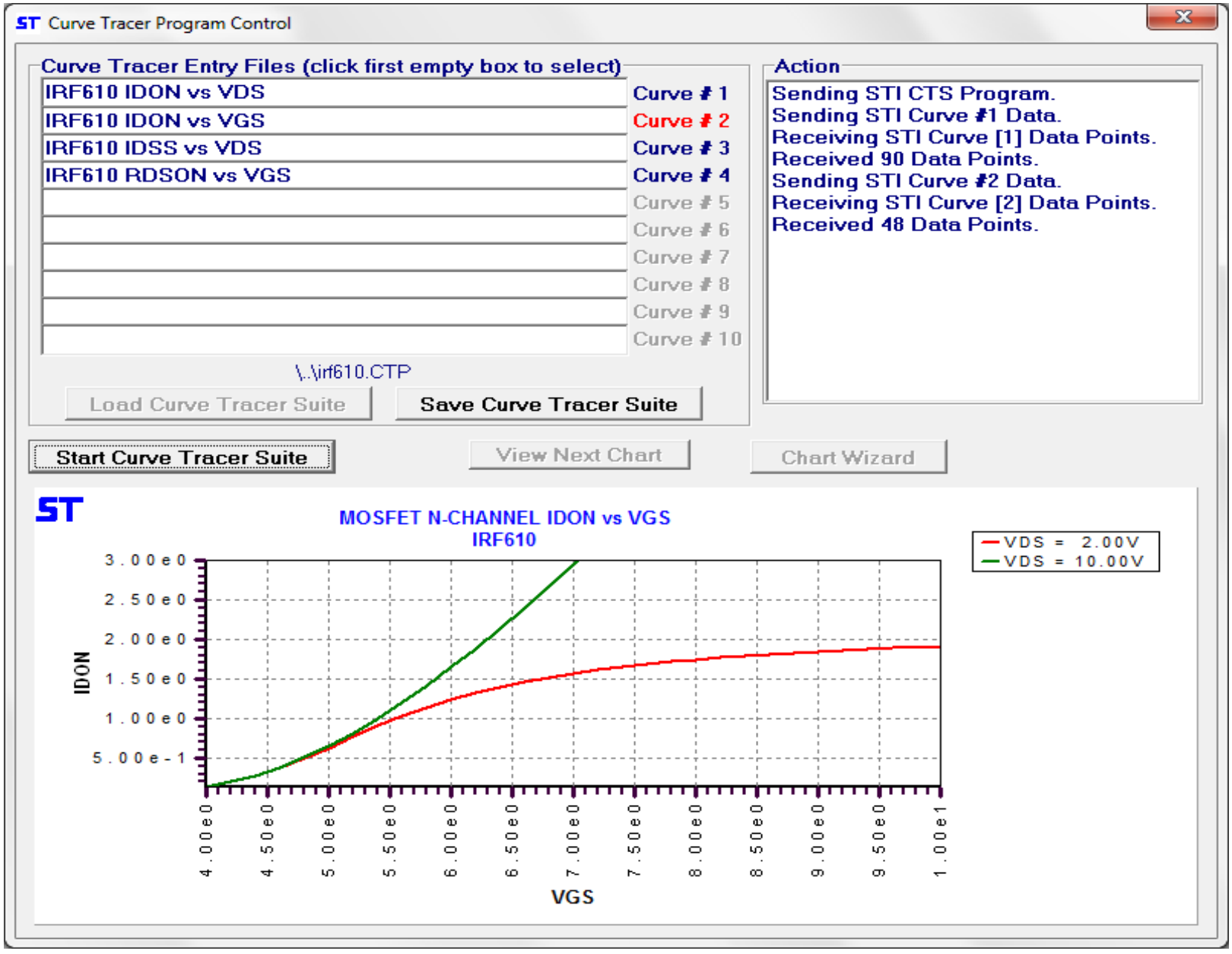
HFE vs IC


Curve Tracer
TIP35C_hFEvsIC Hi Deck
Curve Tracer
Load / Save CTE
Sweep Type
Special Set Ups
Ext. Relays
ADP-401A
Misc. Controls
TRANSISTOR NPN HFE vs IC
Use TAB keys ONLY
(Reading) y-axis: HFE
Min 0.00
Max 800.0
Note: Sweep stops if reading exceeds max entry
(Sweep) x-axis: IC
Min 250.0M
Inc 0.000
Max/Min 0.000
Inc2 0.000
Max 15.00
A
(Steps) Data Sets: VCE
Min 3.000
Inc 5.000
Max/Min 0.000
Inc2 0.000
Max 8.000
V
Off Time: 30 MSec
(Between Readings)
If current >10A, must be >= 50mS
Note: Leave Max/Min and Inc2 at 0.0 for One Increment Only
MIN: 100.1M MAX: 10000
Start Curve Trace
Stop Curve
Click Series to toggle Marks ----- Click Axis to toggle Logarithmic
No. of Points: 38 (1.50E+01, 5.61E+01)
TRANSISTOR NPN HFE vs IC
TIP35C
VCE = 3.00V
VCE = 8.00V
8.000e2
7.000e2
6.000e2
5.000e2
4.000e2
3.000e2
2.000e2
1.000e2
0.000e0
HFE
2.500e-1
2.500e0
IC (A)
Chart Wizard

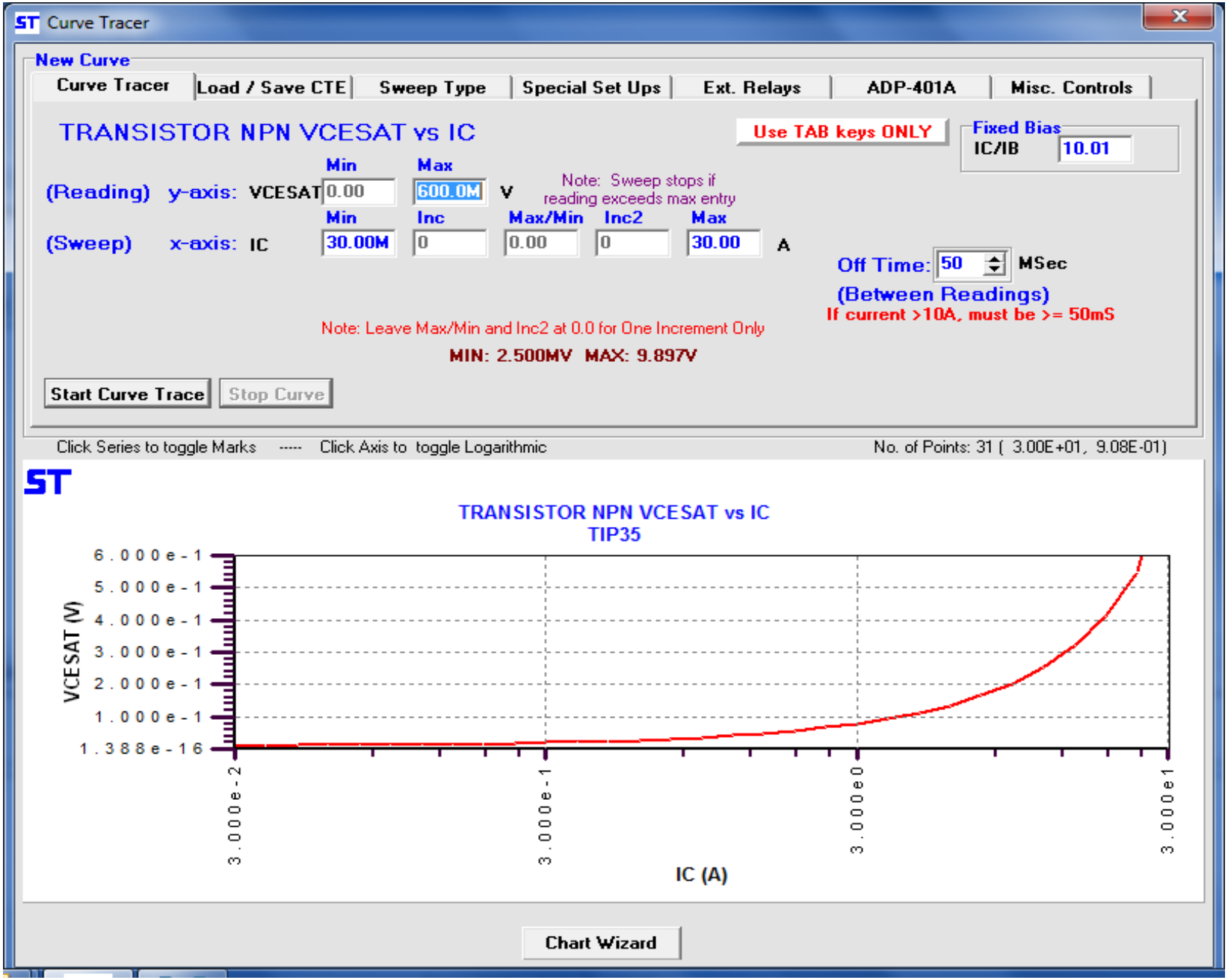
IDON vs VDS


Curve Tracer
2N5486-IDvsVDS
Curve Tracer
Load / Save CTE
Sweep Type
Special Set Ups
Ext. Relays
ADP-401A
Misc. Controls
JFET N-CHANNEL IDON vs VDS
Use TAB keys ONLY
Min
Max
(Reading) y-axis: IDON
0.00
10.00M
A
Note: Sweep stops if reading exceeds max entry
Min
Inc
Max/Min
Inc2
Max
(Sweep) x-axis: VDS
10.00M
100.0M
3.000
2.000
10.00
V
(Steps) Data Sets: VGS
1.000
500.0M
0.000
0.000
3.000
V
Note: Leave Max/Min and Inc2 at 0.0 for One Increment Only
Off Time:
0
MSec
(Between Readings)
If current >10A, must be >= 50mS
Start Curve Trace
Stop Curve
Click Series to toggle Marks ----- Click Axis to toggle Logarithmic
No. of Points: 175 (1.00E+01, 2.08E-03)
JFET N-CHANNEL IDON vs VDS
2N5486
VGS = 1.00V
VGS = 1.50V
VGS = 2.00V
VGS = 2.50V
VGS = 3.00V
IDON (A)
8.000e-3
6.000e-3
4.000e-3
2.000e-3
0.000e0
5.000e-1
1.000e0
1.500e0
2.000e0
2.500e0
3.000e0
3.500e0
4.000e0
4.500e0
5.000e0
5.500e0
6.000e0
6.500e0
7.000e0
7.500e0
8.000e0
8.500e0
9.000e0
9.500e0
1.000e1
VDS (V)
Chart Wizard

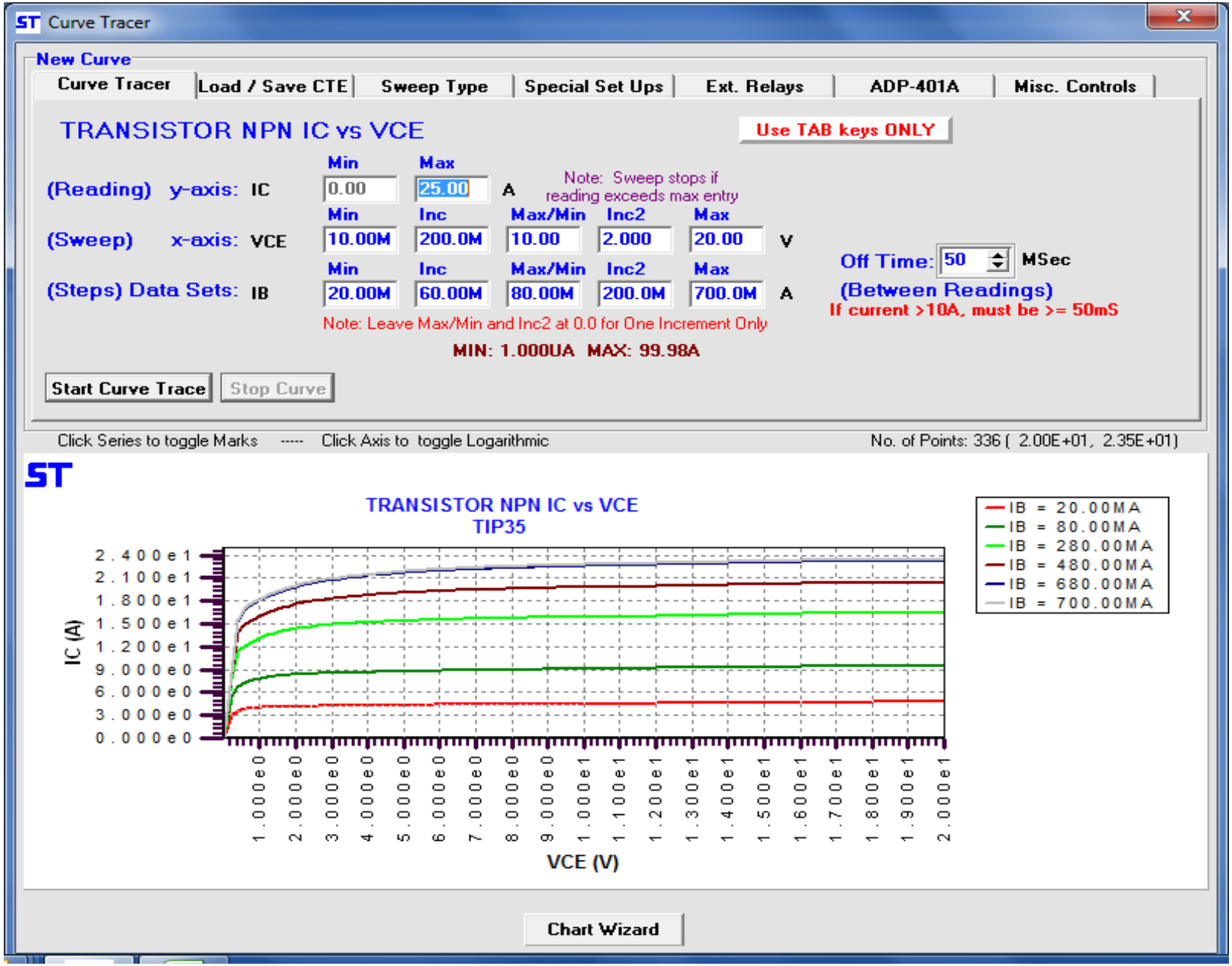
CURVE SUITE


ST Curve Tracer Program Control
Curve Tracer Entry Files (click first empty box to select)
IRF610 IDON vs VDS
IRF610 IDON vs VGS
IRF610 IDSS vs VDS
IRF610 RDSON vs VGS
Curve # 1
Curve # 2
Curve # 3
Curve # 4
Curve # 5
Curve # 6
Curve # 7
Curve # 8
Curve # 9
Curve # 10
\..\irf610.CTP
Load Curve Tracer Suite
Save Curve Tracer Suite
Action
Sending STI CTS Program.
Sending STI Curve #1 Data.
Receiving STI Curve [1] Data Points.
Received 90 Data Points.
Sending STI Curve #2 Data.
Receiving STI Curve [2] Data Points.
Received 48 Data Points.
Start Curve Tracer Suite
View Next Chart
Chart Wizard
MOSFET N-CHANNEL IDON vs VGS
IRF610
VDS = 2.00V
VDS = 10.00V
IDON
3.00e0
2.50e0
2.00e0
1.50e0
1.00e0
5.00e-1
4.00e0
4.50e0
5.00e0
5.50e0
6.00e0
6.50e0
7.00e0
7.50e0
8.00e0
8.50e0
9.00e0
9.50e0
1.00e1
VGS

VCESAT vs IC


Curve Tracer
New Curve
Curve Tracer
Load / Save CTE
Sweep Type
Special Set Ups
Ext. Relays
ADP-401A
Misc. Controls
TRANSISTOR NPN VCESAT vs IC
Use TAB keys ONLY
Fixed Bias
IC/IB
10.01
Min
Max
(Reading) y-axis: VCESAT
0.00
600.0M
V
Note: Sweep stops if reading exceeds max entry
Min
Inc
Max/Min
Inc2
Max
(Sweep) x-axis: IC
30.00M
0
0.00
0
30.00
A
Off Time:
50
MSec
(Between Readings)
If current >10A, must be >= 50mS
Note: Leave Max/Min and Inc2 at 0.0 for One Increment Only
MIN: 2.500MV MAX: 9.897V
Start Curve Trace
Stop Curve
Click Series to toggle Marks ----- Click Axis to toggle Logarithmic
No. of Points: 31 (3.00E+01, 9.08E-01)
TRANSISTOR NPN VCESAT vs IC
TIP35
6.000e-1
5.000e-1
4.000e-1
3.000e-1
2.000e-1
1.000e-1
1.388e-16
VCESAT (V)
3.000e-2
3.000e-1
3.000e0
3.000e1
IC (A)
Chart Wizard

IC vs VCE


Curve Tracer
New Curve
Curve Tracer
Load / Save CTE
Sweep Type
Special Set Ups
Ext. Relays
ADP-401A
Misc. Controls
TRANSISTOR NPN IC vs VCE
Use TAB keys ONLY
Min
Max
(Reading) y-axis: IC
0.00
25.00
A
Note: Sweep stops if reading exceeds max entry
Min
Inc
Max/Min
Inc2
Max
(Sweep) x-axis: VCE
10.00M
200.0M
10.00
2.000
20.00
V
(Steps) Data Sets: IB
20.00M
60.00M
80.00M
200.0M
700.0M
A
Off Time: 50 MSec
(Between Readings)
If current >10A, must be >= 50mS
Note: Leave Max/Min and Inc2 at 0.0 for One Increment Only
MIN: 1.000UA MAX: 99.98A
Start Curve Trace
Stop Curve
Click Series to toggle Marks ----- Click Axis to toggle Logarithmic
No. of Points: 336 (2.00E+01, 2.35E+01)
TRANSISTOR NPN IC vs VCE
TIP35
IB = 20.00MA
IB = 80.00MA
IB = 280.00MA
IB = 480.00MA
IB = 680.00MA
IB = 700.00MA
IC (A)
2.400e1
2.100e1
1.800e1
1.500e1
1.200e1
9.000e0
6.000e0
3.000e0
0.000e0
1.000e0
2.000e0
3.000e0
4.000e0
5.000e0
6.000e0
7.000e0
8.000e0
9.000e0
1.000e1
1.100e1
1.200e1
1.300e1
1.400e1
1.500e1
1.600e1
1.700e1
1.800e1
1.900e1
2.000e1
VCE (V)
Chart Wizard