

$P_{max} = P_m$ = maximum Power

I_{sc} = Short Circuit Current

$V_{max} = V_{mp}$ = Maximum Power Voltage

V_{oc} = Open Circuit Voltage

$I_{max} = I_{mp}$ = Maximum Power Current

ff = fill factor

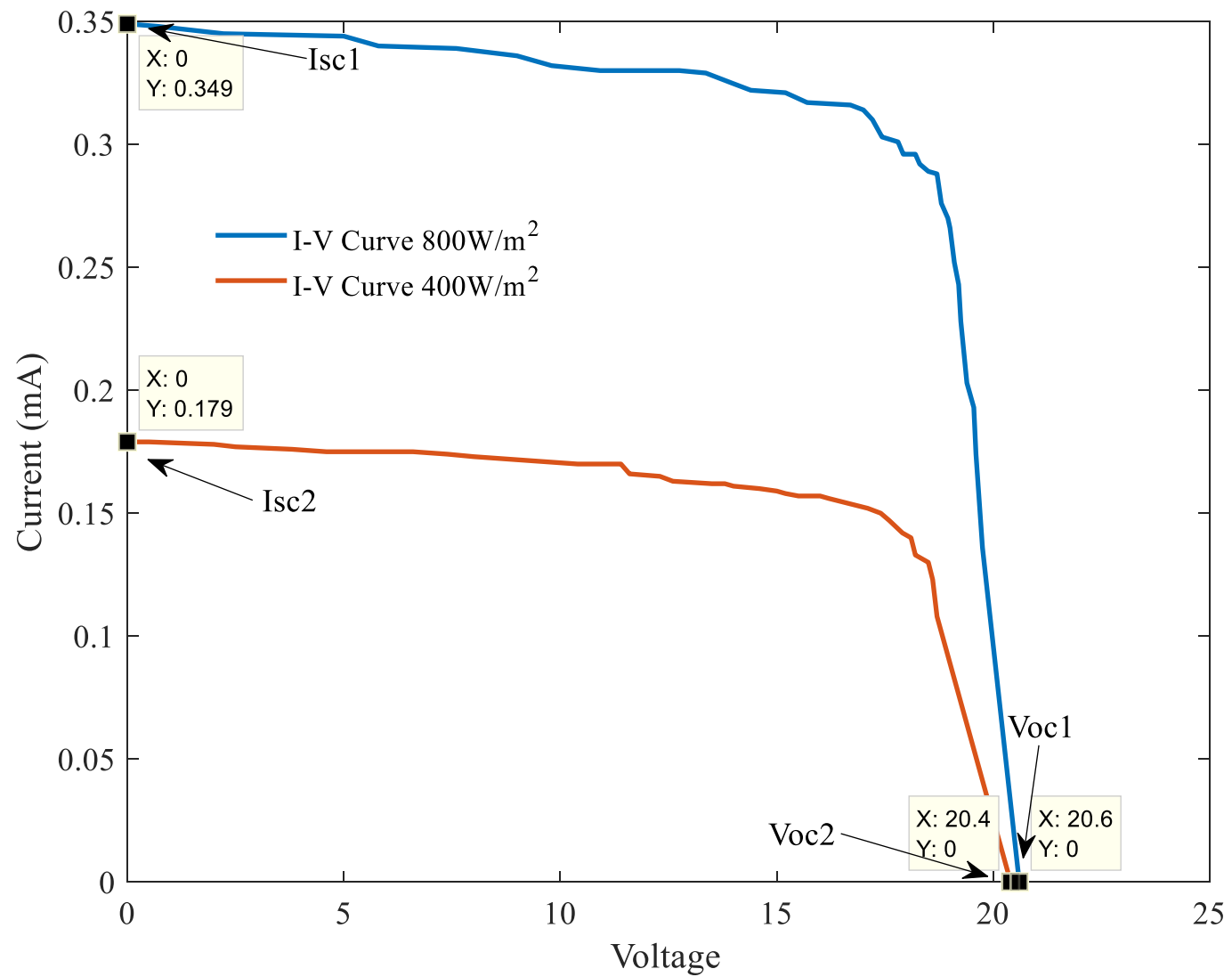
eff = Panel Efficiency

Ideality Factor of Silicon Cell = 1.5

R_{sh} = Shunt Resistance

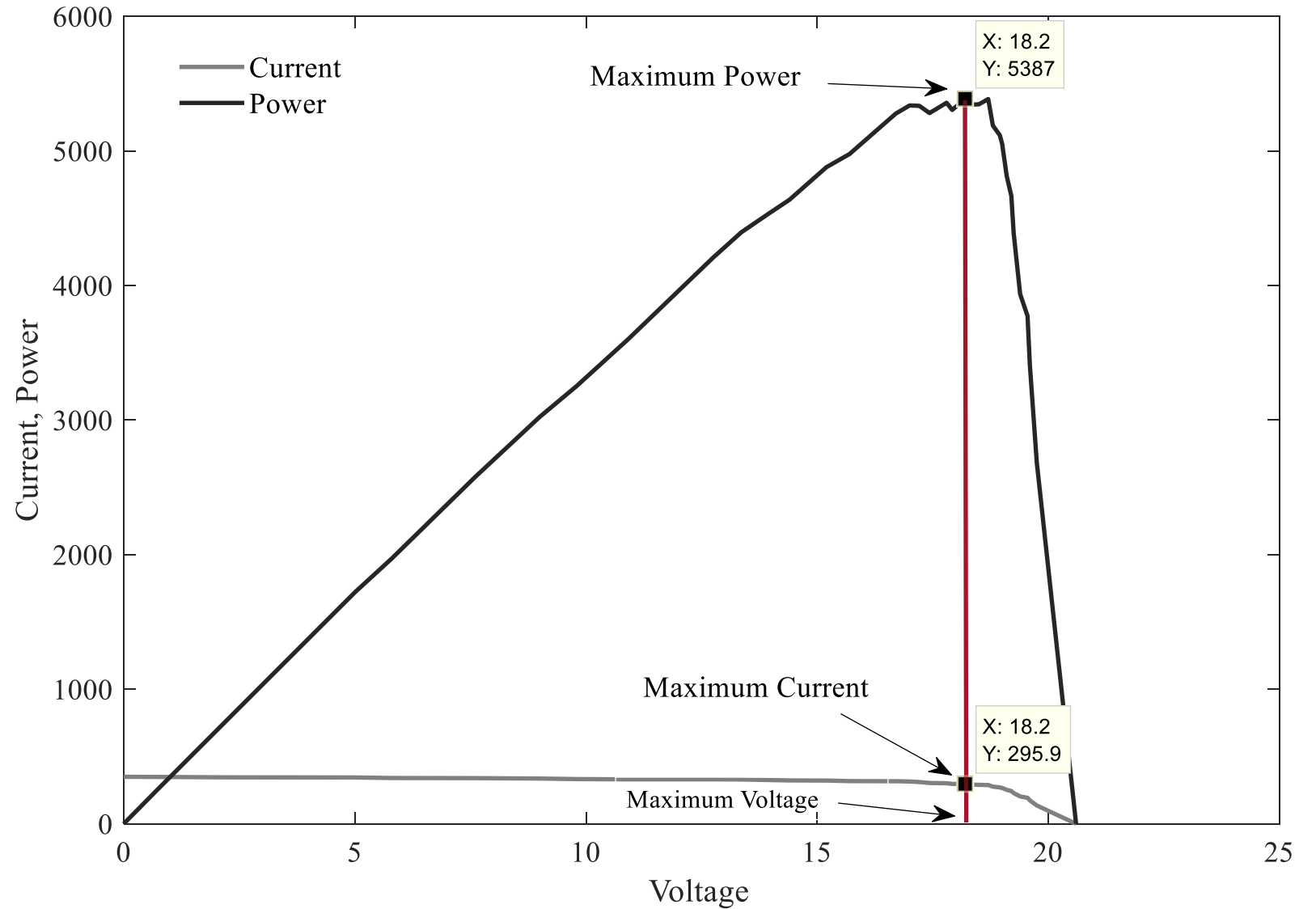
R_s = Series Resistance

Number of Cells = 36



I-V Characteristics of Panel 01

Isc =
349
Pmax =
5.3872e+03
Voc =
20.6000
Vmax =
18.2000
ff =
0.7493
Imax =
296
eff =
6.7340



panel 1 800Wm2

Isc =

179

Voc =

20.4000

ff =

0.7148

eff =

6.5250

Pmax =

2610

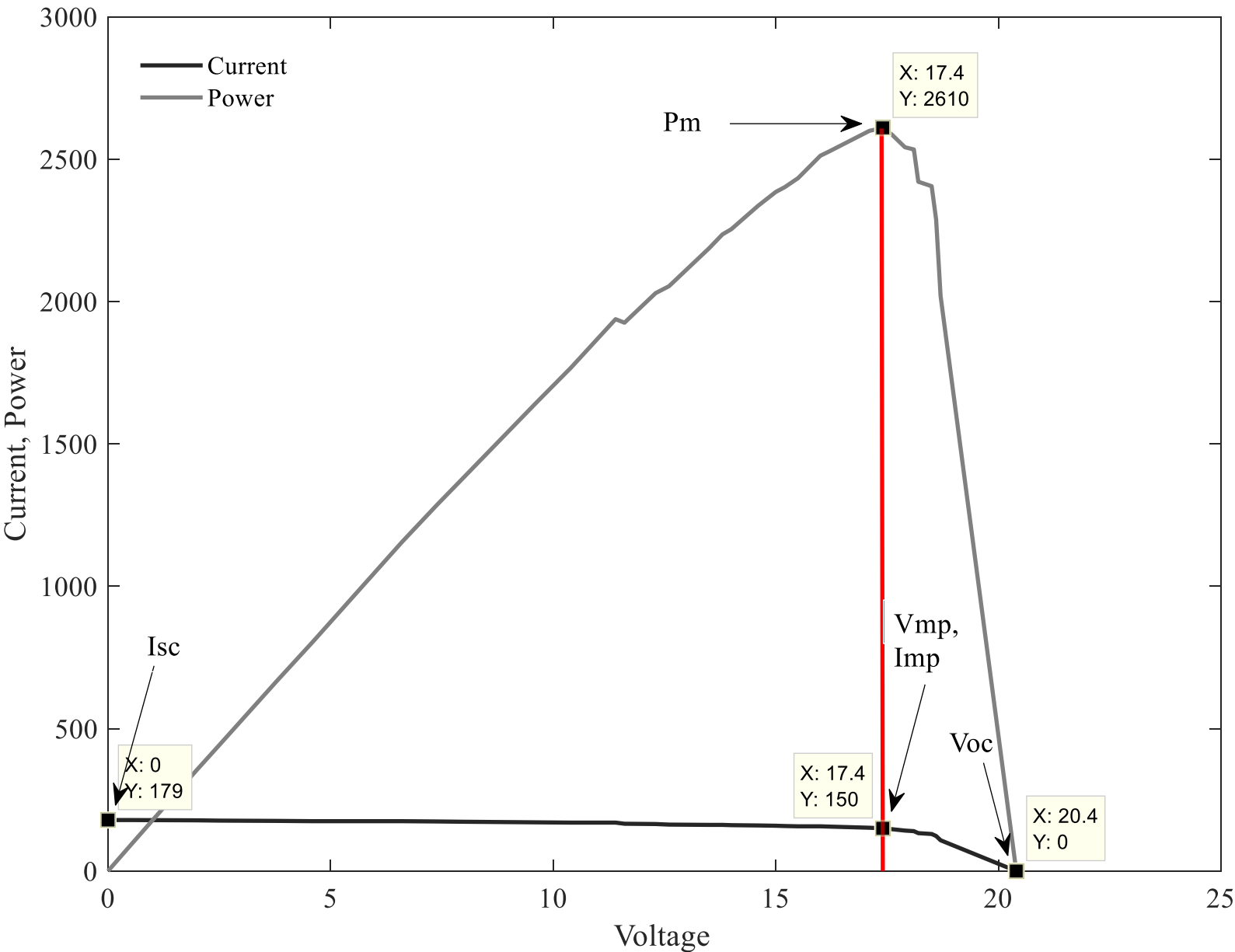
Vmax =

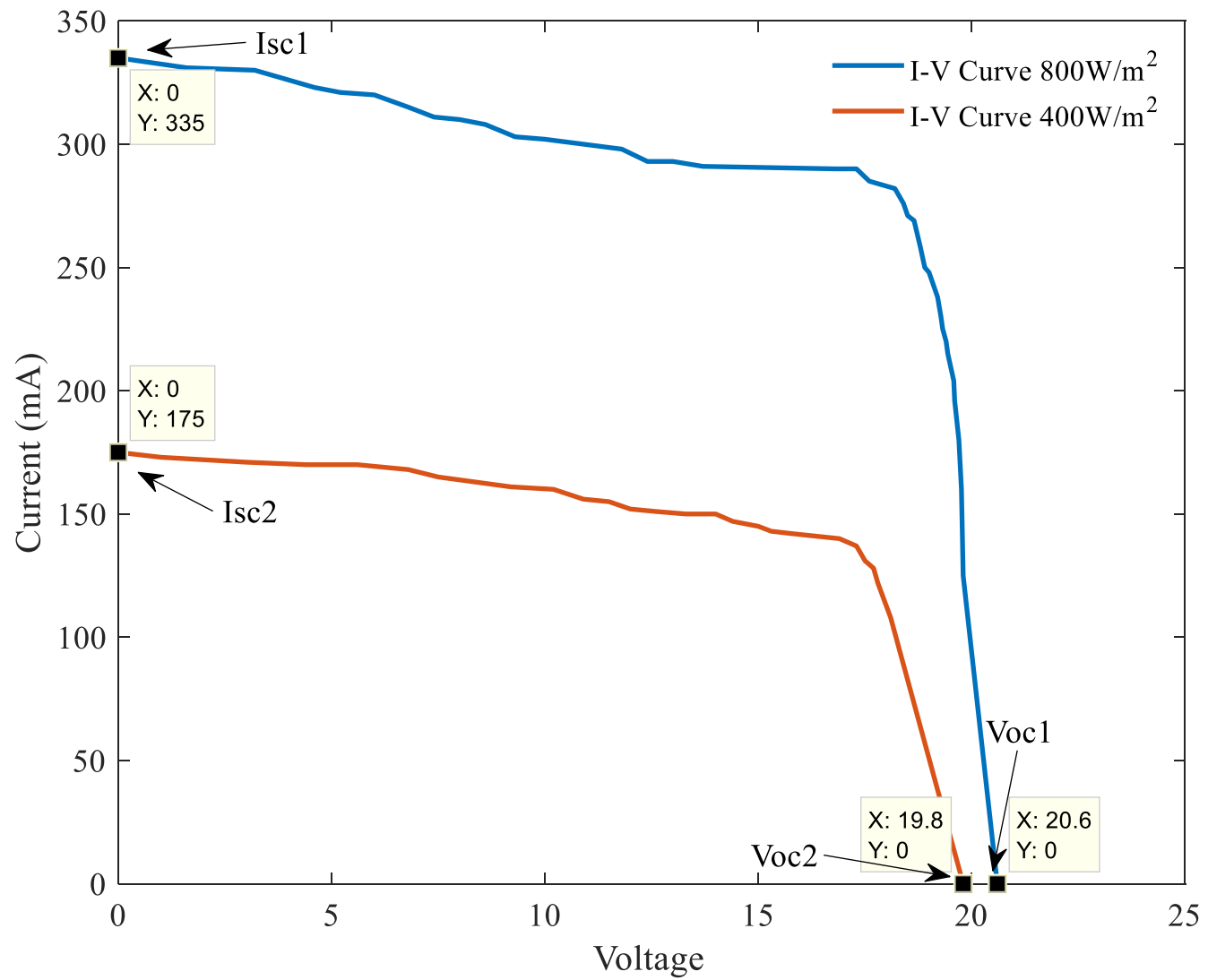
17.4000

Imax =

150

panel 1 400Wm2





I-V Characteristics of Panel 02

Isc =
335

Pmax =
5.1324e+03

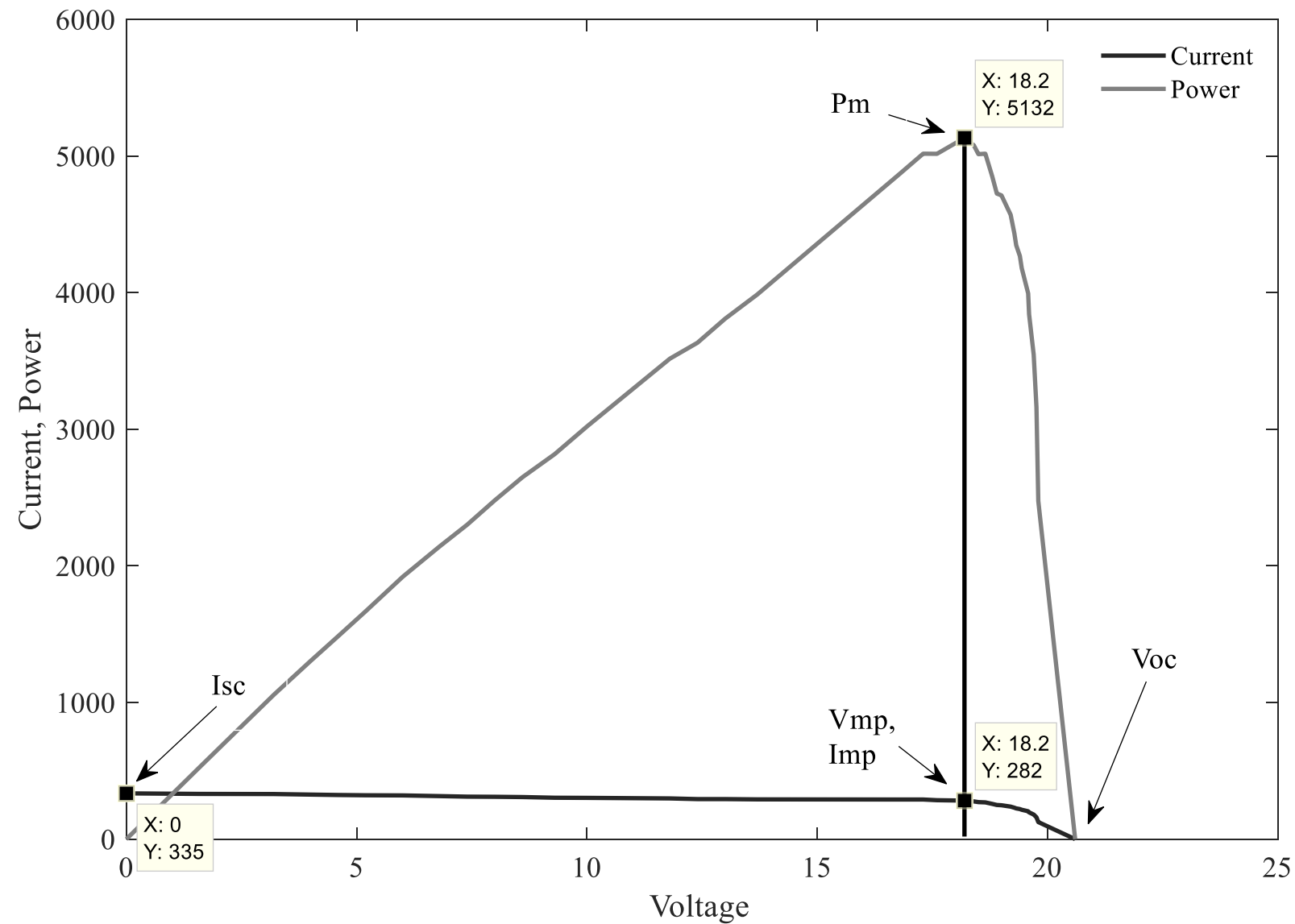
Vmax =
18.2000

Imax =
282

ff =
0.7437

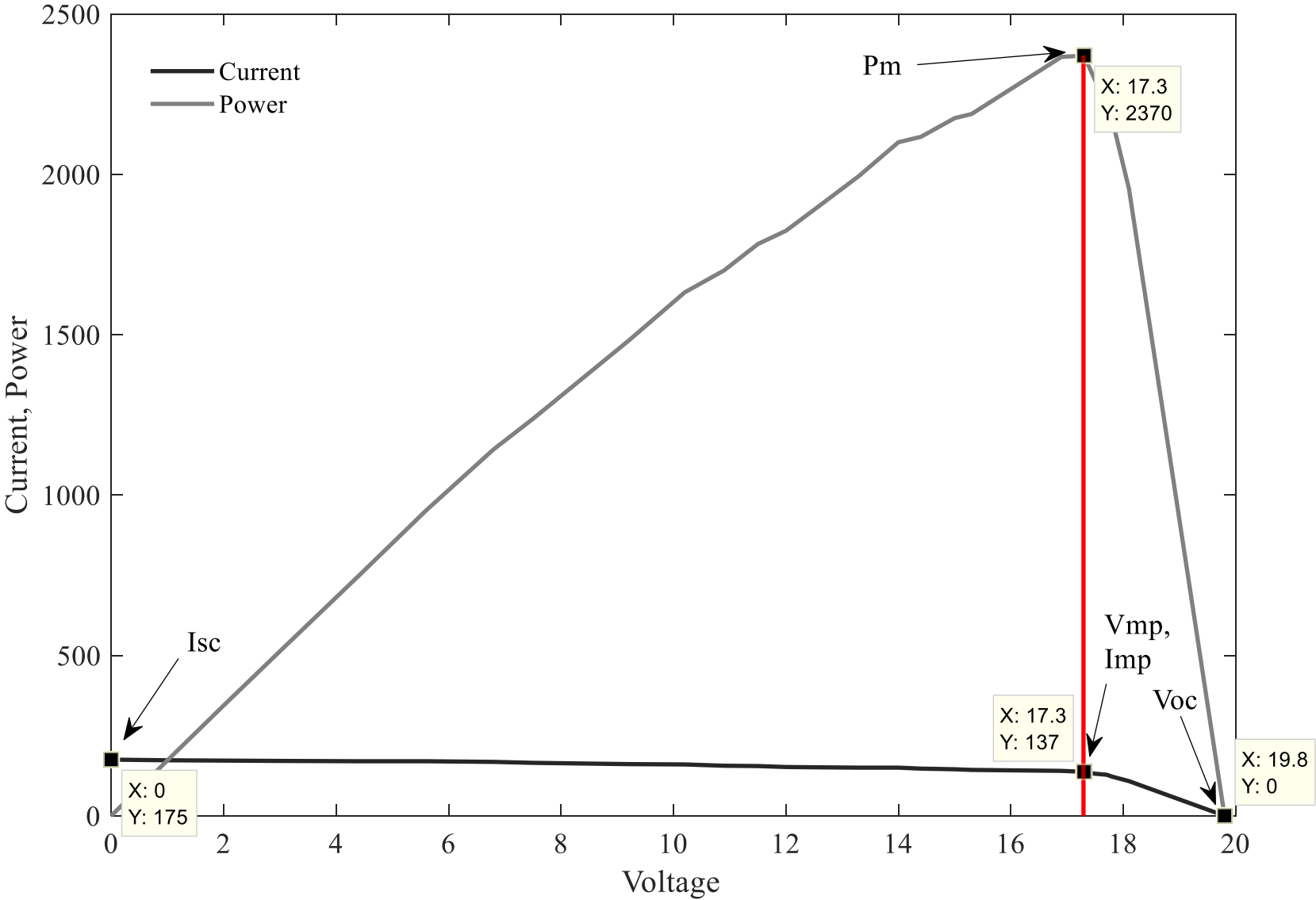
eff =
6.4155

panel 2 800Wm2

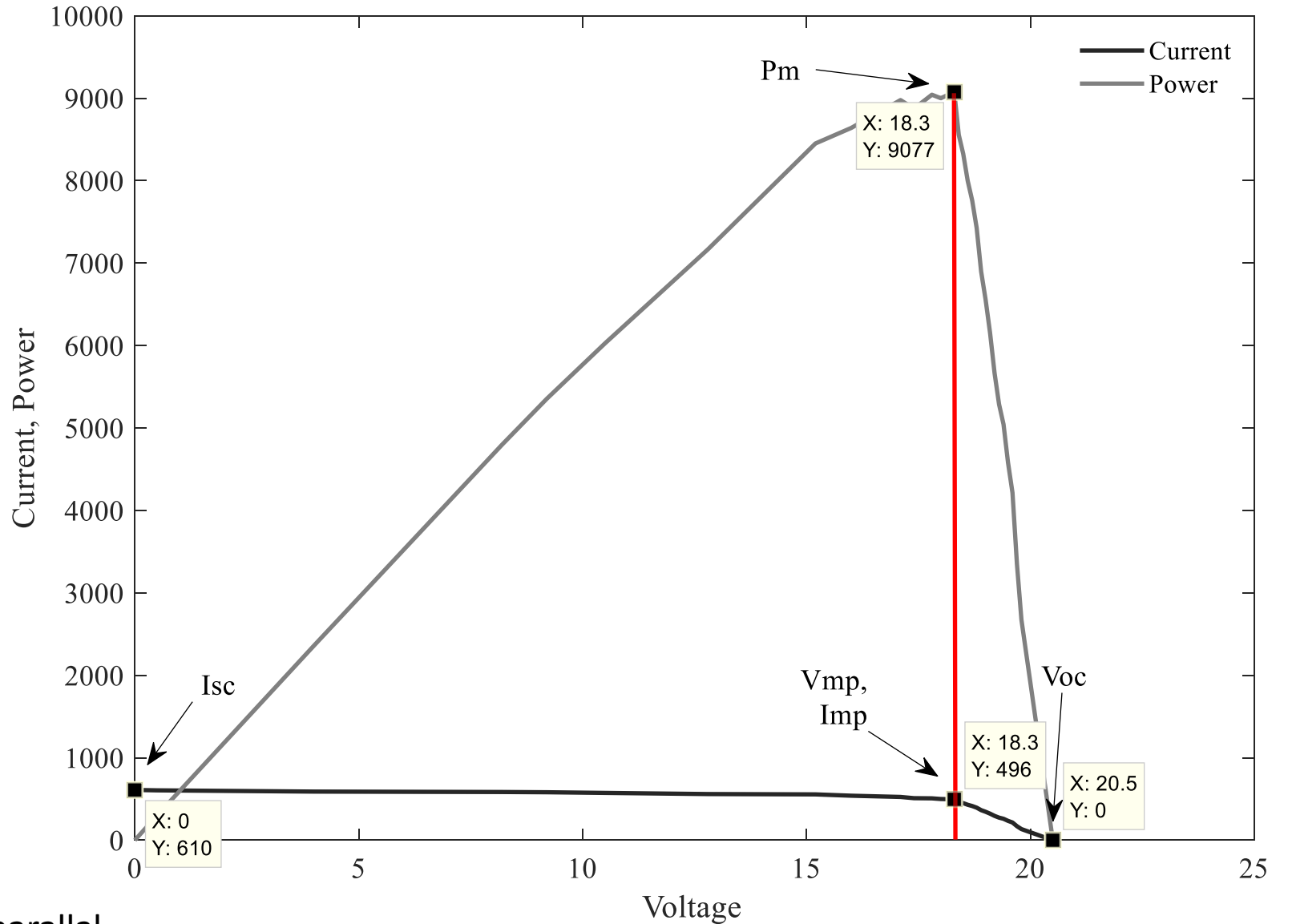


Isc =	Pmax =
175	2.3701e+03
Voc =	Vmax =
19.8000	17.3000
ff =	Imax =
0.6840	137
eff =	
5.9253	

panel 2 400Wm2



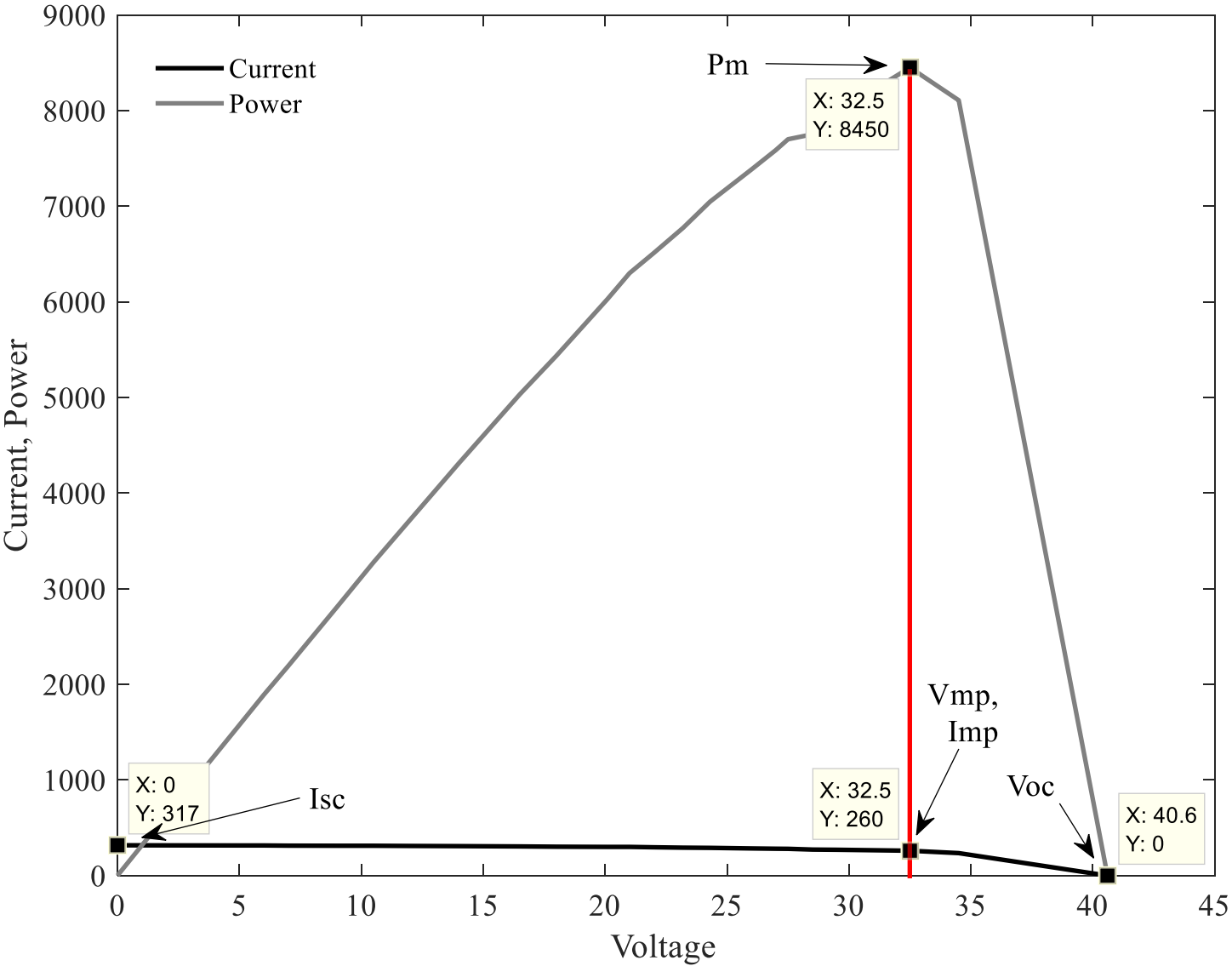
Pmax =	Isc =
9.0768e+03	610
Vmax =	Voc =
18.3000	20.5000
Imax =	ff =
496.0000	0.7259
	eff =
	11.3460



2 panel parallal
800Wm2

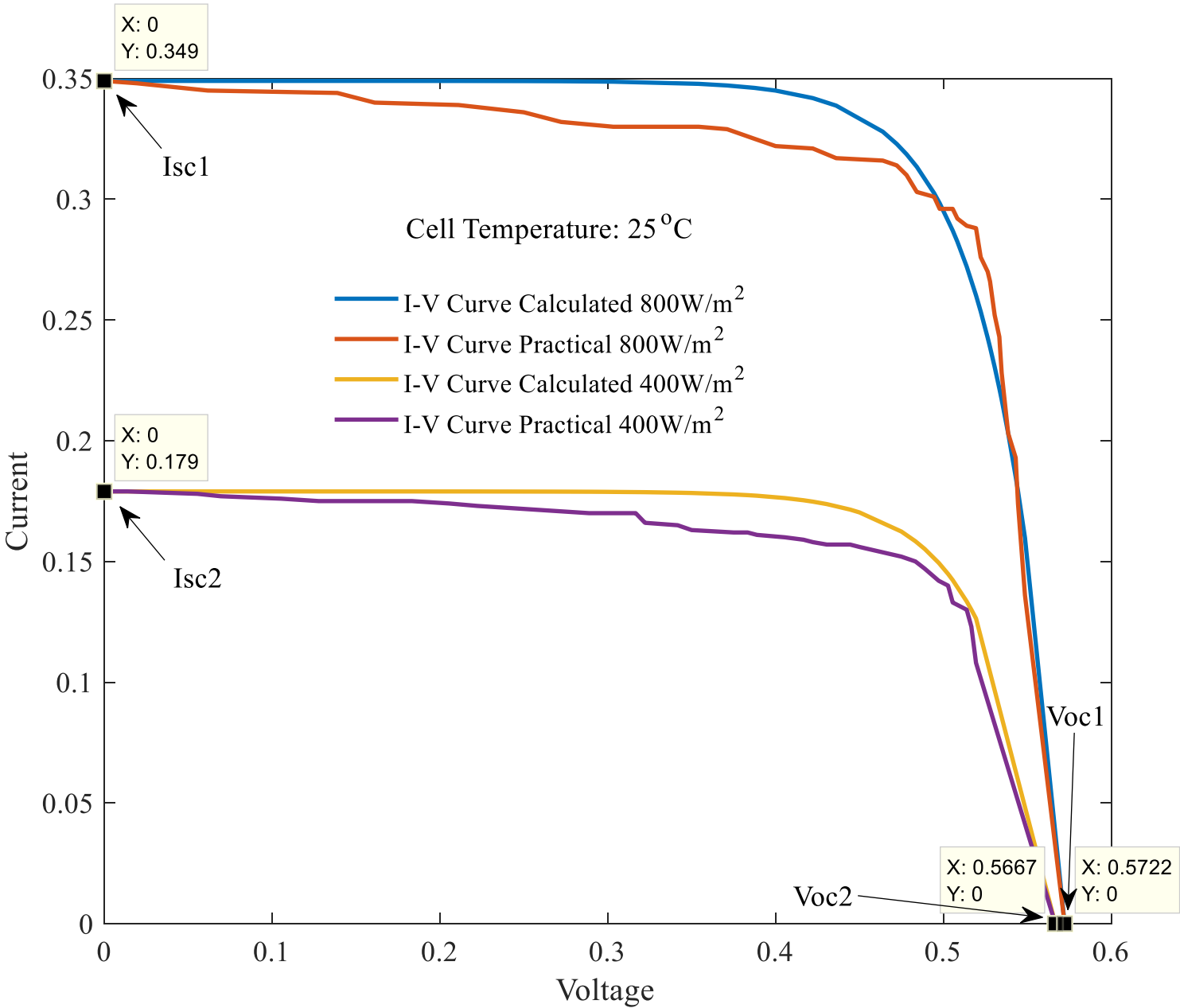
Isc =	Pmax =
317	8450
Voc =	Vmax =
40.6000	32.5000
ff =	Imax =
0.6566	260
eff =	
10.5625	

2 series panel
800W/m²



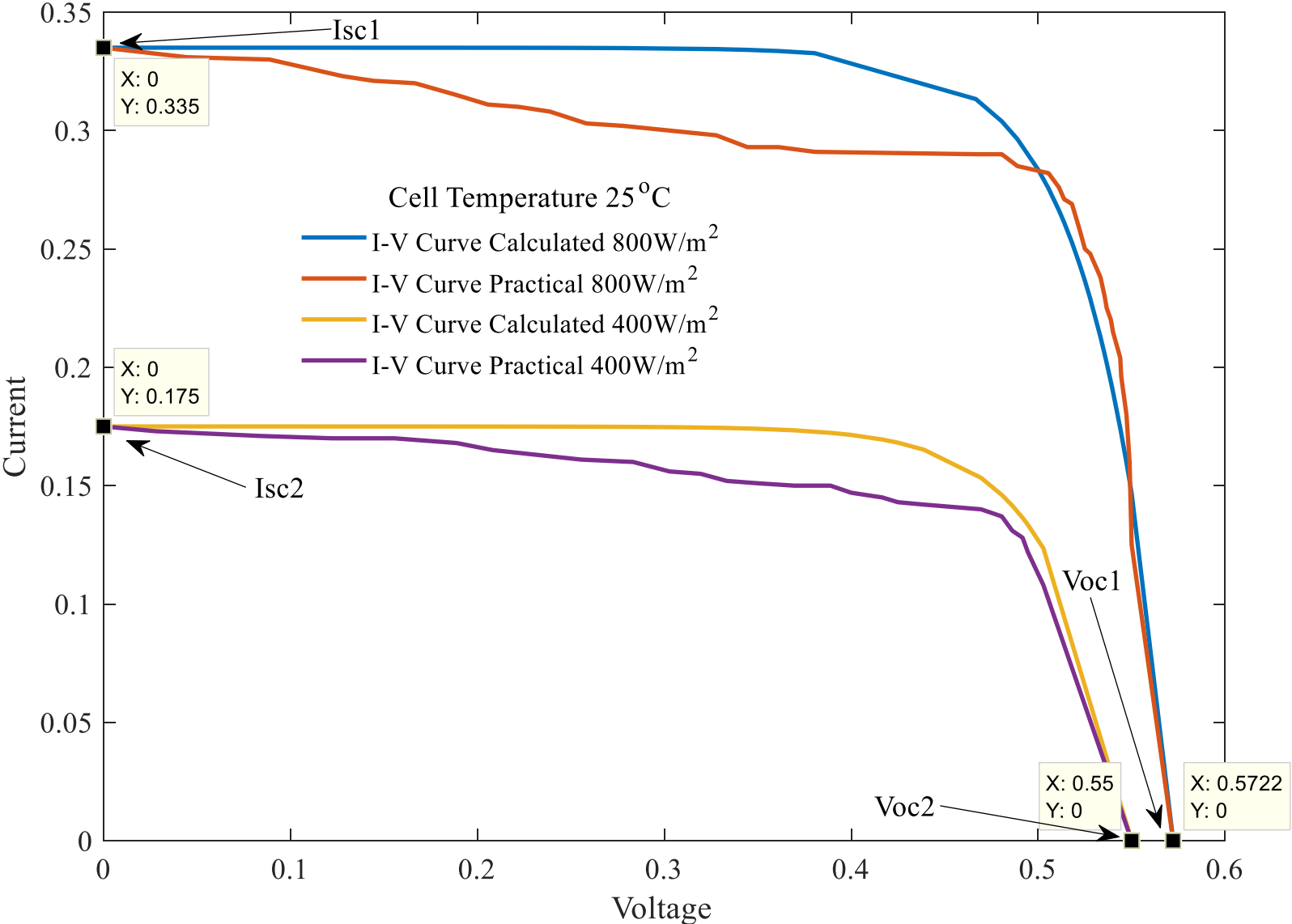
Ideality factor, n = 0.3236	Isc1 = 0.3490
	Voc1 = 0.5722
	Isc2 = 0.1790
	Voc2 = 0.5667

panel 01

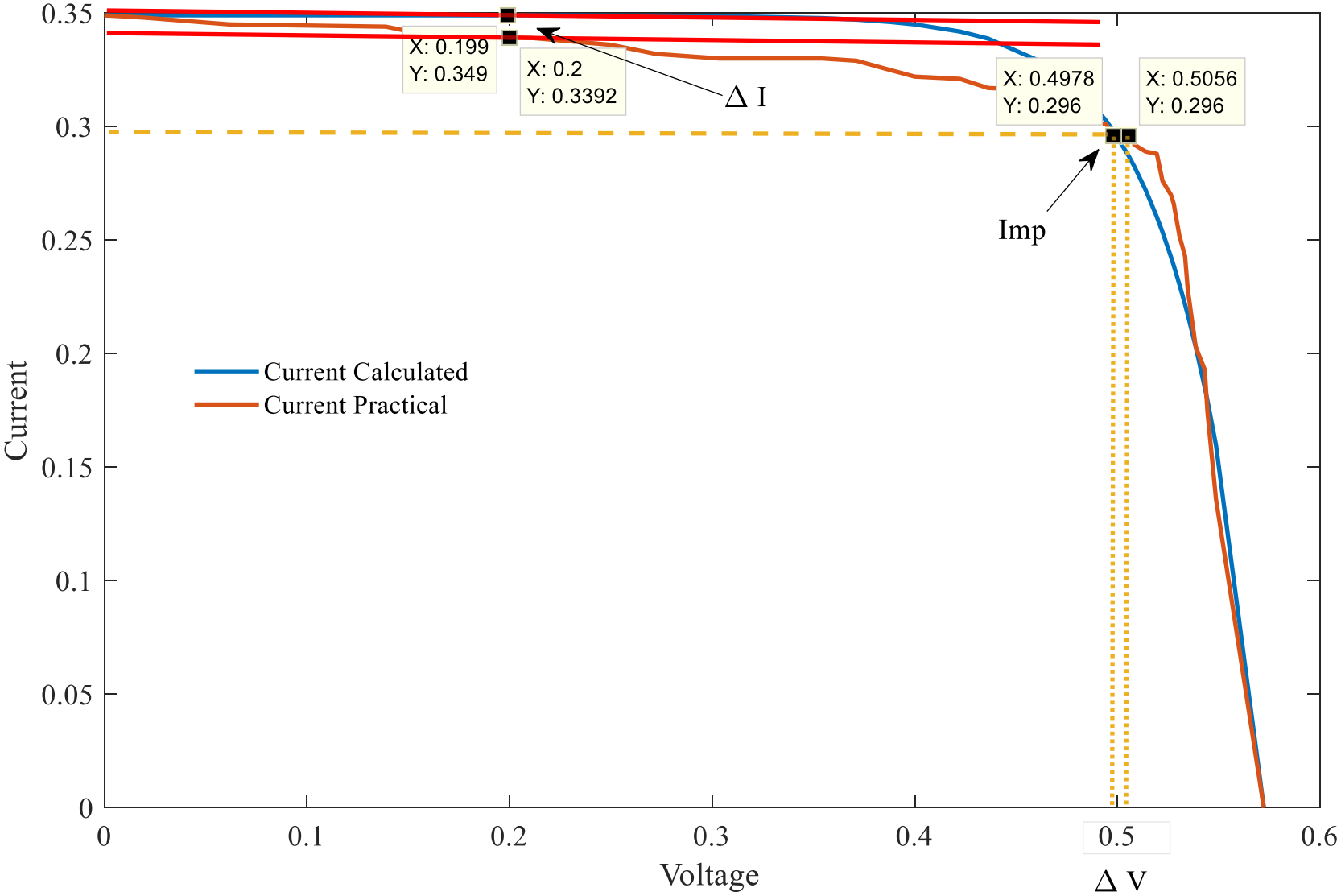


Ideality factor, n = 1.3309	Isc1 = 0.3350
	Voc1 = 0.5722
	Isc2 = 0.1750
	Voc2 = 0.5500

panel 02

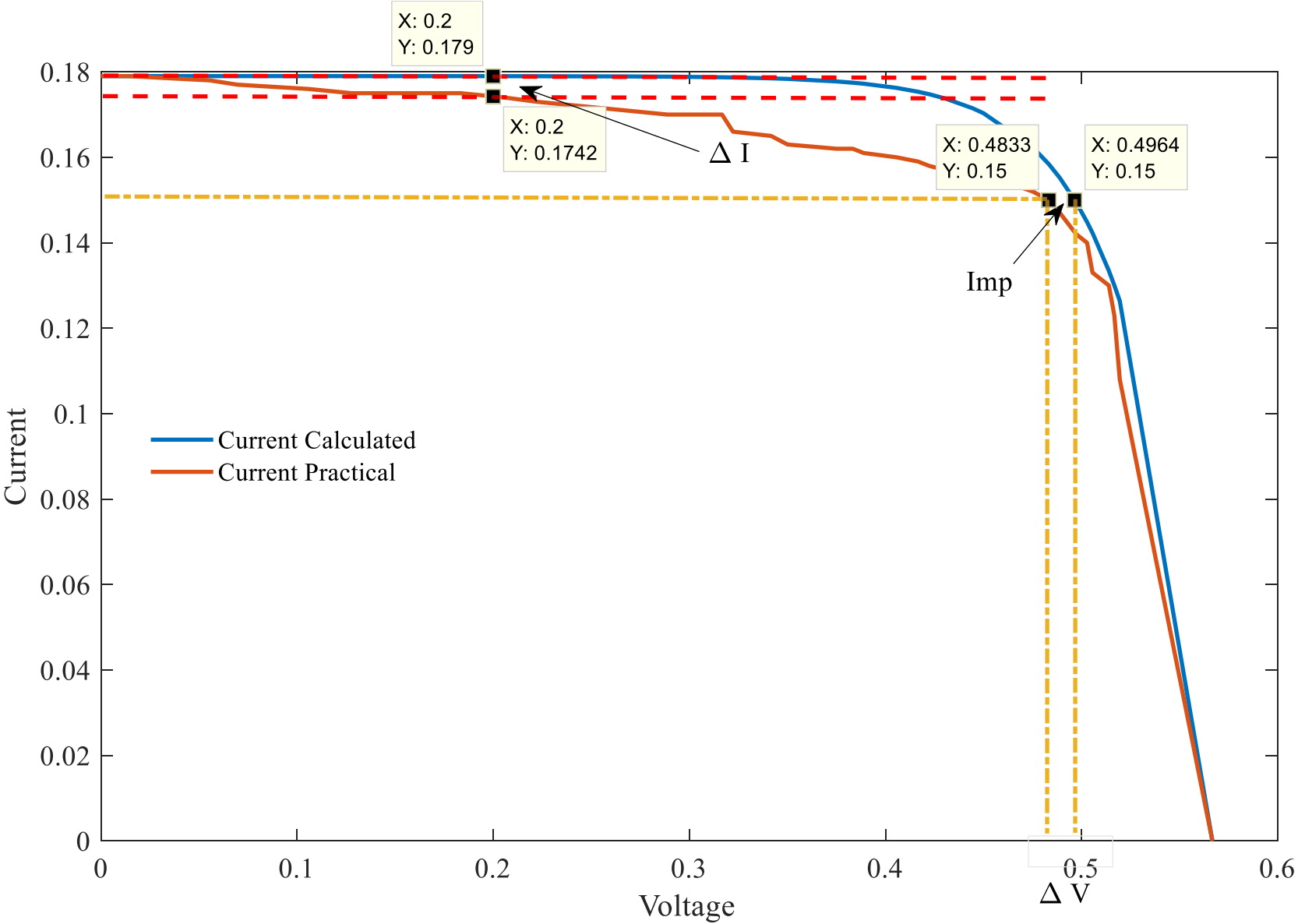


$R_s = \Delta V / I_{mp}$	$\Delta I = I_{sc} - I_1$
$\Delta V = (0.5056 - 0.4978)$	$V_1 / I_{sh} = R_{sh}$
$I_{mp} = 0.296$	$V_1 = 0.2$
$R_s = 0.026$	$R_{sh} = 20.41$



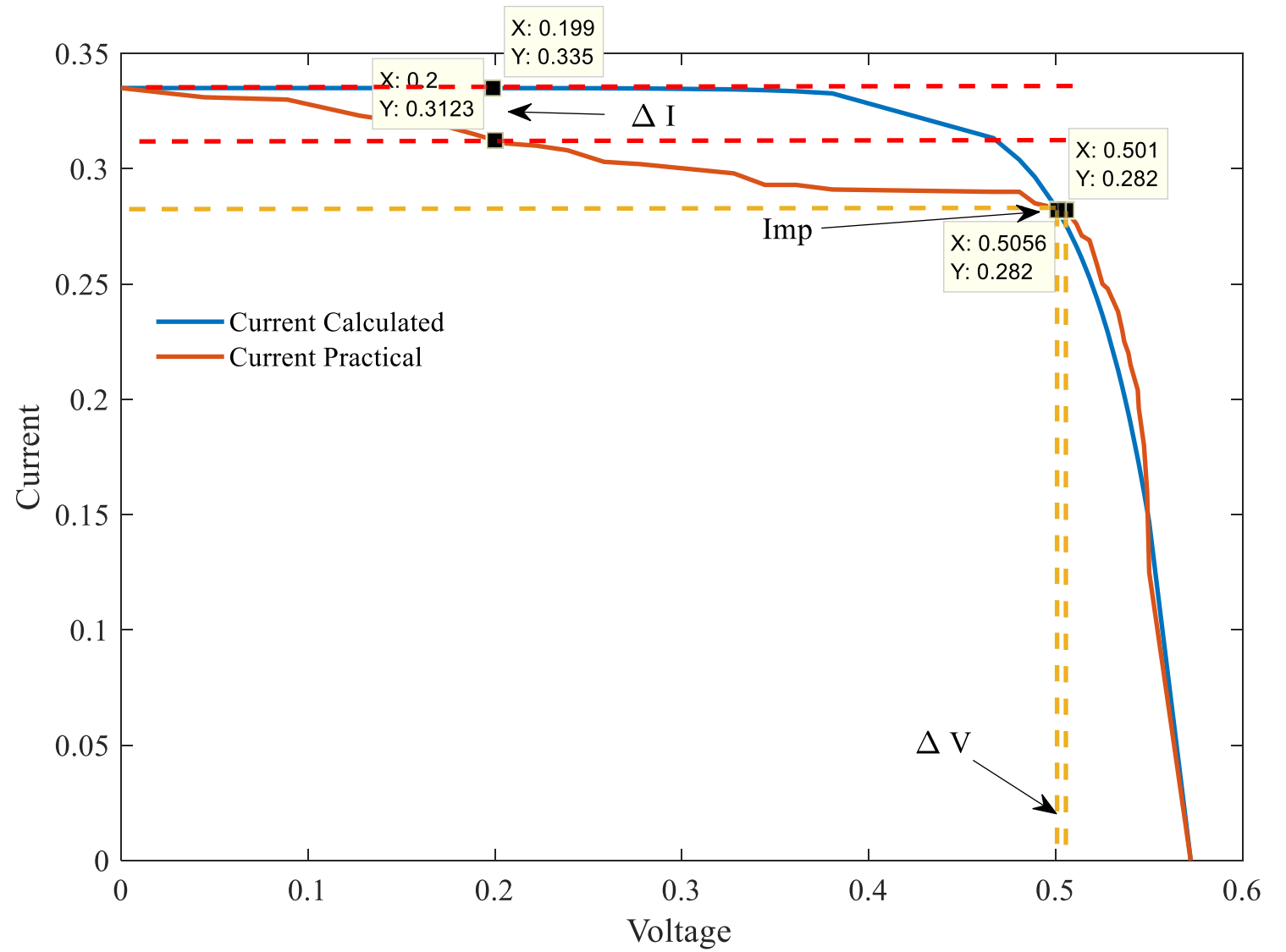
panel 01 800W/m2

$R_s = \Delta V / I_{mp}$	$\Delta I = I_{sc} - I_1 = I_{sh}$
$\Delta V = 0.0131$	$V_1 / I_{sh} = R_{sh}$
$I_{mp} = 0.15$	$V_1 = 0.2$
$R_s = 0.087$	$R_{sh} = 41.67$



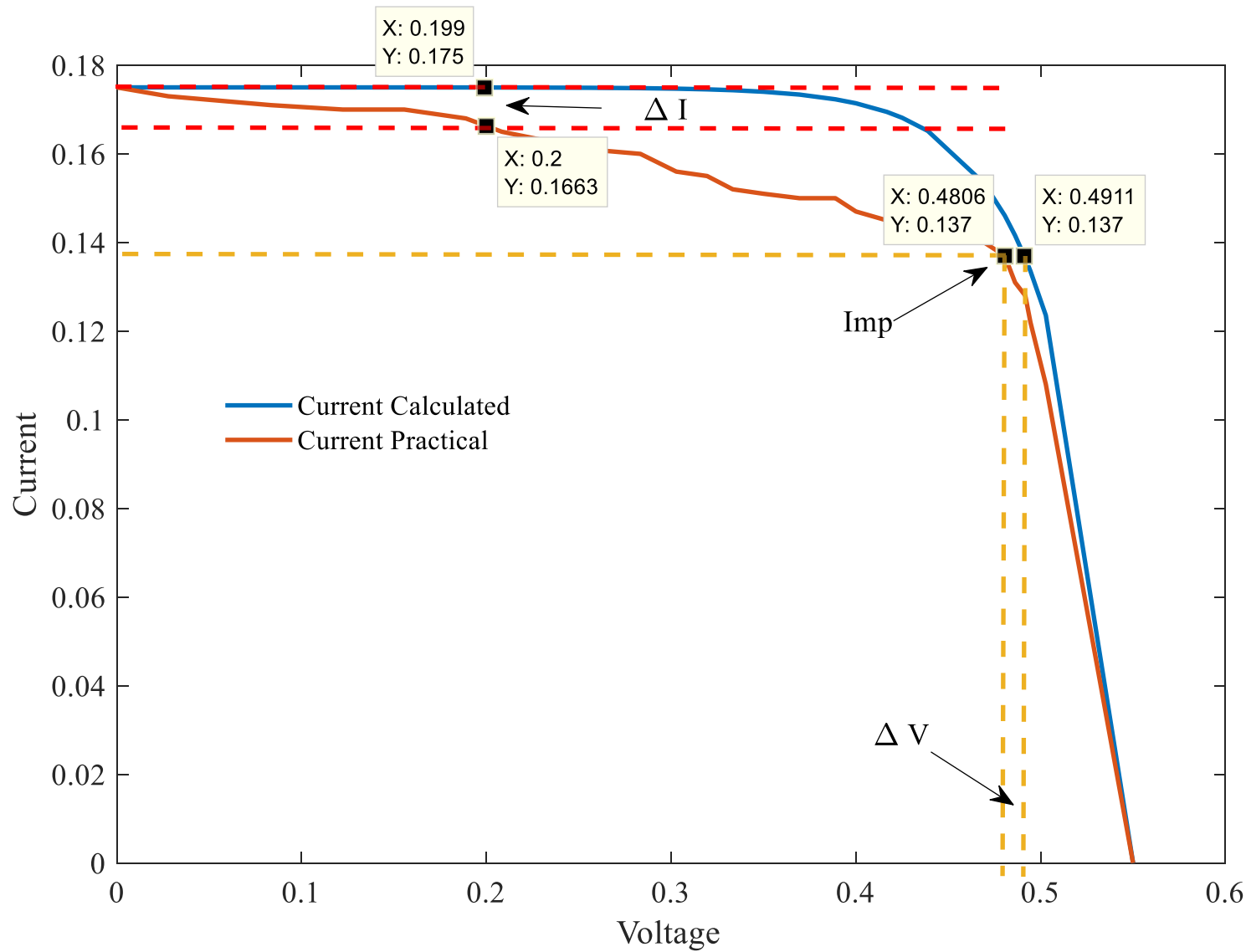
panel 01 400W/m2

$R_s = \Delta V / I_{mp}$ $\Delta V = 0.0046$ $I_{mp} = 0.282$ $R_s = 0.016$	$\Delta I = I_{sc} - I_1$ $= I_{sh}$ $V_1 / I_{sh} = R_{sh}$ $V_1 = 0.2$ $R_{sh} = 8.81$
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panel 02 800W/m2

$R_s = \Delta V / I_{mp}$	$\Delta I = I_{sc} - I_1 = I_{sh}$
$\Delta V = 0.0105$	$V_1 / I_{sh} = R_{sh}$
$I_{mp} = 0.137$	$V_1 = 0.2$
$R_s = 0.077$	$R_{sh} = 22.99$



panel 02 400W/m2