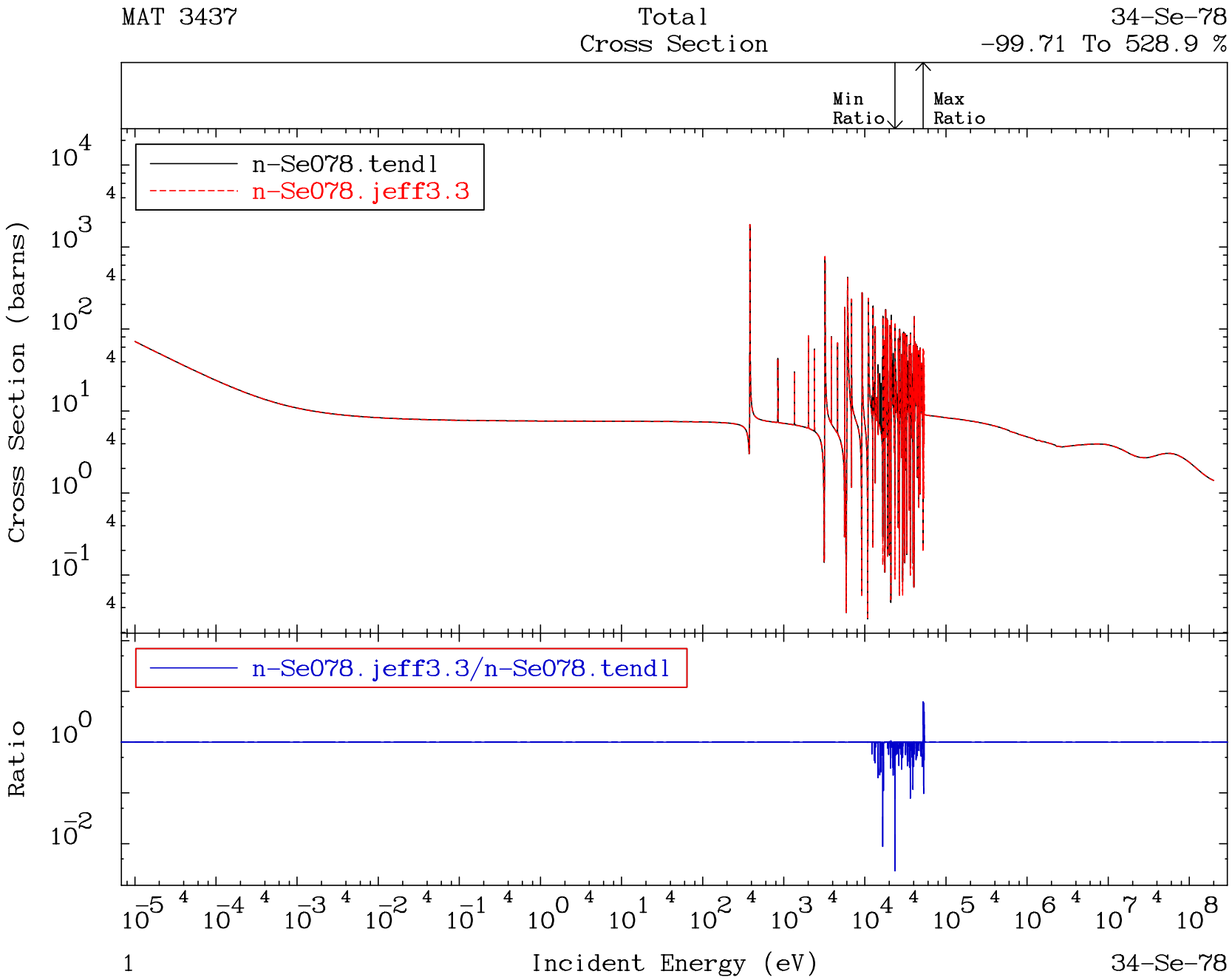
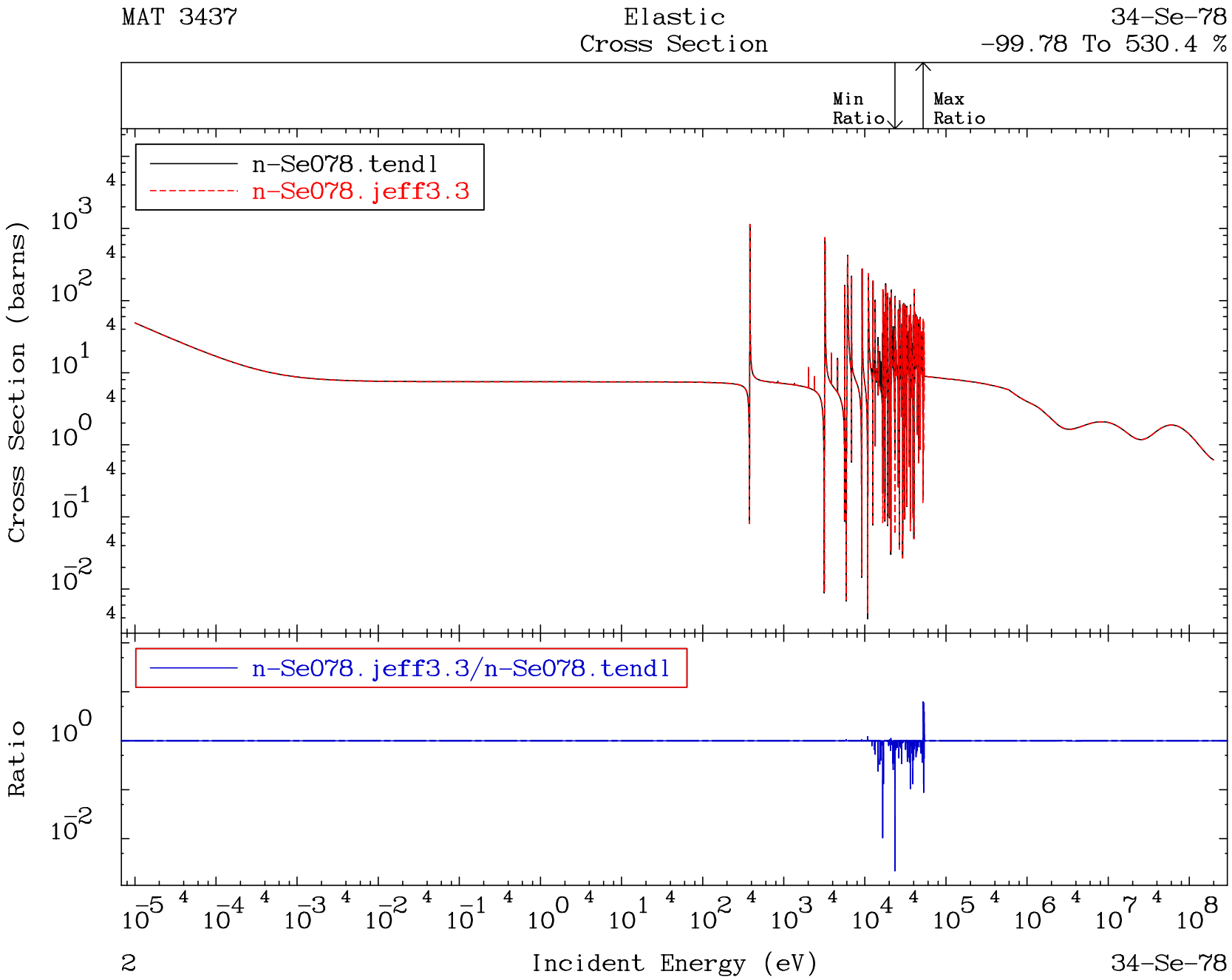
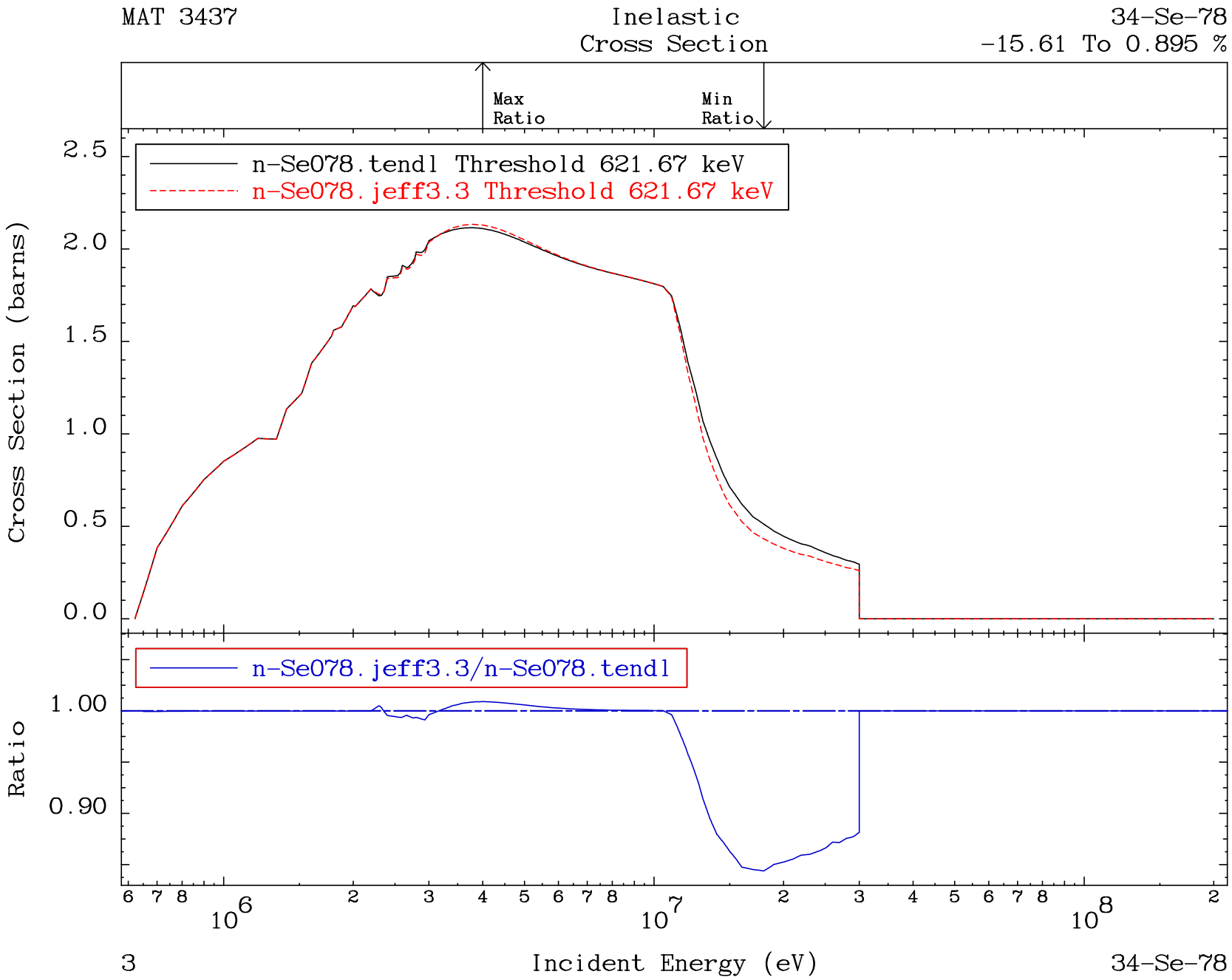
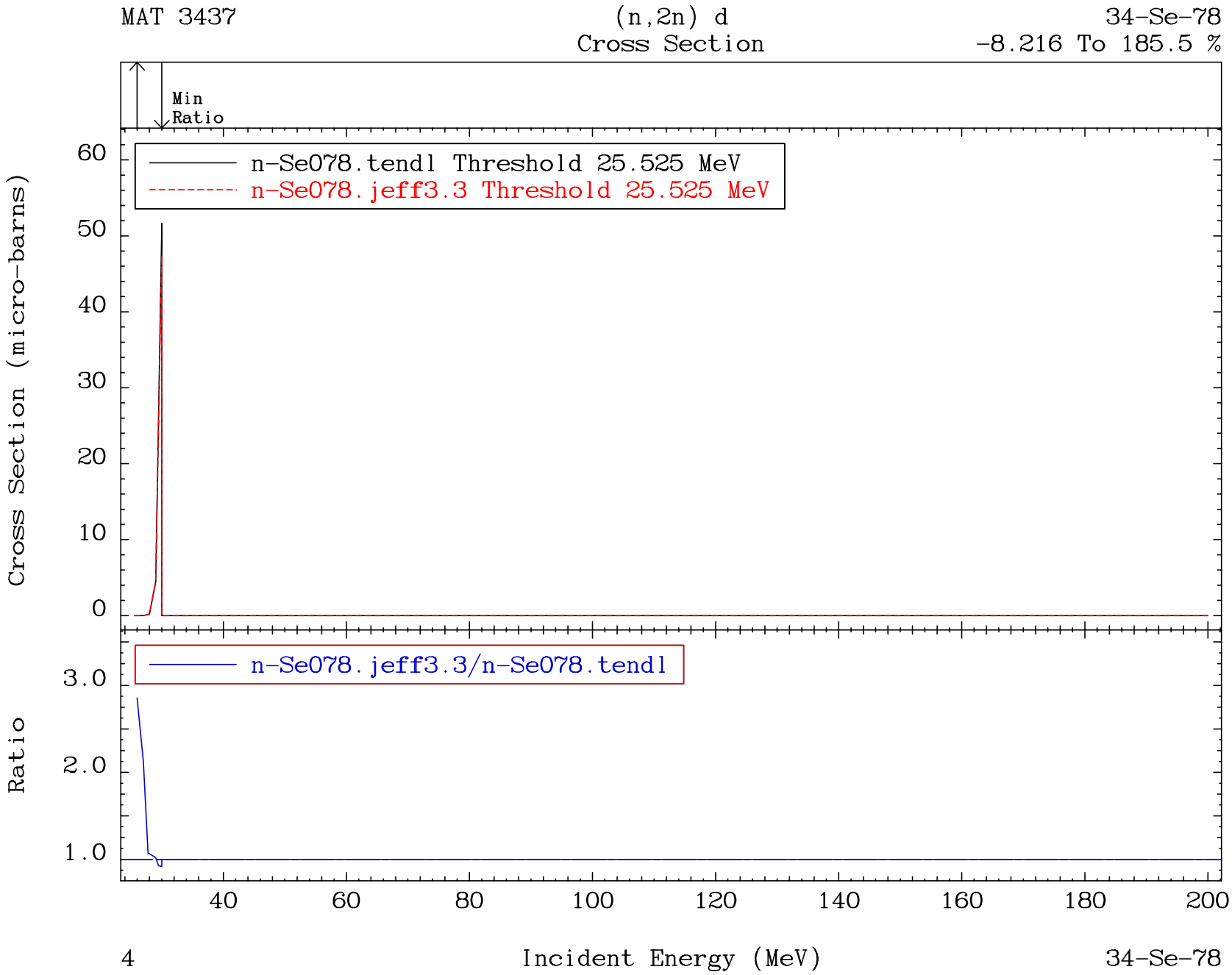
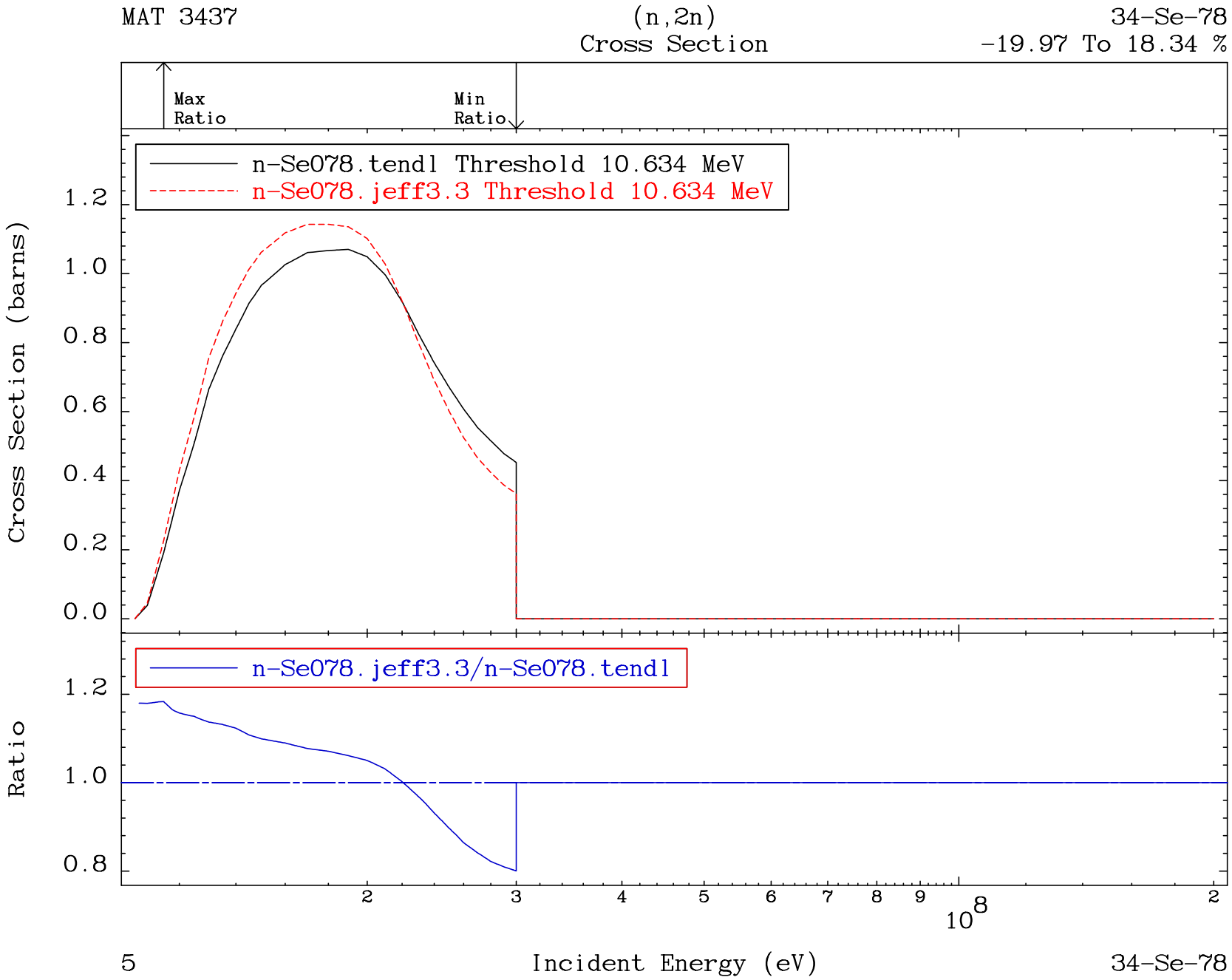
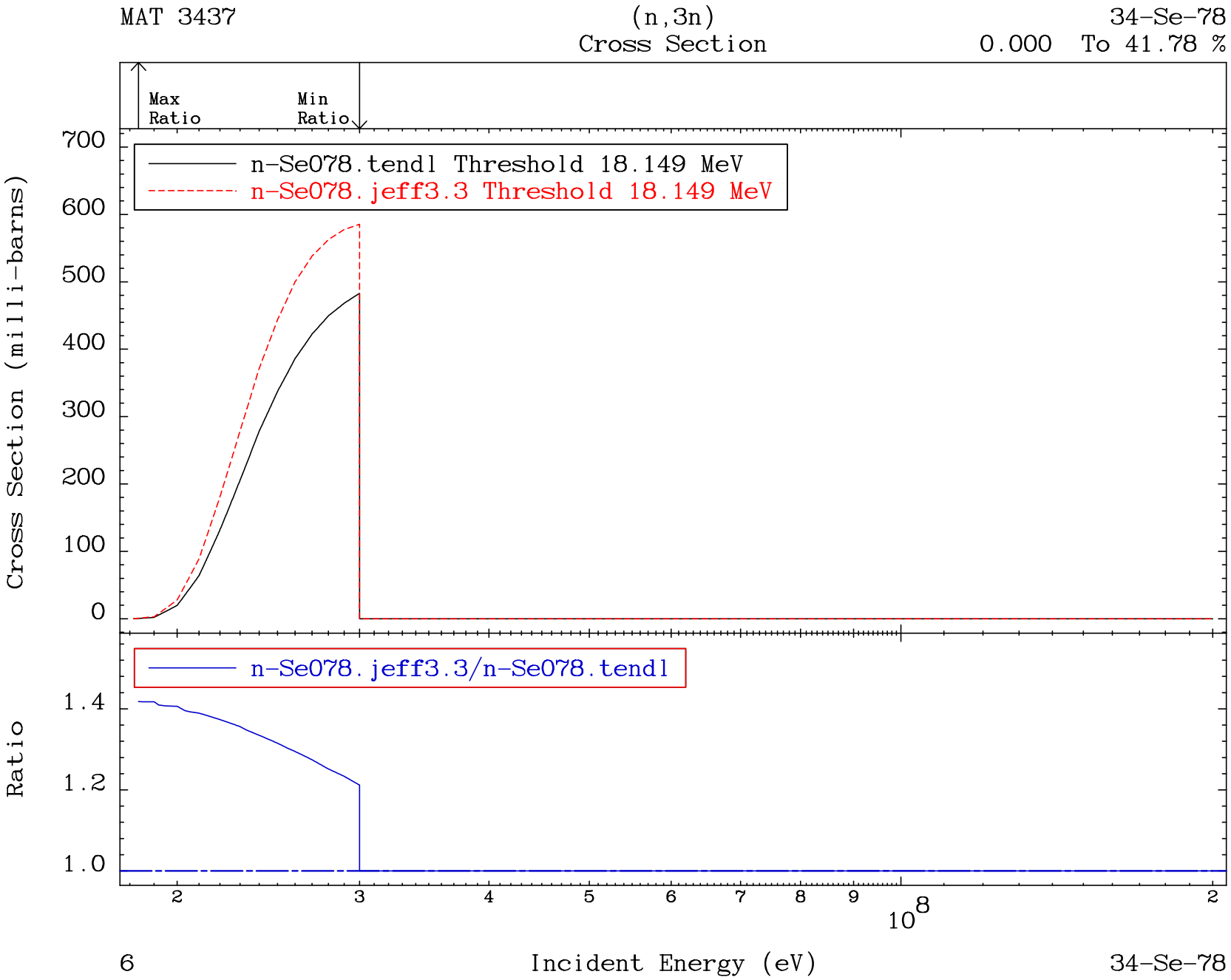

MAT 3437
Total
Cross Section
34-Se-78
-99.71 To 528.9 %
Min
Ratio
Max
Ratio
n-Se078.tendl
n-Se078.jeff3.3
Cross Section (barns)
n-Se078.jeff3.3/n-Se078.tendl
Ratio
Incident Energy (eV)
1
34-Se-78

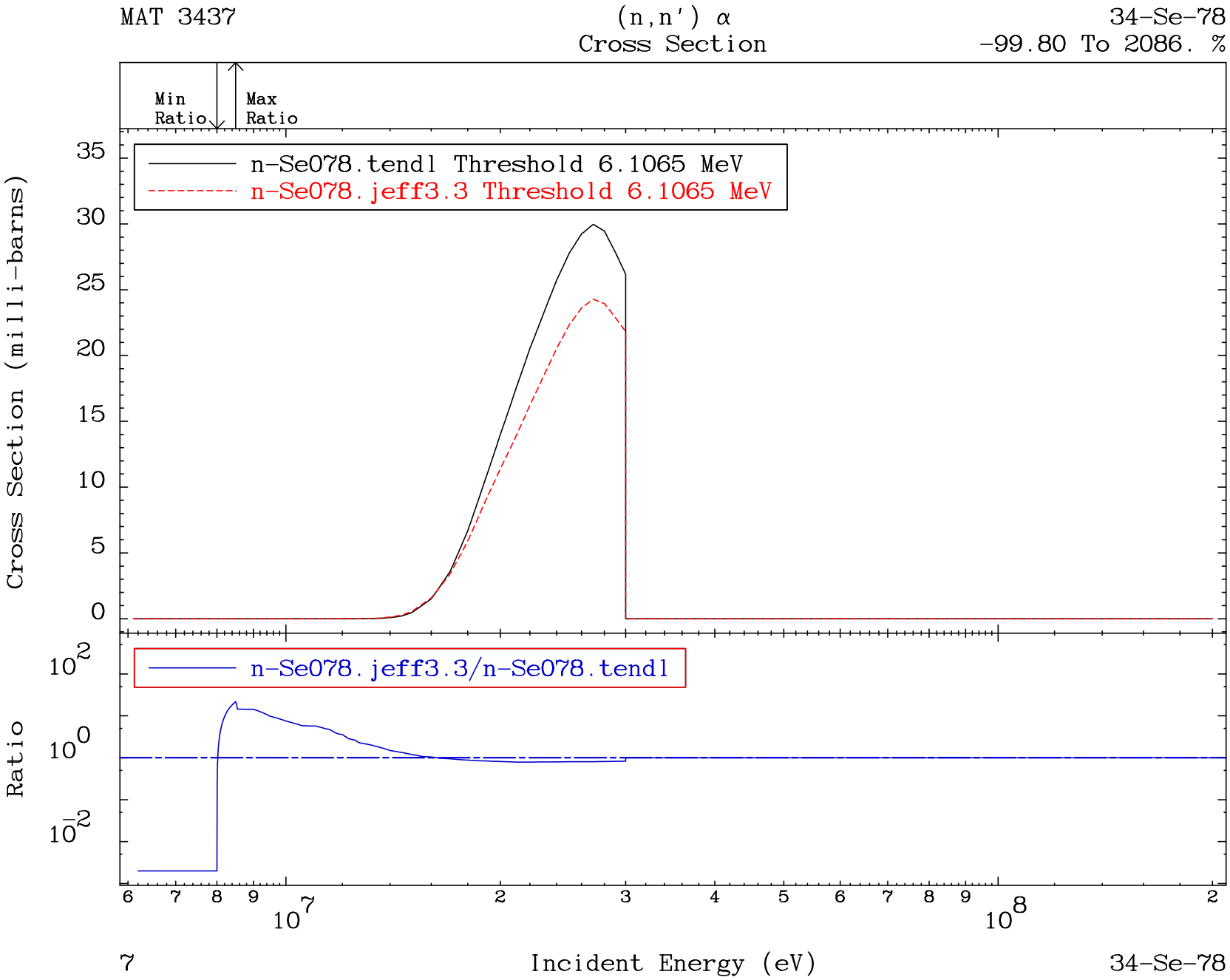

MAT 3437
Elastic
Cross Section
34-Se-78
-99.78 To 530.4 %
Min Ratio
Max Ratio
n-Se078.tendl
n-Se078.jeff3.3
Cross Section (barns)
n-Se078.jeff3.3/n-Se078.tendl
Ratio
Incident Energy (eV)
2
34-Se-78

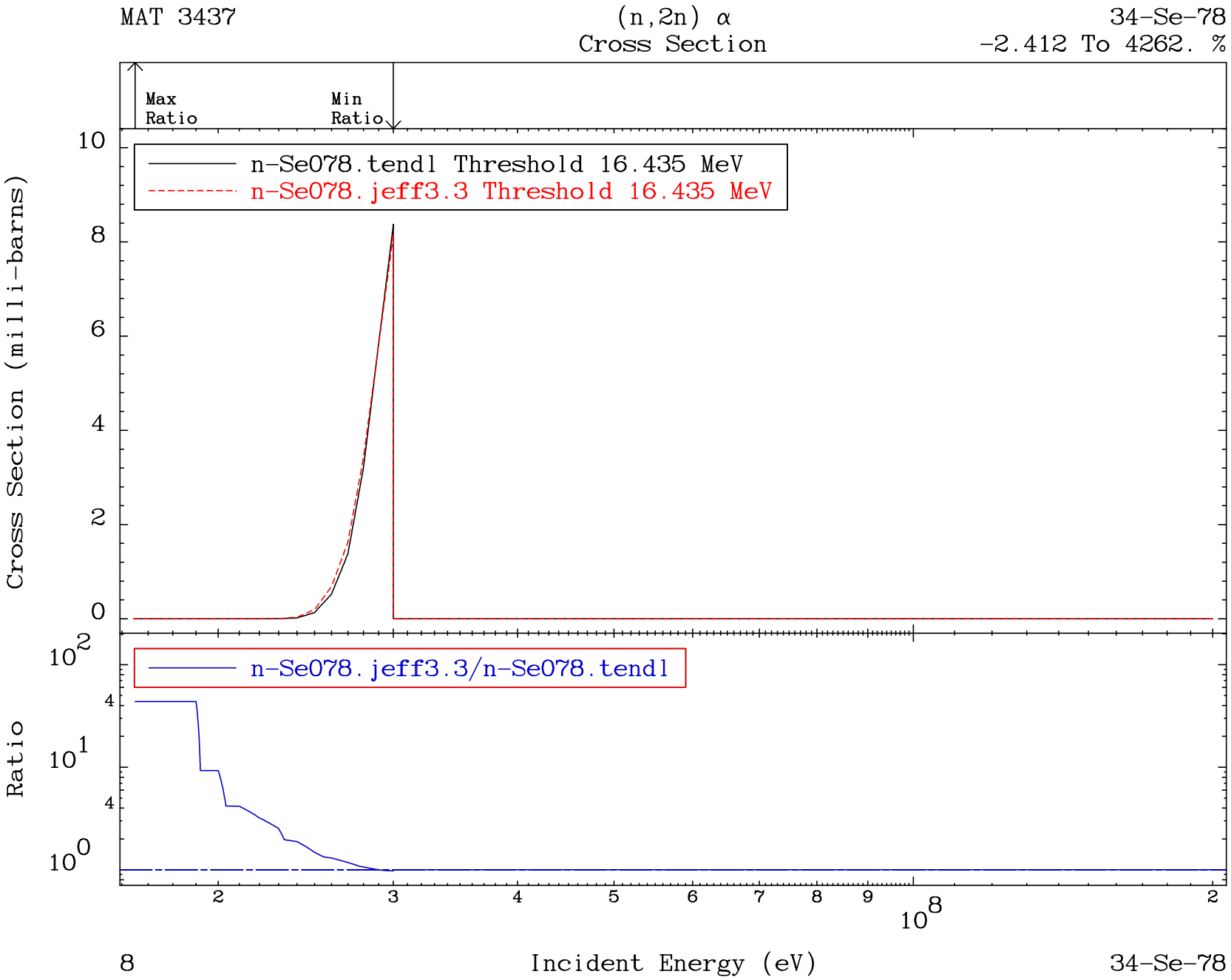

MAT 3437
Inelastic
Cross Section
34-Se-78
-15.61 To 0.895 %
Max
Ratio
Min
Ratio
n-Se078.tendl Threshold 621.67 keV
n-Se078.jeff3.3 Threshold 621.67 keV
Cross Section (barns)
2.5
2.0
1.5
1.0
0.5
0.0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
1.00
0.90
6 7 8
10^6
2
3
4
5
6
7
8
10^7
2
3
4
5
6
7
8
10^8
2
3
Incident Energy (eV)
34-Se-78

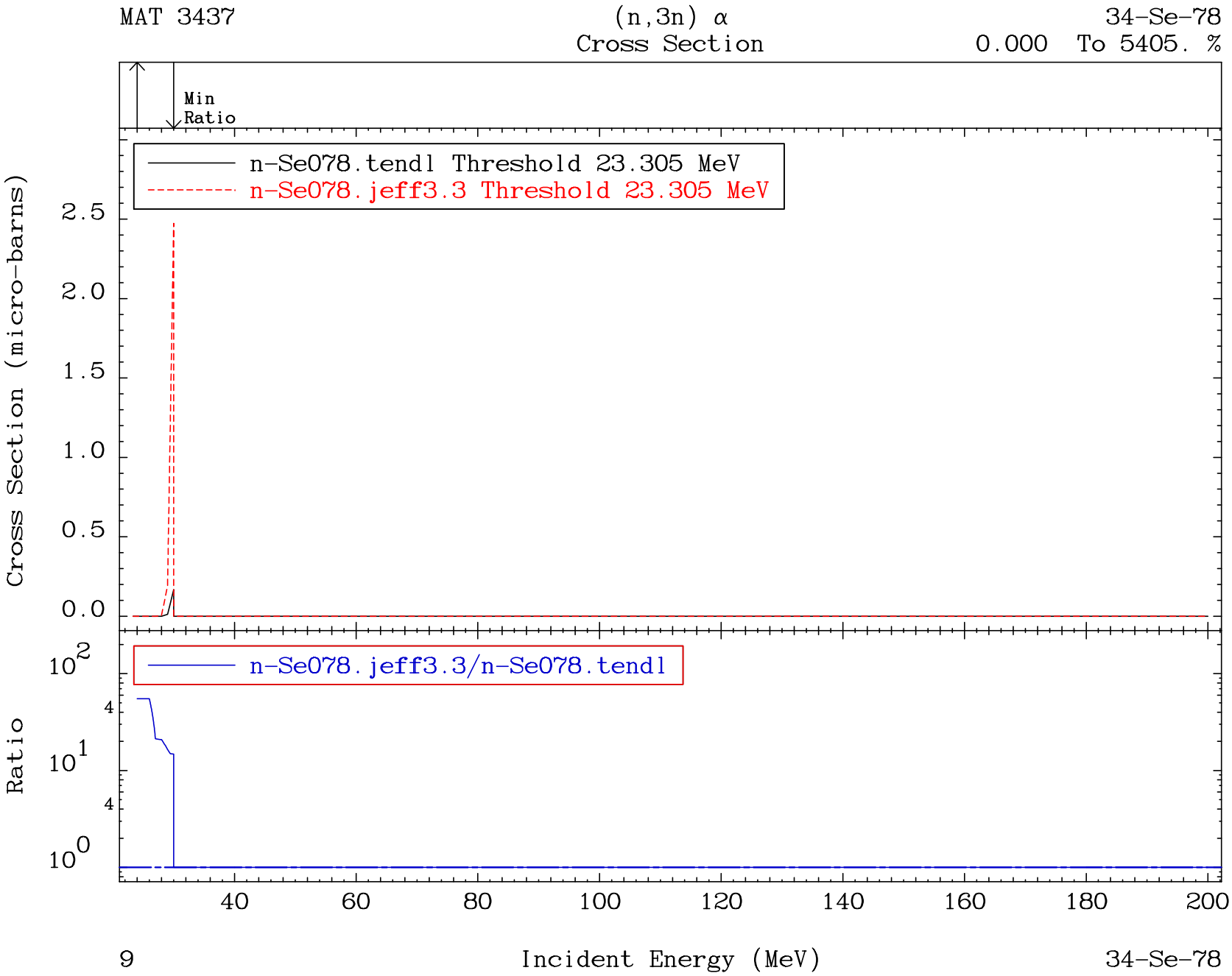

MAT 3437
(n,2n) d
Cross Section
34-Se-78
-8.216 To 185.5 %
Min
Ratio
n-Se078.tendl Threshold 25.525 MeV
n-Se078.jeff3.3 Threshold 25.525 MeV
Cross Section (micro-barns)
60
50
40
30
20
10
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
3.0
2.0
1.0
40
60
80
100
120
140
160
180
200
4
Incident Energy (MeV)
34-Se-78

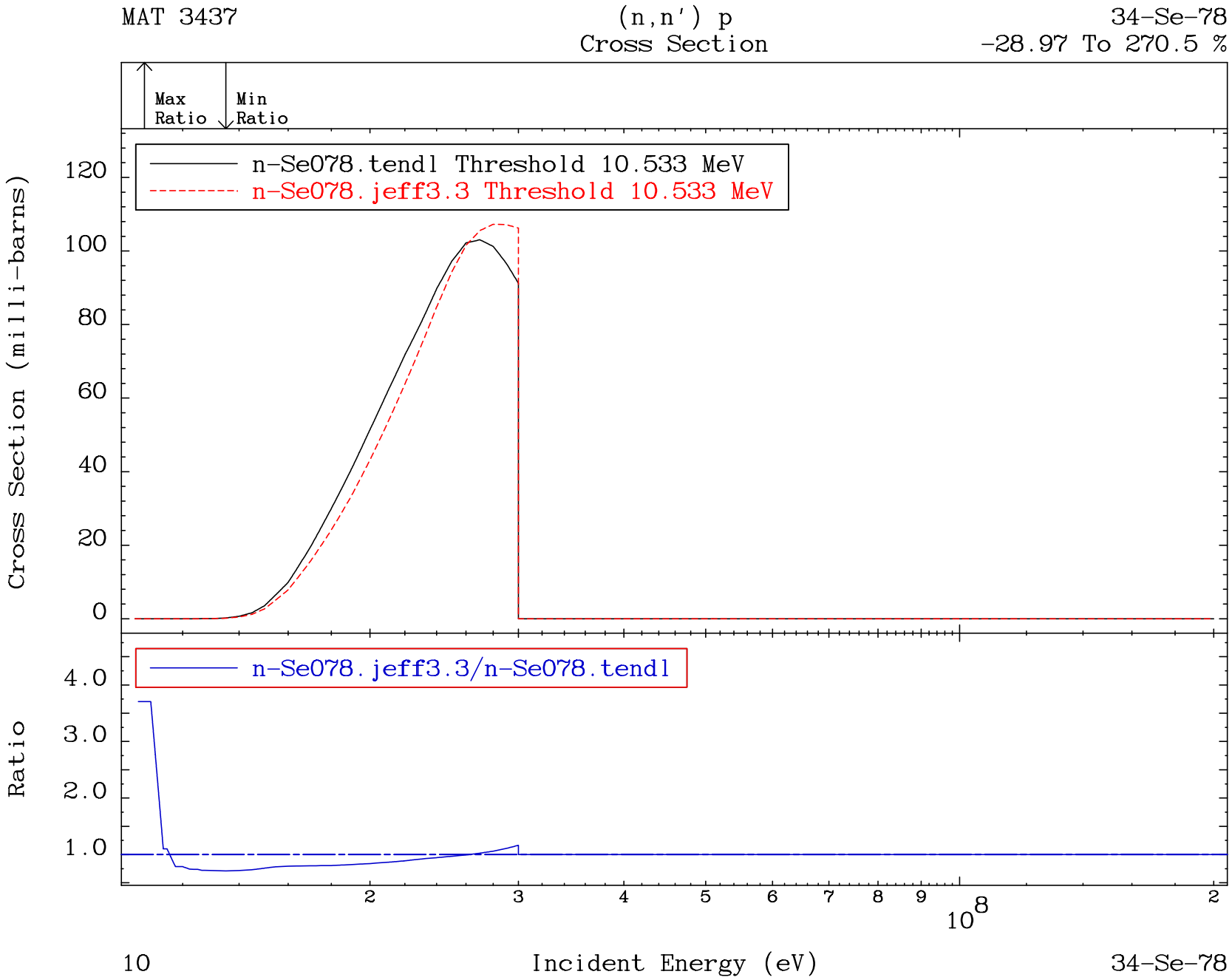

MAT 3437
(n,2n)
Cross Section
34-Se-78
-19.97 To 18.34 %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 10.634 MeV
n-Se078.jeff3.3 Threshold 10.634 MeV
Cross Section (barns)
1.2
1.0
0.8
0.6
0.4
0.2
0.0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
1.2
1.0
0.8
2
3
4
5
6
7
8
9
10^8
2
5
Incident Energy (eV)
34-Se-78

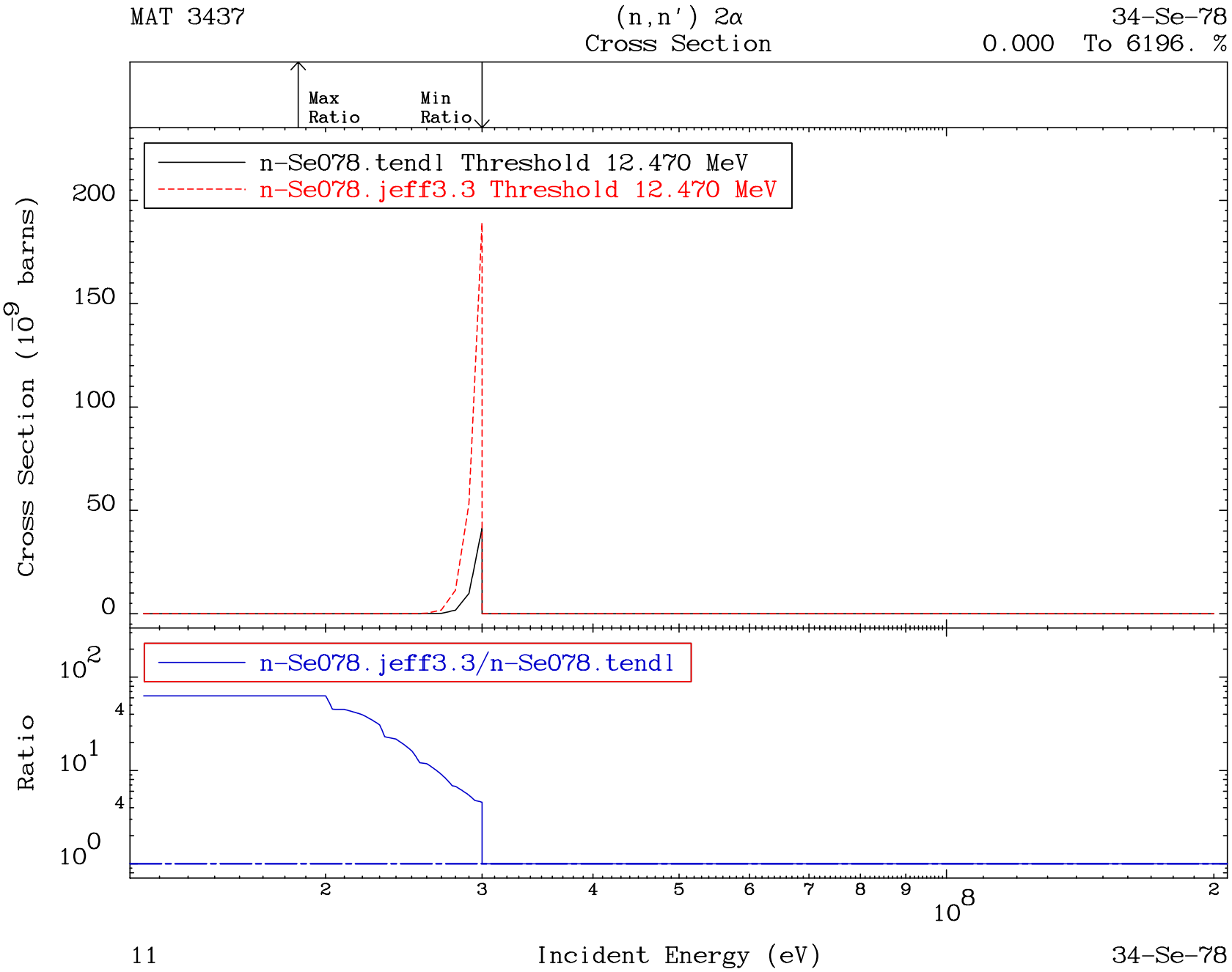

MAT 3437
(n,3n)
Cross Section
34-Se-78
0.000 To 41.78 %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 18.149 MeV
n-Se078.jeff3.3 Threshold 18.149 MeV
Cross Section (milli-barns)
700
600
500
400
300
200
100
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
1.4
1.2
1.0
2
3
4
5
6
7
8
9
10^8
2
6
Incident Energy (eV)
34-Se-78

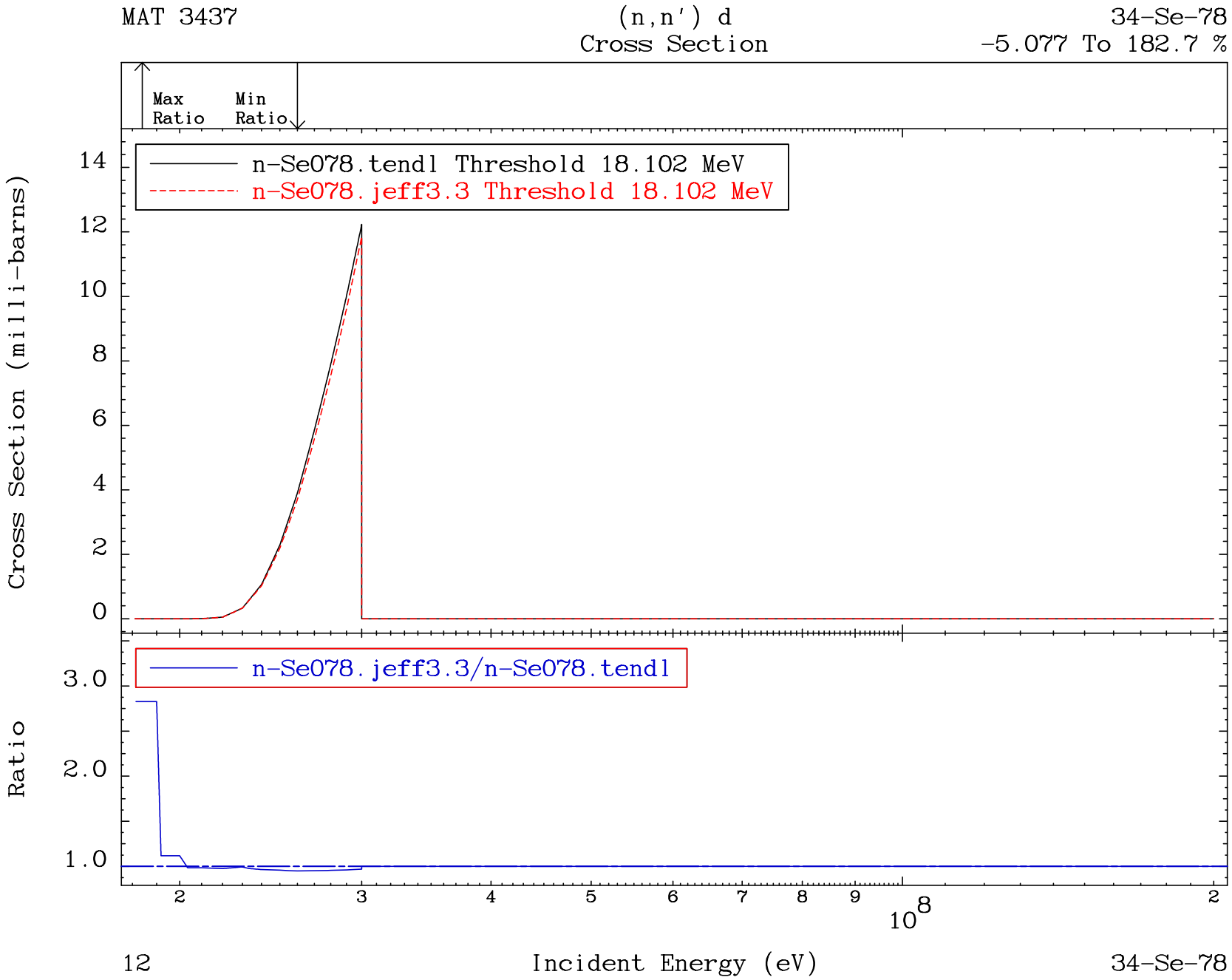

MAT 3437
(n,n') α
Cross Section
34-Se-78
-99.80 To 2086. %
Min Ratio
Max Ratio
n-Se078.tendl Threshold 6.1065 MeV
n-Se078.jeff3.3 Threshold 6.1065 MeV
Cross Section (milli-barns)
35
30
25
20
15
10
5
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
10^2
10^0
10^-2
6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
7
Incident Energy (eV)
34-Se-78

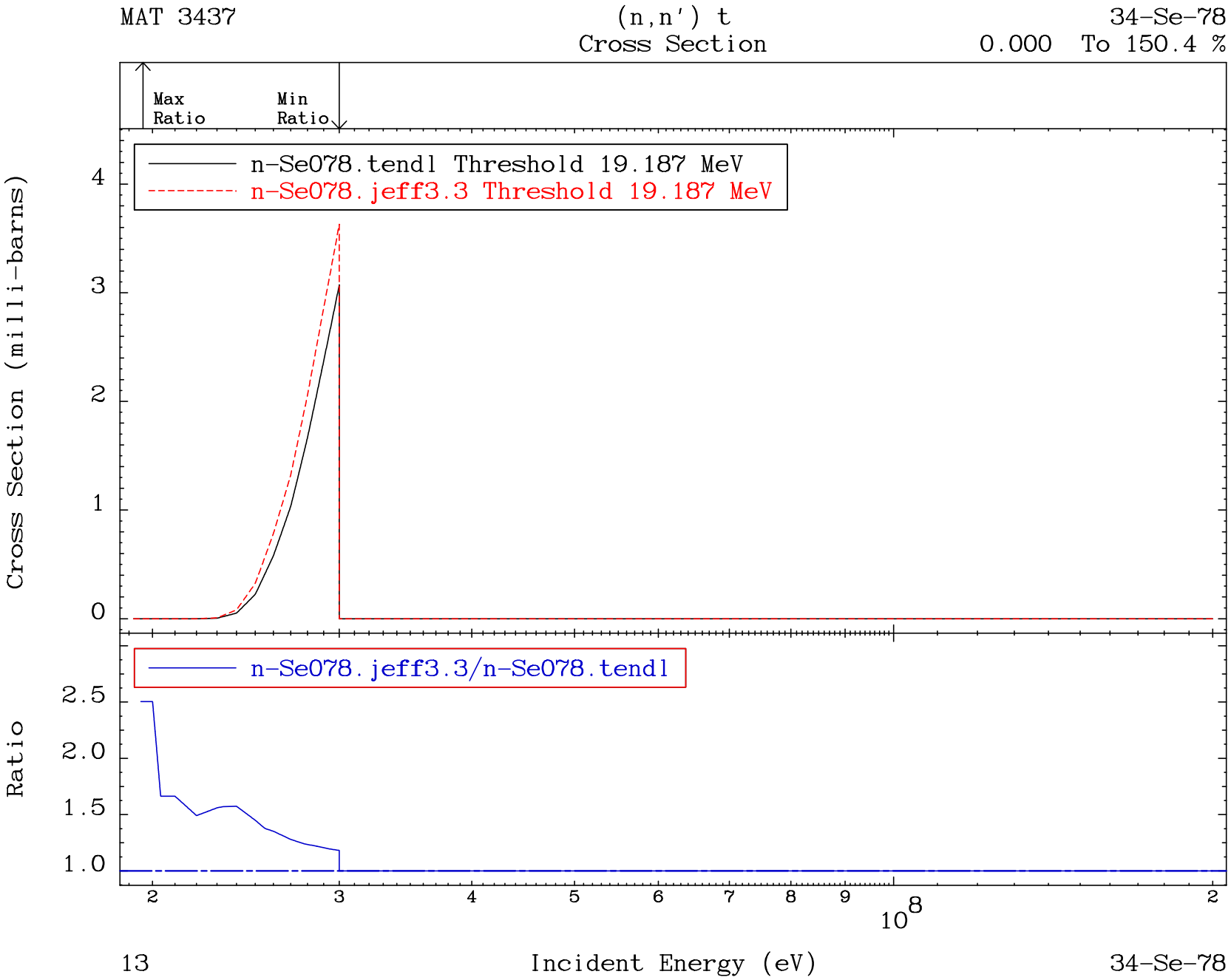

MAT 3437
(n,2n) α
Cross Section
34-Se-78
-2.412 To 4262. %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 16.435 MeV
n-Se078.jeff3.3 Threshold 16.435 MeV
Cross Section (milli-barns)
n-Se078.jeff3.3/n-Se078.tendl
Ratio
Incident Energy (eV)
8
34-Se-78

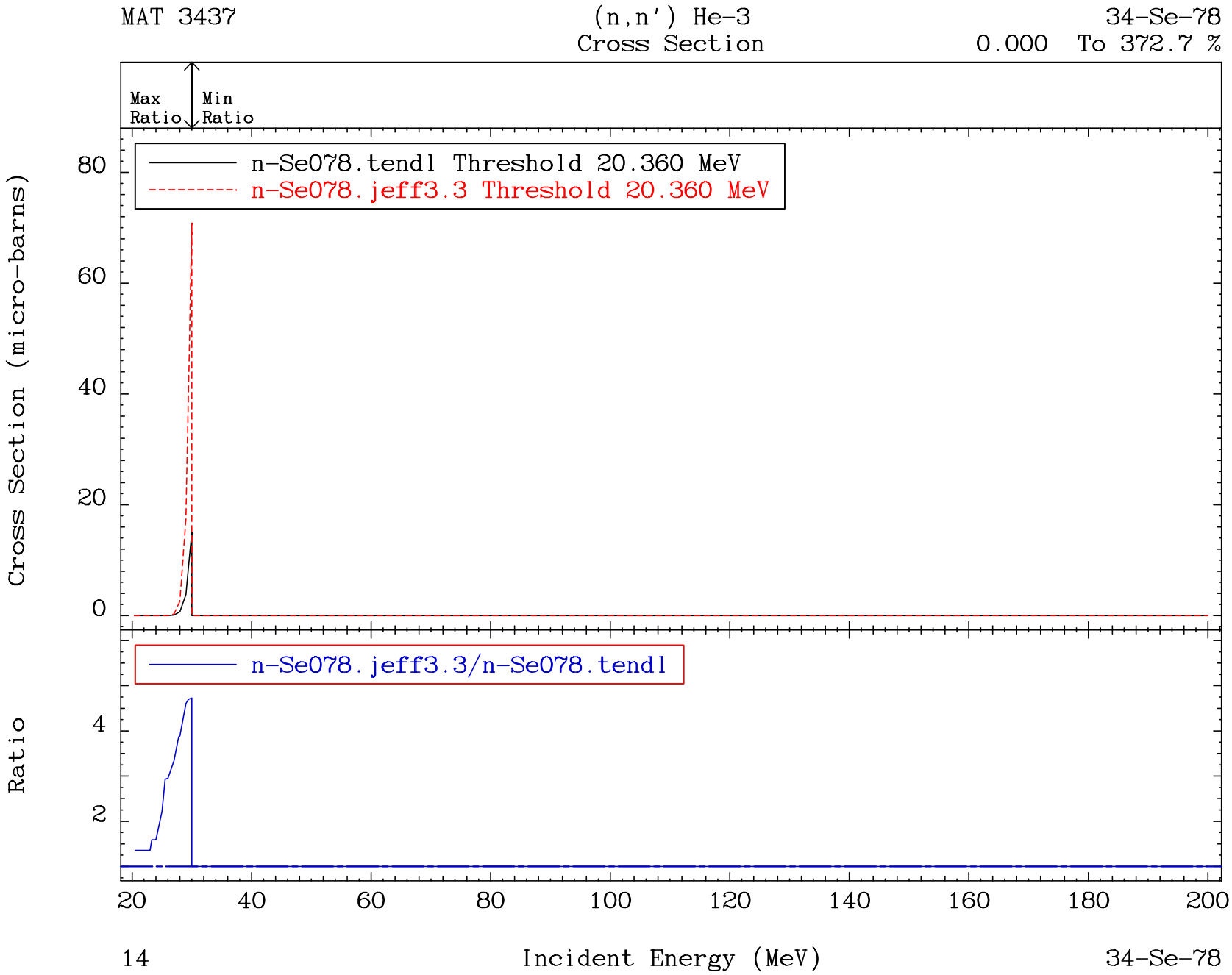

MAT 3437
(n,3n) α
Cross Section
34-Se-78
0.000 To 5405. %
Min
Ratio
n-Se078.tendl Threshold 23.305 MeV
n-Se078.jeff3.3 Threshold 23.305 MeV
Cross Section (micro-barns)
2.5
2.0
1.5
1.0
0.5
0.0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
10^2
4
10^1
4
10^0
40
60
80
100
120
140
160
180
200
9
Incident Energy (MeV)
34-Se-78

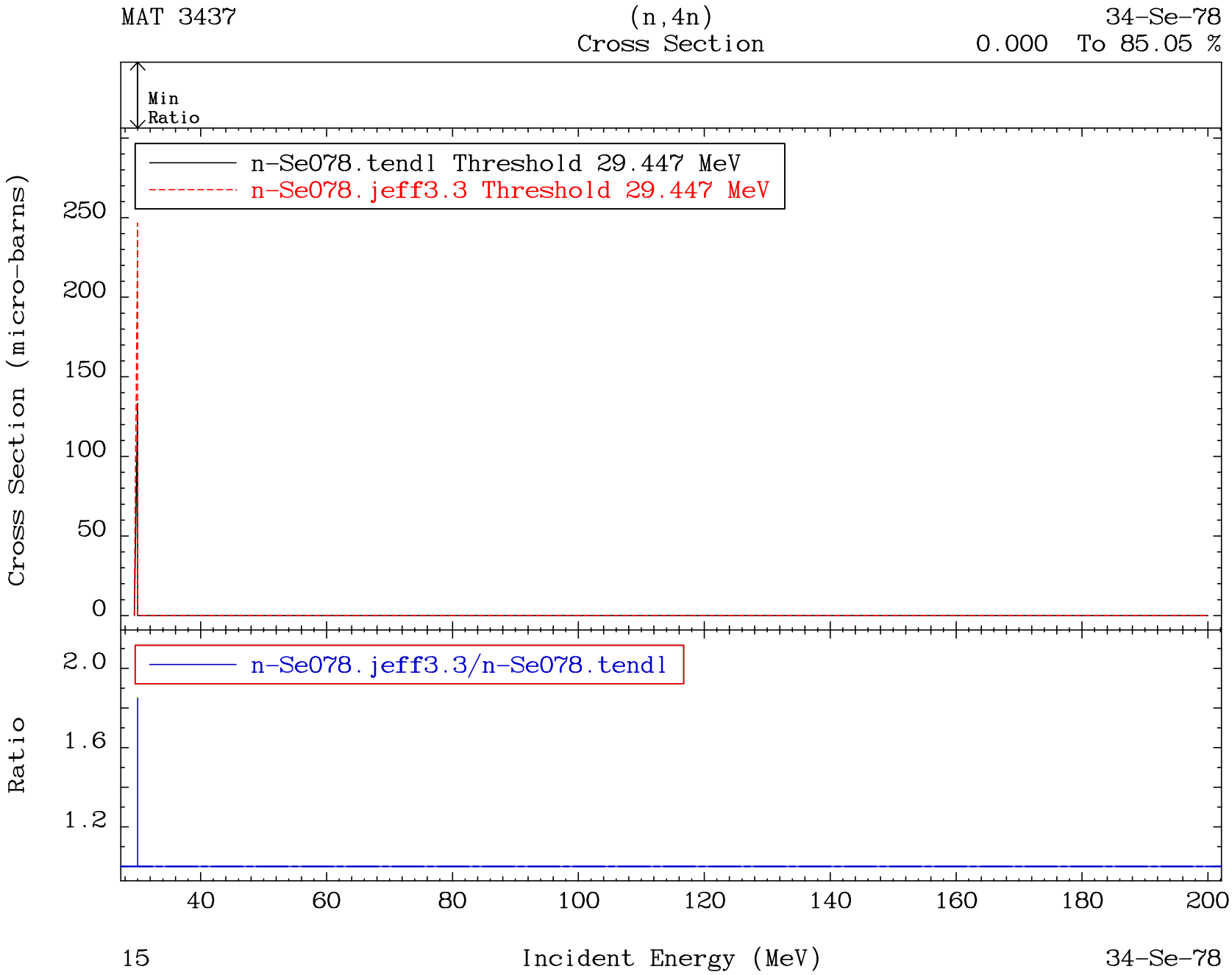

MAT 3437
(n,n') p
Cross Section
34-Se-78
-28.97 To 270.5 %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 10.533 MeV
n-Se078.jeff3.3 Threshold 10.533 MeV
Cross Section (milli-barns)
120
100
80
60
40
20
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
4.0
3.0
2.0
1.0
2
3
4
5
6
7
8
9
10^8
2
10
Incident Energy (eV)
34-Se-78

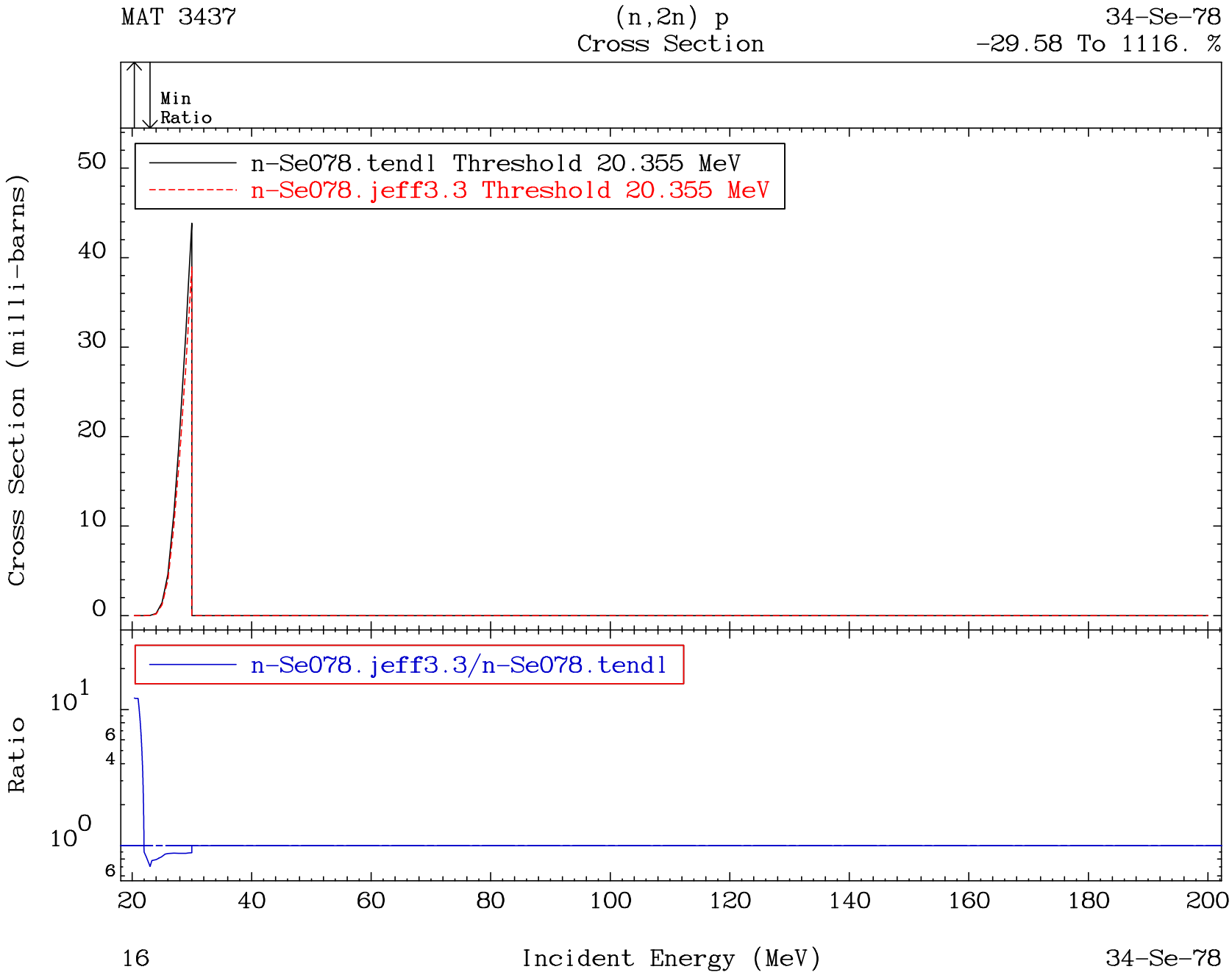

MAT 3437
(n,n') 2α
Cross Section
34-Se-78
0.000 To 6196. %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 12.470 MeV
n-Se078.jeff3.3 Threshold 12.470 MeV
Cross Section (10^-9 barns)
200
150
100
50
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
10^2
4
10^1
4
10^0
2
3
4
5
6
7
8
9
10^8
2
11
Incident Energy (eV)
34-Se-78

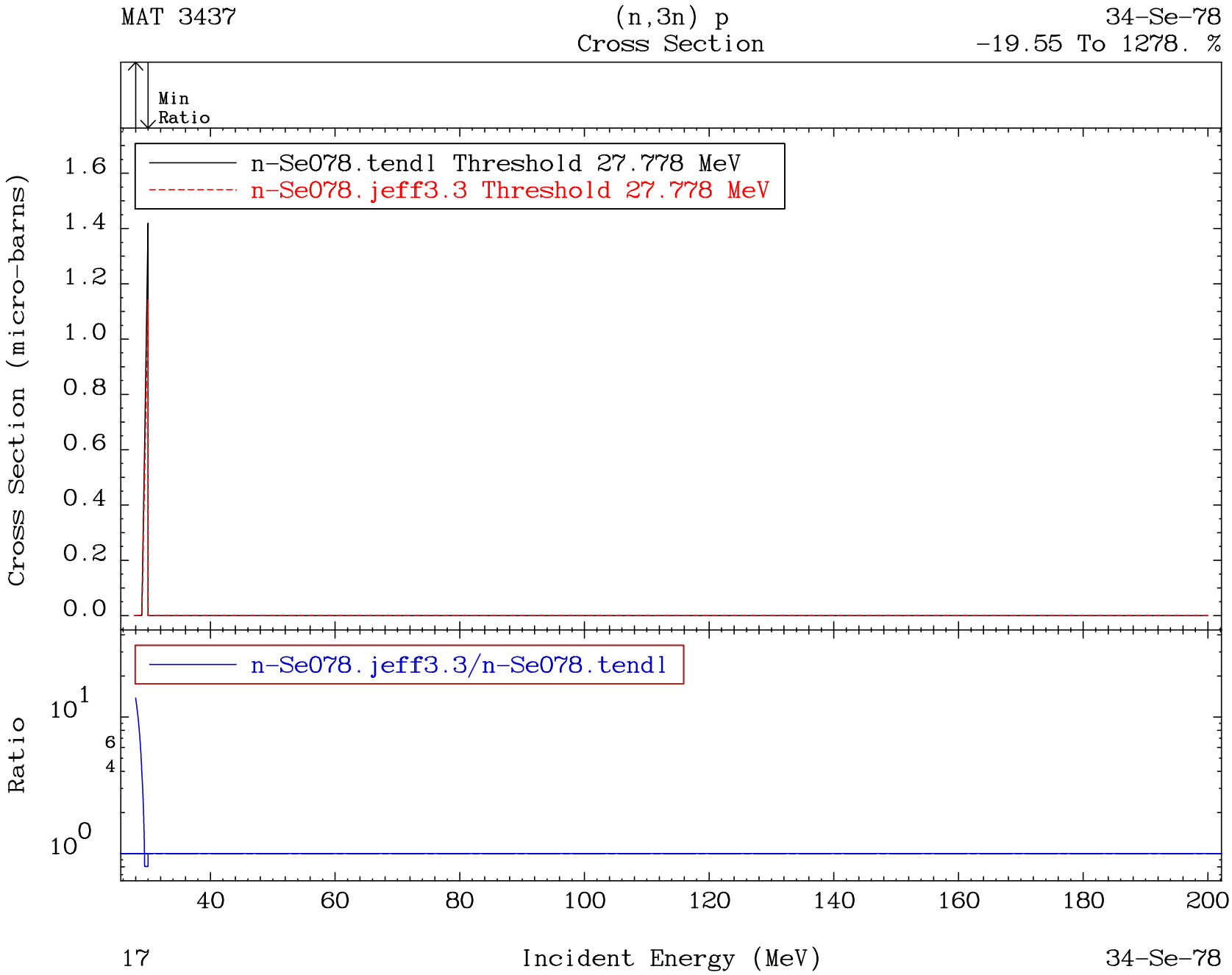

MAT 3437
(n,n') d
Cross Section
34-Se-78
-5.077 To 182.7 %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 18.102 MeV
n-Se078.jeff3.3 Threshold 18.102 MeV
Cross Section (milli-barns)
14
12
10
8
6
4
2
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
3.0
2.0
1.0
2
3
4
5
6
7
8
9
10^8
2
12
Incident Energy (eV)
34-Se-78

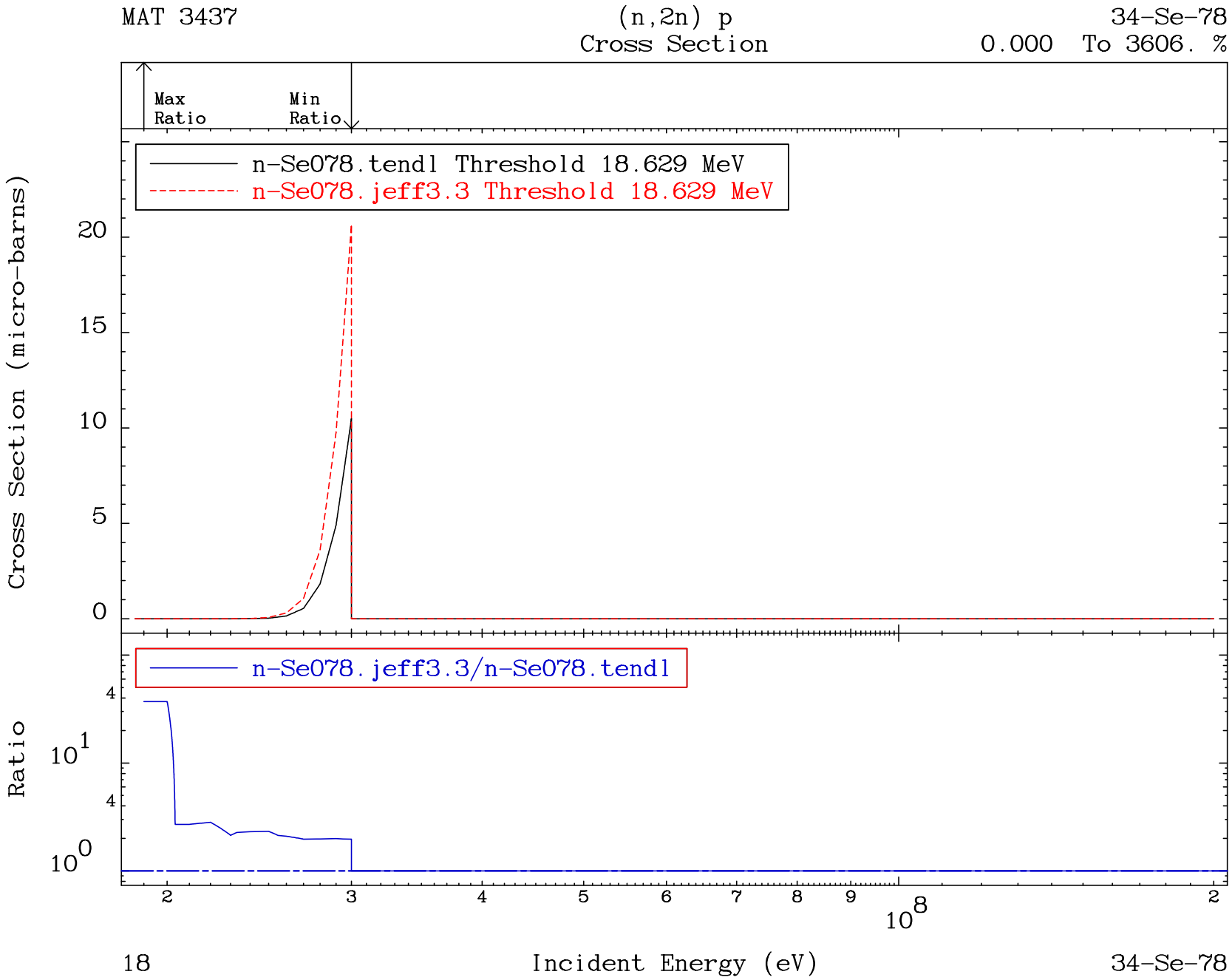

MAT 3437
(n,n') t
Cross Section
34-Se-78
0.000 To 150.4 %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 19.187 MeV
n-Se078.jeff3.3 Threshold 19.187 MeV
Cross Section (milli-barns)
0
1
2
3
4
n-Se078.jeff3.3/n-Se078.tendl
Ratio
1.0
1.5
2.0
2.5
2
3
4
5
6
7
8
9
10^8
2
13
Incident Energy (eV)
34-Se-78

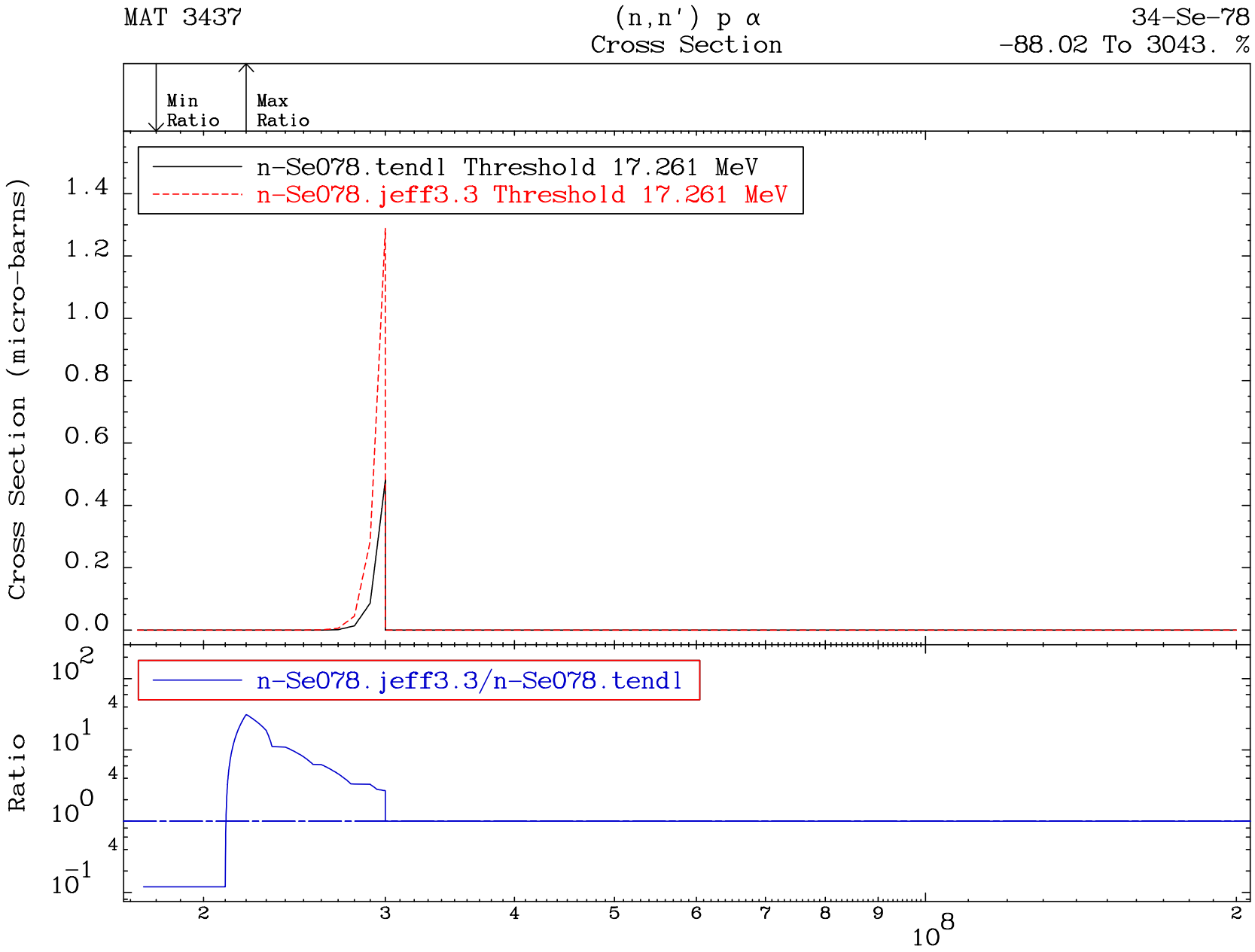

MAT 3437
(n,n') He-3
Cross Section
34-Se-78
0.000 To 372.7 %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 20.360 MeV
n-Se078.jeff3.3 Threshold 20.360 MeV
n-Se078.jeff3.3/n-Se078.tendl
Cross Section (micro-barns)
Ratio
Incident Energy (MeV)
14
34-Se-78

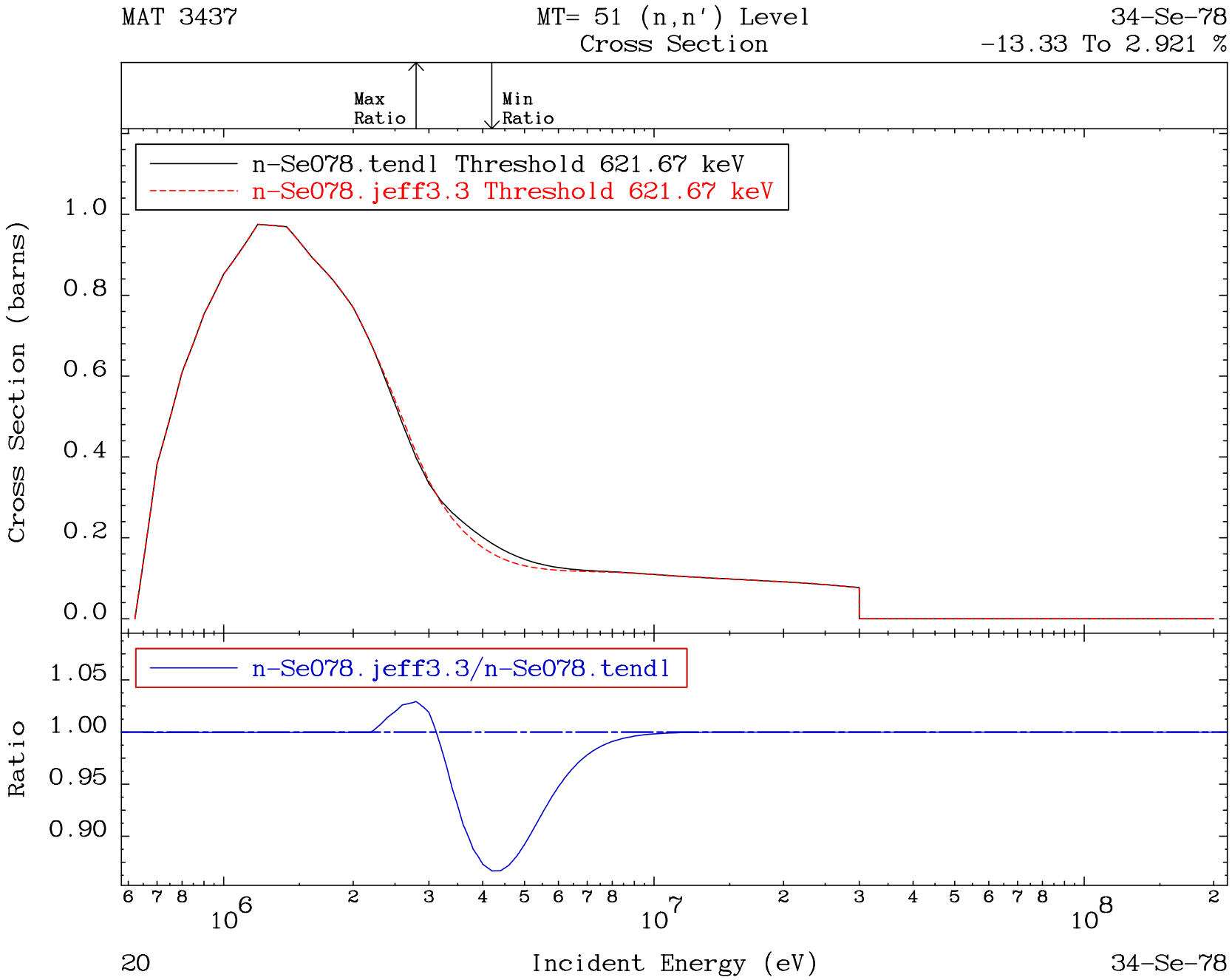

MAT 3437
(n,4n)
Cross Section
34-Se-78
0.000 To 85.05 %
Min
Ratio
n-Se078.tendl Threshold 29.447 MeV
n-Se078.jeff3.3 Threshold 29.447 MeV
Cross Section (micro-barns)
250
200
150
100
50
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
2.0
1.6
1.2
40
60
80
100
120
140
160
180
200
15
Incident Energy (MeV)
34-Se-78

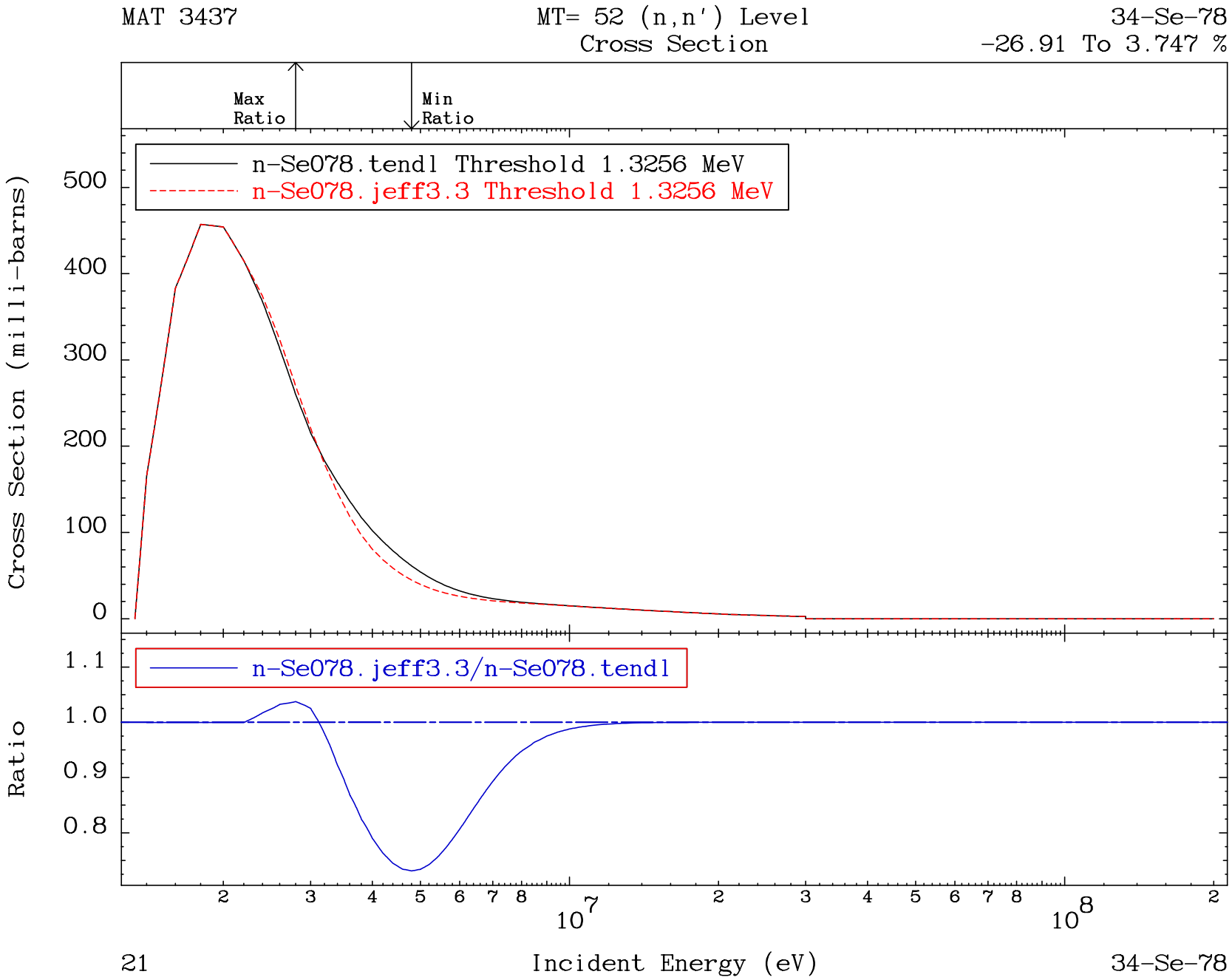

MAT 3437
(n,2n) p
Cross Section
34-Se-78
-29.58 To 1116. %
Min
Ratio
n-Se078.tendl Threshold 20.355 MeV
n-Se078.jeff3.3 Threshold 20.355 MeV
Cross Section (milli-barns)
50
40
30
20
10
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
10^1
6
4
10^0
6
20
40
60
80
100
120
140
160
180
200
16
Incident Energy (MeV)
34-Se-78

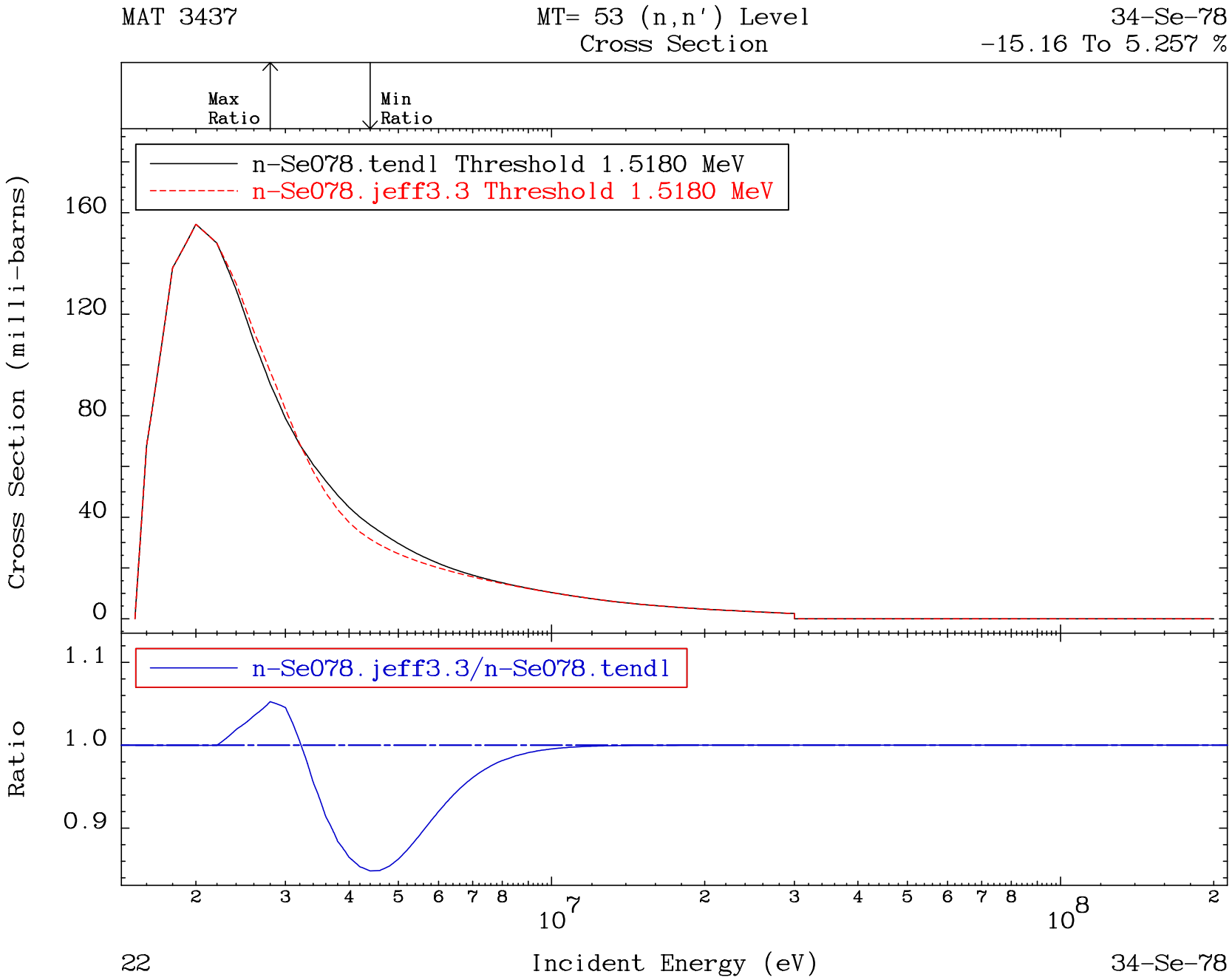

MAT 3437
(n,3n) p
Cross Section
34-Se-78
-19.55 To 1278. %
Min
Ratio
n-Se078.tendl Threshold 27.778 MeV
n-Se078.jeff3.3 Threshold 27.778 MeV
Cross Section (micro-barns)
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
10^1
6
4
10^0
40
60
80
100
120
140
160
180
200
17
Incident Energy (MeV)
34-Se-78

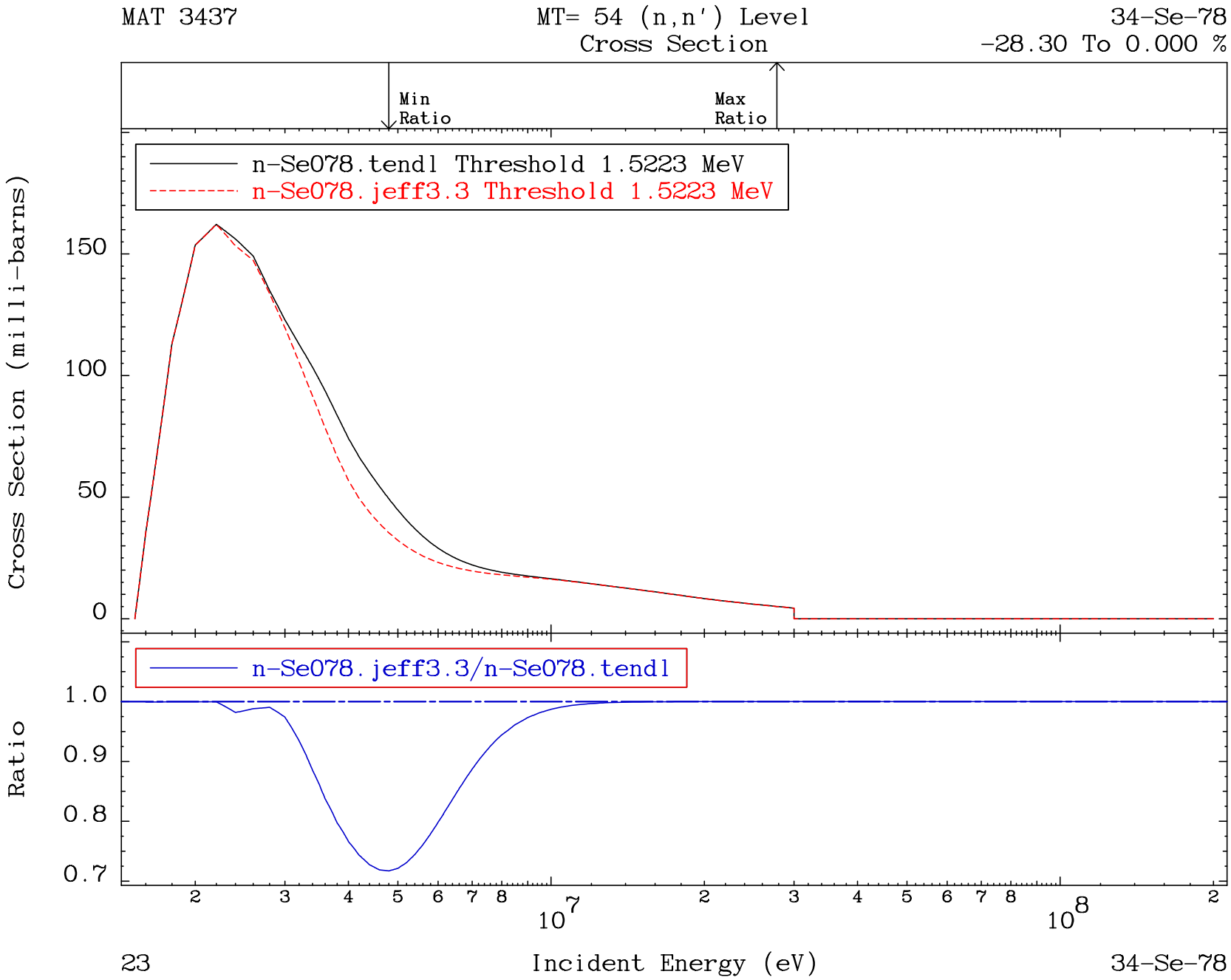

MAT 3437
(n,2n) p
Cross Section
34-Se-78
0.000 To 3606. %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 18.629 MeV
n-Se078.jeff3.3 Threshold 18.629 MeV
Cross Section (micro-barns)
20
15
10
5
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
4
10^1
4
10^0
2
3
4
5
6
7
8
9
10^8
2
18
Incident Energy (eV)
34-Se-78

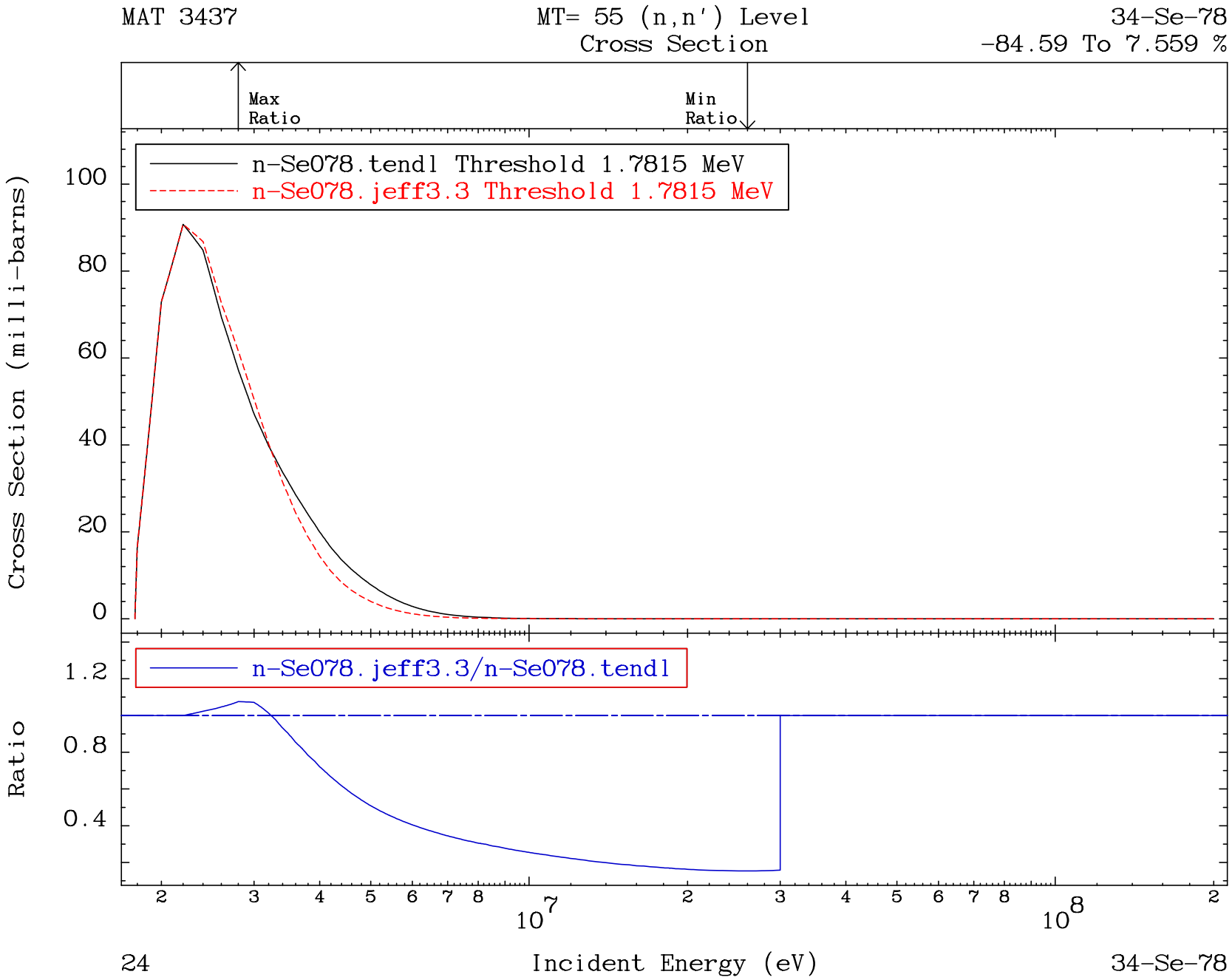

MAT 3437
(n,n') p α
Cross Section
34-Se-78
-88.02 To 3043. %
Min Ratio
Max Ratio
n-Se078.tendl Threshold 17.261 MeV
n-Se078.jeff3.3 Threshold 17.261 MeV
Cross Section (micro-barns)
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
10^2
10^1
10^0
10^-1
2
3
4
5
6
7
8
9
10^8
2
19
Incident Energy (eV)
34-Se-78

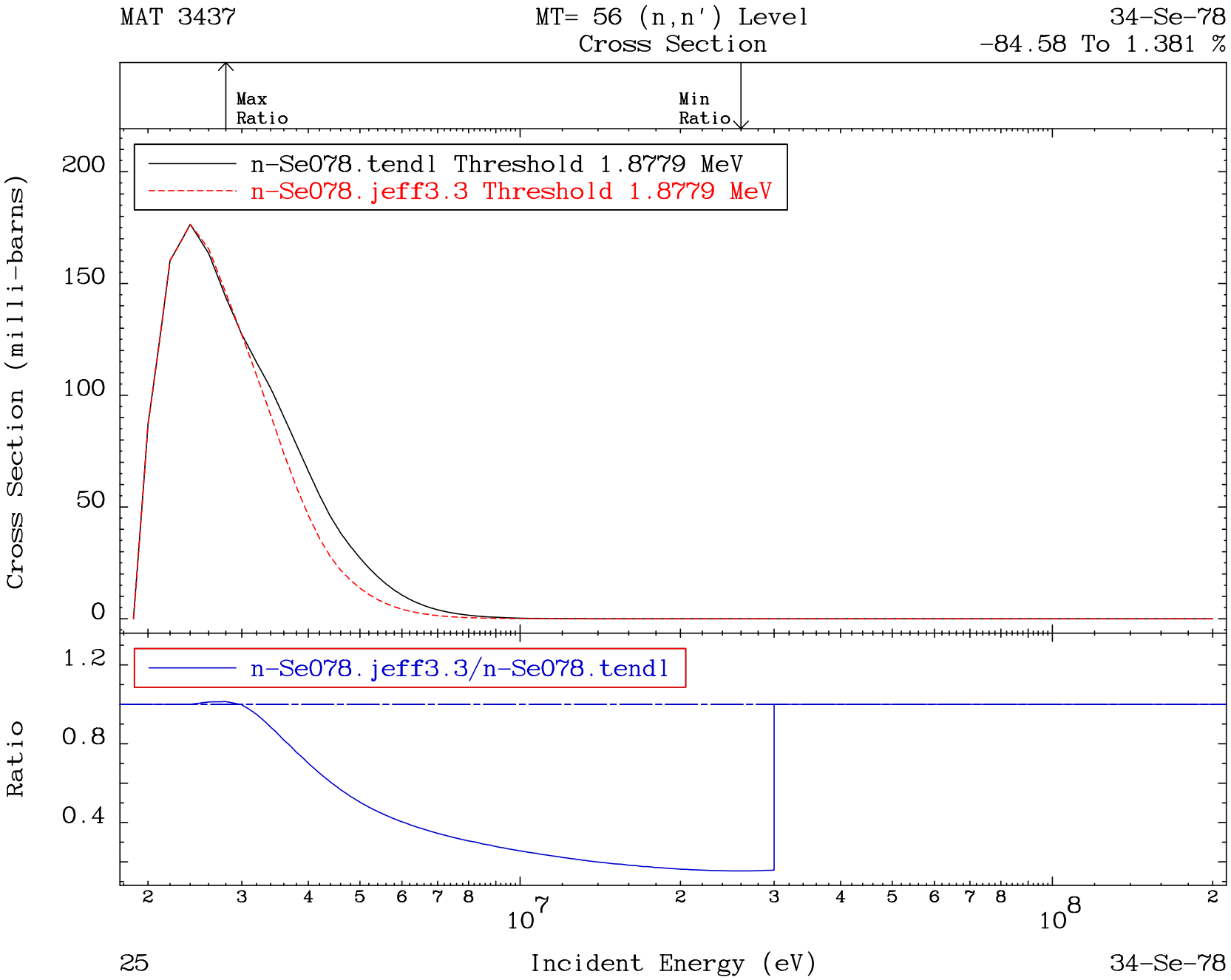

MAT 3437
MT= 51 (n,n') Level
Cross Section
34-Se-78
-13.33 To 2.921 %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 621.67 keV
n-Se078.jeff3.3 Threshold 621.67 keV
Cross Section (barns)
1.0
0.8
0.6
0.4
0.2
0.0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
1.05
1.00
0.95
0.90
6 7 8
10^6
2 3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
20
Incident Energy (eV)
34-Se-78

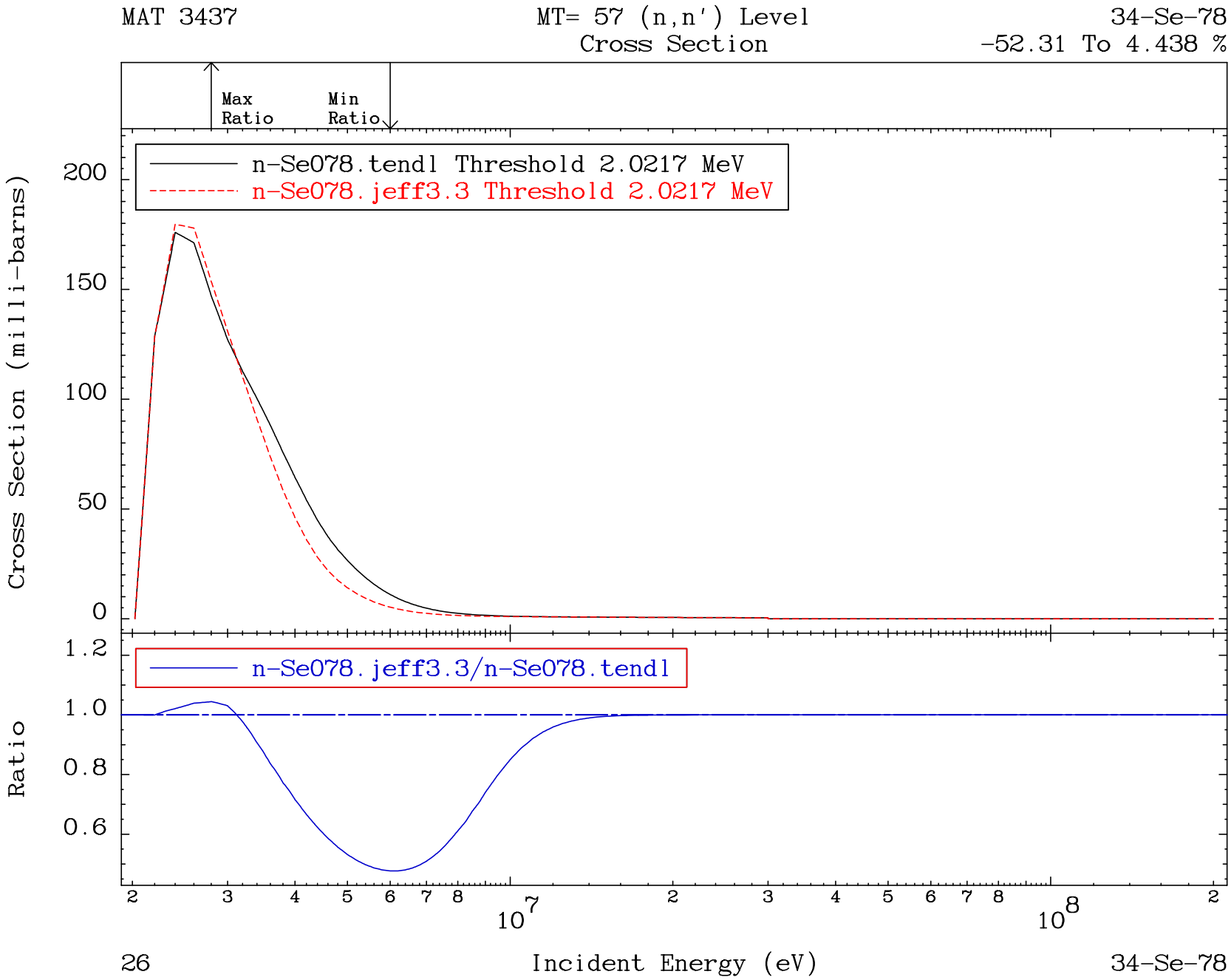

MAT 3437
MT= 52 (n,n') Level
Cross Section
34-Se-78
-26.91 To 3.747 %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 1.3256 MeV
n-Se078.jeff3.3 Threshold 1.3256 MeV
Cross Section (milli-barns)
500
400
300
200
100
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
1.1
1.0
0.9
0.8
2 3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
21
Incident Energy (eV)
34-Se-78

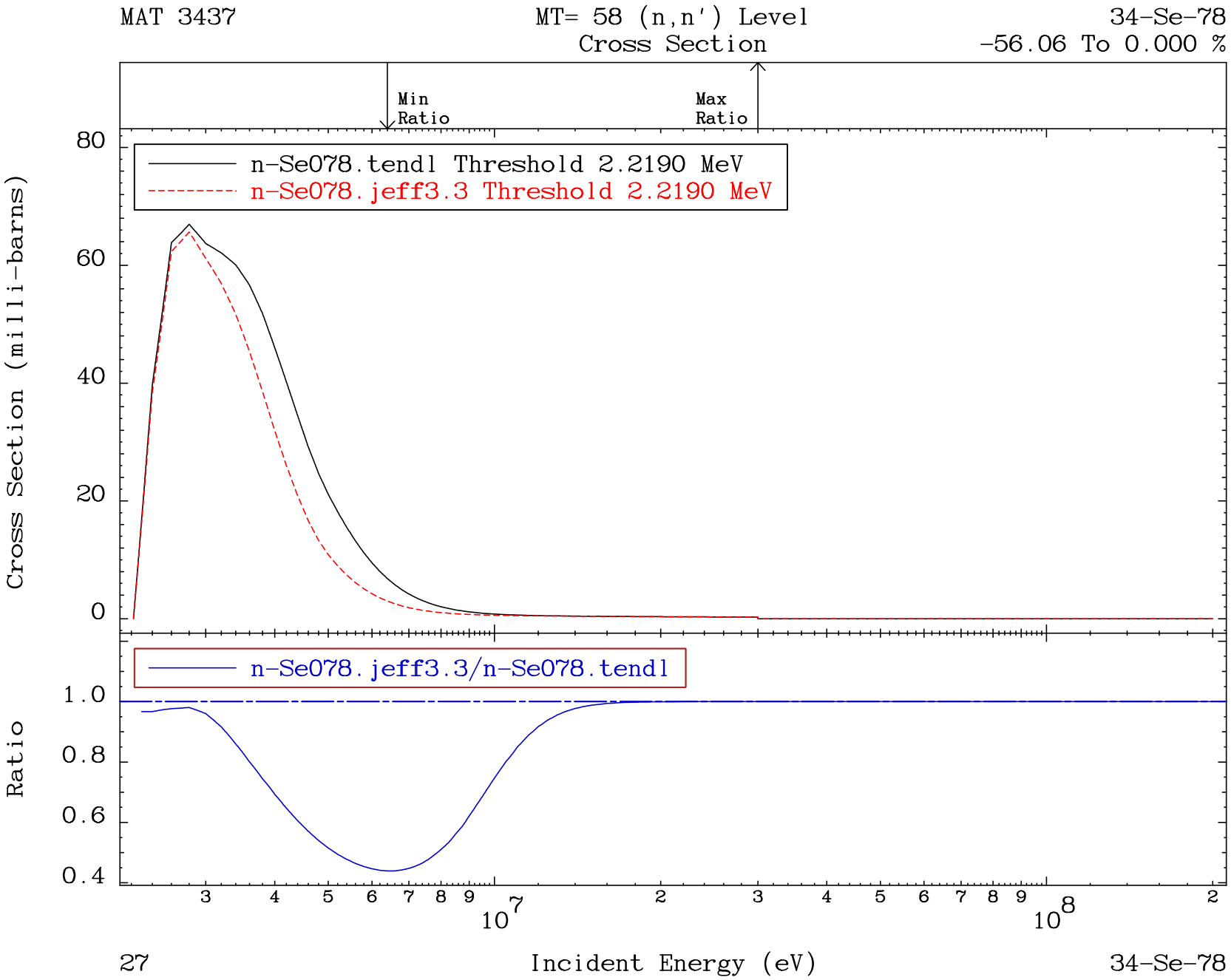

MAT 3437
MT= 53 (n,n') Level
Cross Section
34-Se-78
-15.16 To 5.257 %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 1.5180 MeV
n-Se078.jeff3.3 Threshold 1.5180 MeV
Cross Section (milli-barns)
160
120
80
40
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
1.1
1.0
0.9
2 3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
22
Incident Energy (eV)
34-Se-78

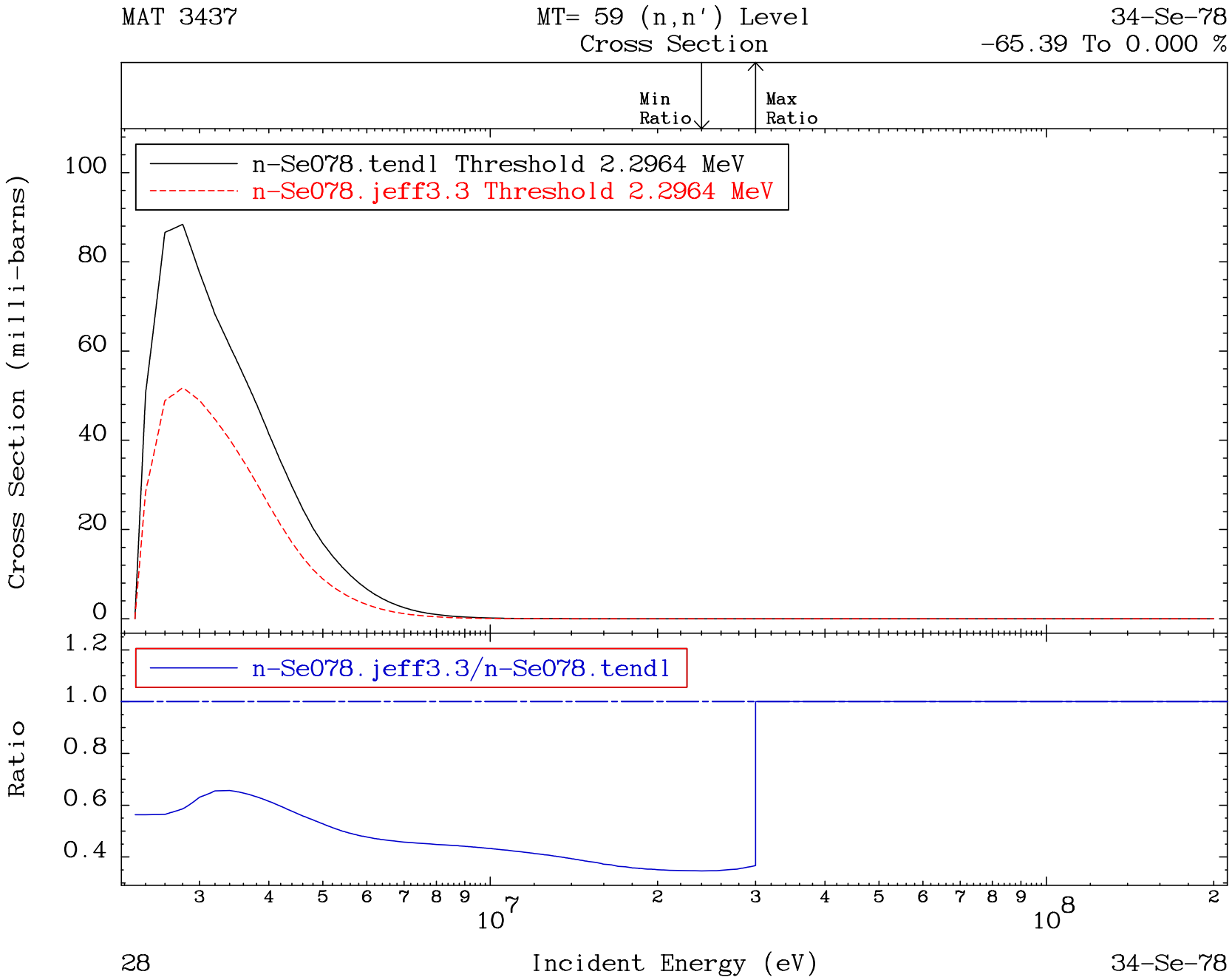

MAT 3437
MT= 54 (n,n') Level
Cross Section
34-Se-78
-28.30 To 0.000 %
Min
Ratio
Max
Ratio
n-Se078.tendl Threshold 1.5223 MeV
n-Se078.jeff3.3 Threshold 1.5223 MeV
Cross Section (milli-barns)
150
100
50
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
1.0
0.9
0.8
0.7
2
3
4
5
6
7
8
10^7
2
3
4
5
6
7
8
10^8
2
23
Incident Energy (eV)
34-Se-78

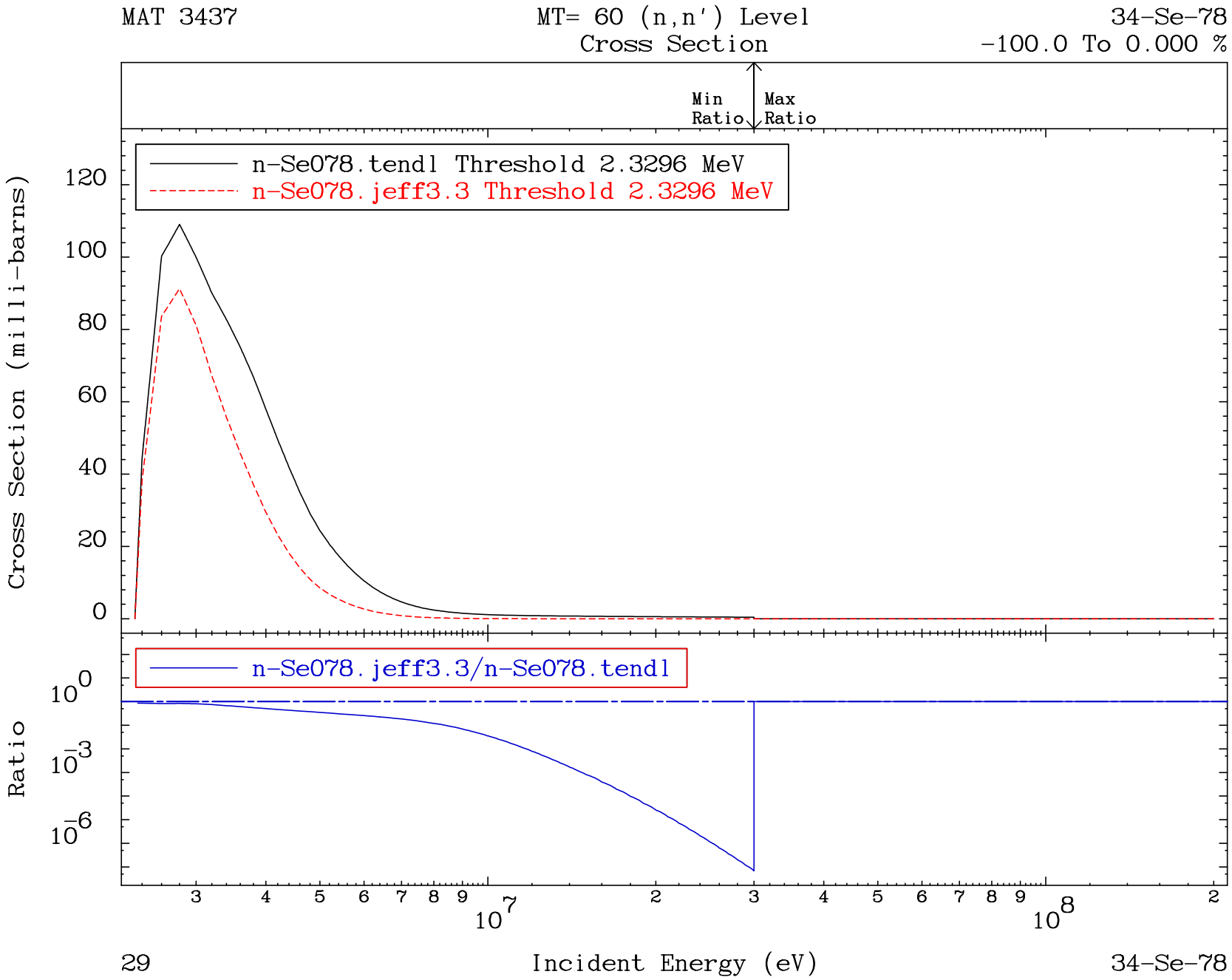

MAT 3437
MT= 55 (n,n') Level
Cross Section
34-Se-78
-84.59 To 7.559 %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 1.7815 MeV
n-Se078.jeff3.3 Threshold 1.7815 MeV
Cross Section (milli-barns)
100
80
60
40
20
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
1.2
0.8
0.4
2
3
4
5
6
7
8
10^7
2
3
4
5
6
7
8
10^8
2
24
Incident Energy (eV)
34-Se-78

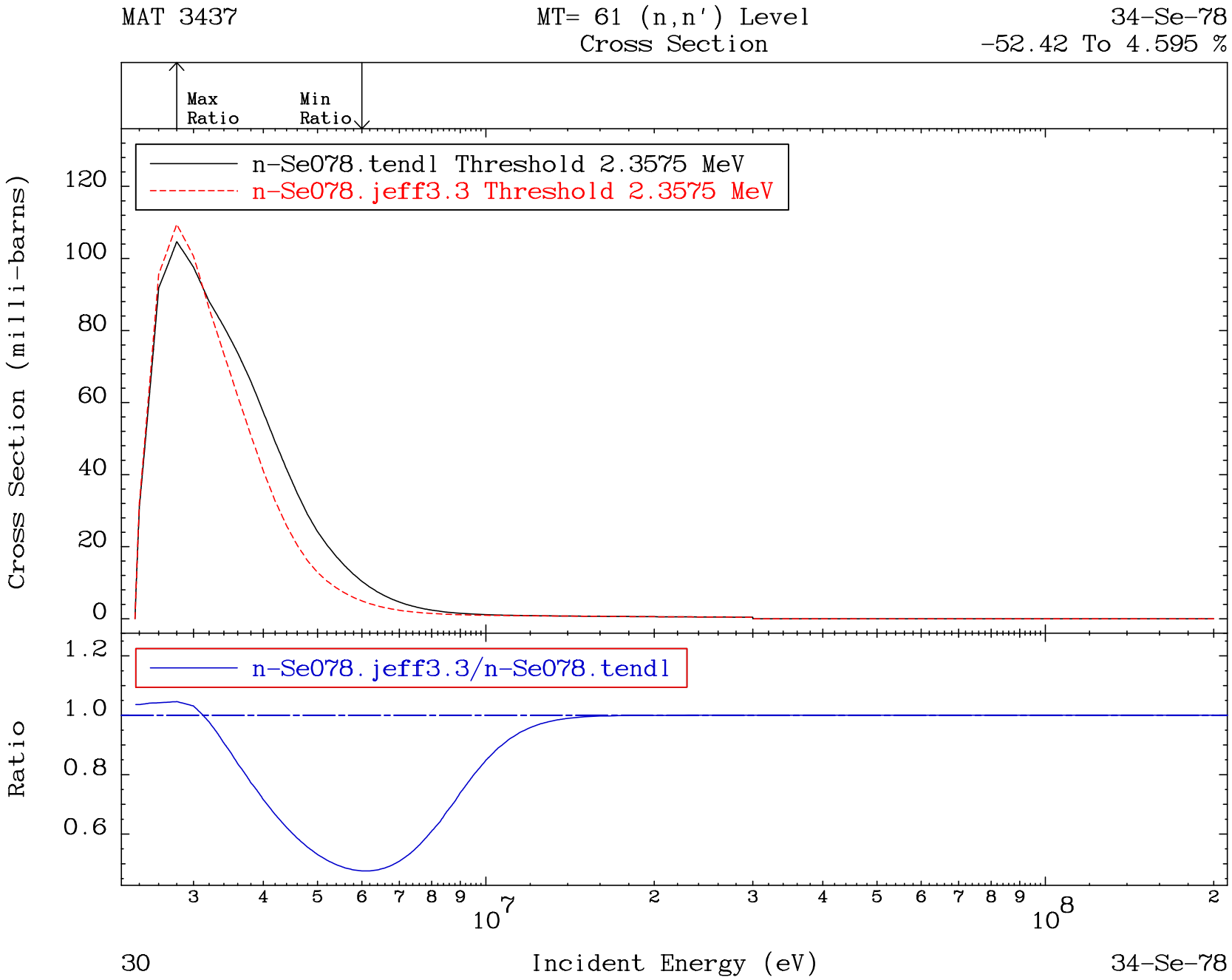

MAT 3437
MT= 56 (n,n') Level
Cross Section
34-Se-78
-84.58 To 1.381 %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 1.8779 MeV
n-Se078.jeff3.3 Threshold 1.8779 MeV
Cross Section (milli-barns)
200
150
100
50
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
1.2
0.8
0.4
2 3 4 5 6 7 8 10^7 2 3 4 5 6 7 8 10^8 2
25
Incident Energy (eV)
34-Se-78

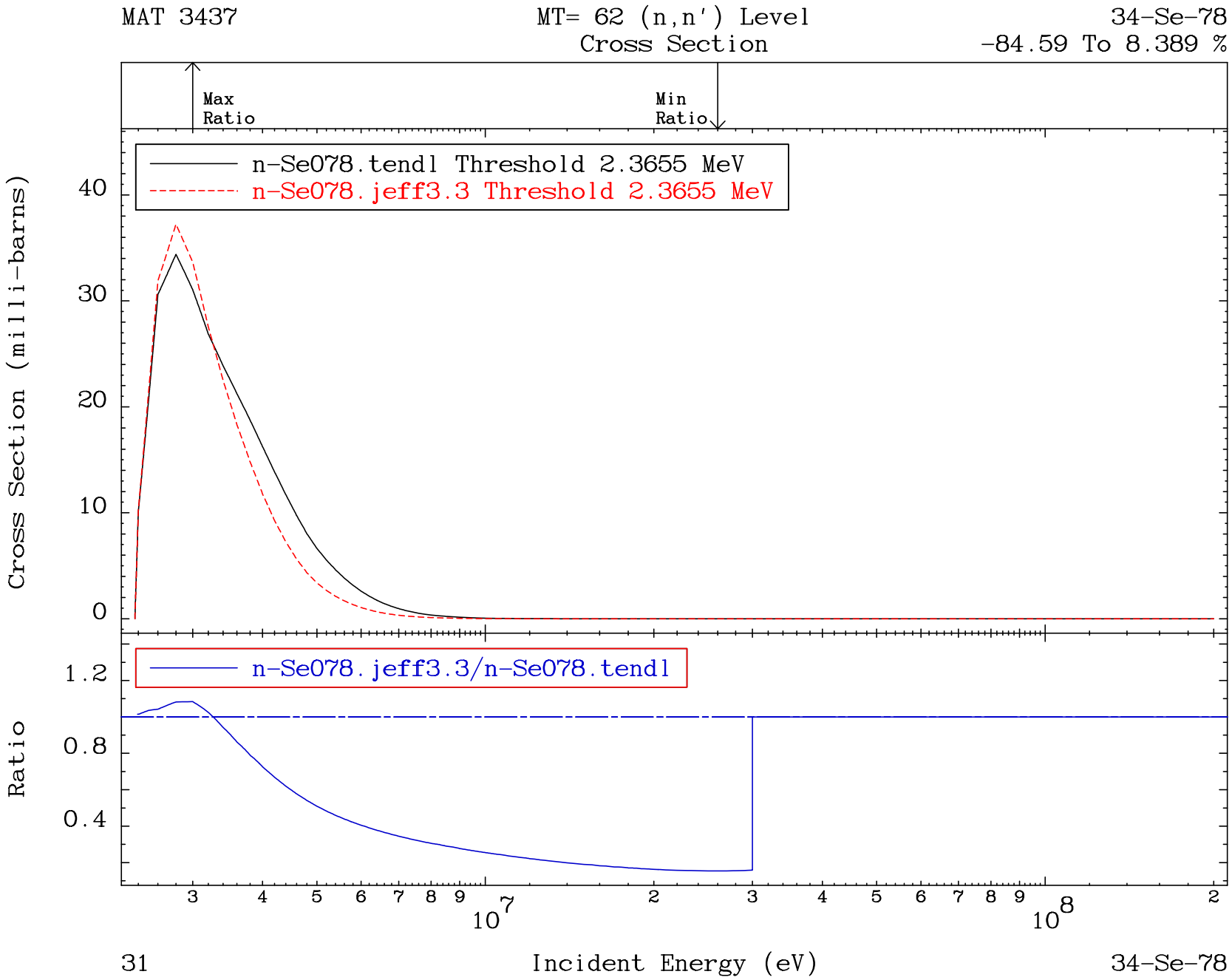

MAT 3437
MT= 57 (n,n') Level
Cross Section
34-Se-78
-52.31 To 4.438 %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 2.0217 MeV
n-Se078.jeff3.3 Threshold 2.0217 MeV
Cross Section (milli-barns)
200
150
100
50
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
1.2
1.0
0.8
0.6
2 3 4 5 6 7 8
10^7
2 3 4 5 6 7 8
10^8
2
26
Incident Energy (eV)
34-Se-78

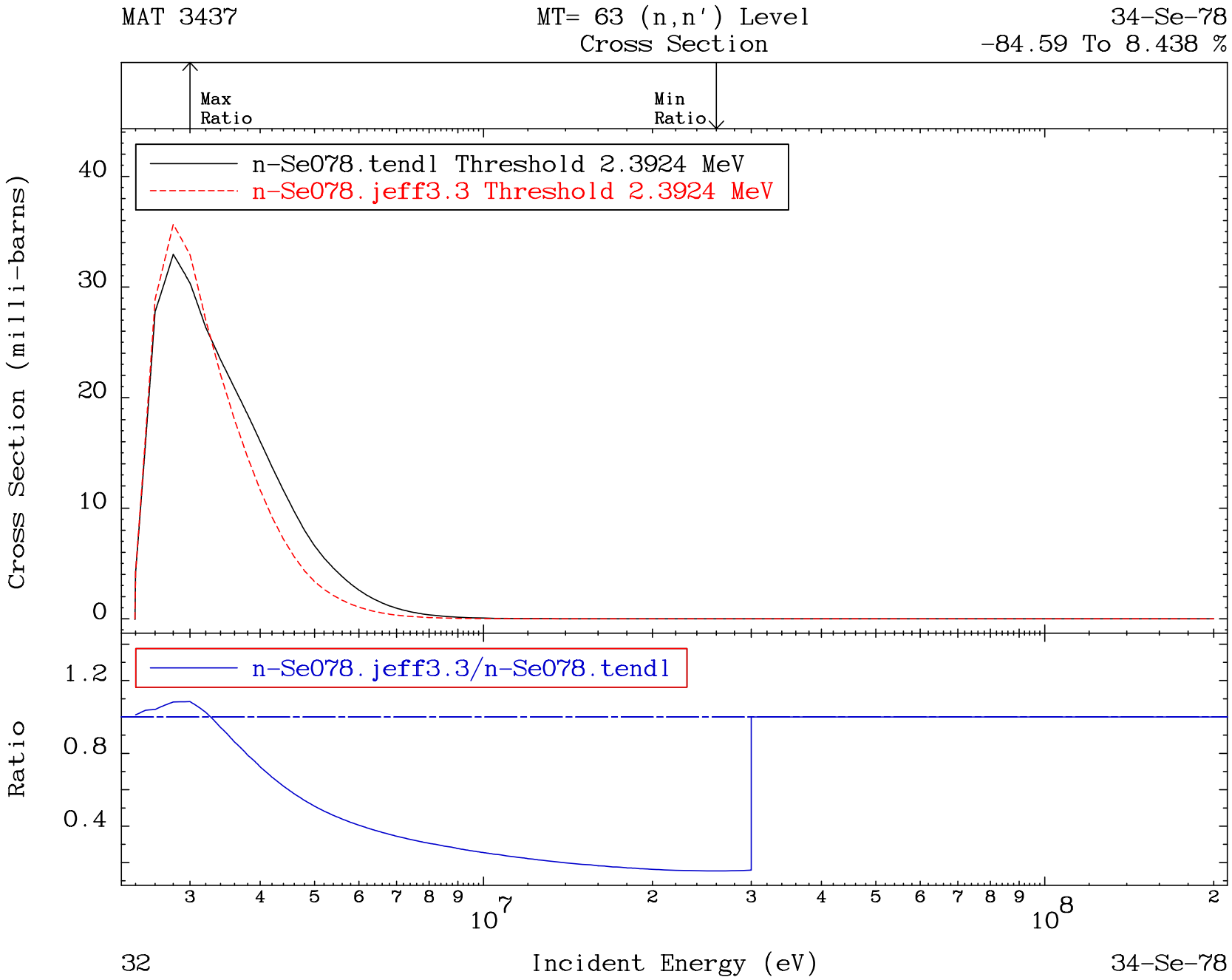

MAT 3437
MT= 58 (n,n') Level
Cross Section
34-Se-78
-56.06 To 0.000 %
Min
Ratio
Max
Ratio
n-Se078.tendl Threshold 2.2190 MeV
n-Se078.jeff3.3 Threshold 2.2190 MeV
Cross Section (milli-barns)
80
60
40
20
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
1.0
0.8
0.6
0.4
3 4 5 6 7 8 9
10^7
2 3 4 5 6 7 8 9
10^8
2
27
Incident Energy (eV)
34-Se-78

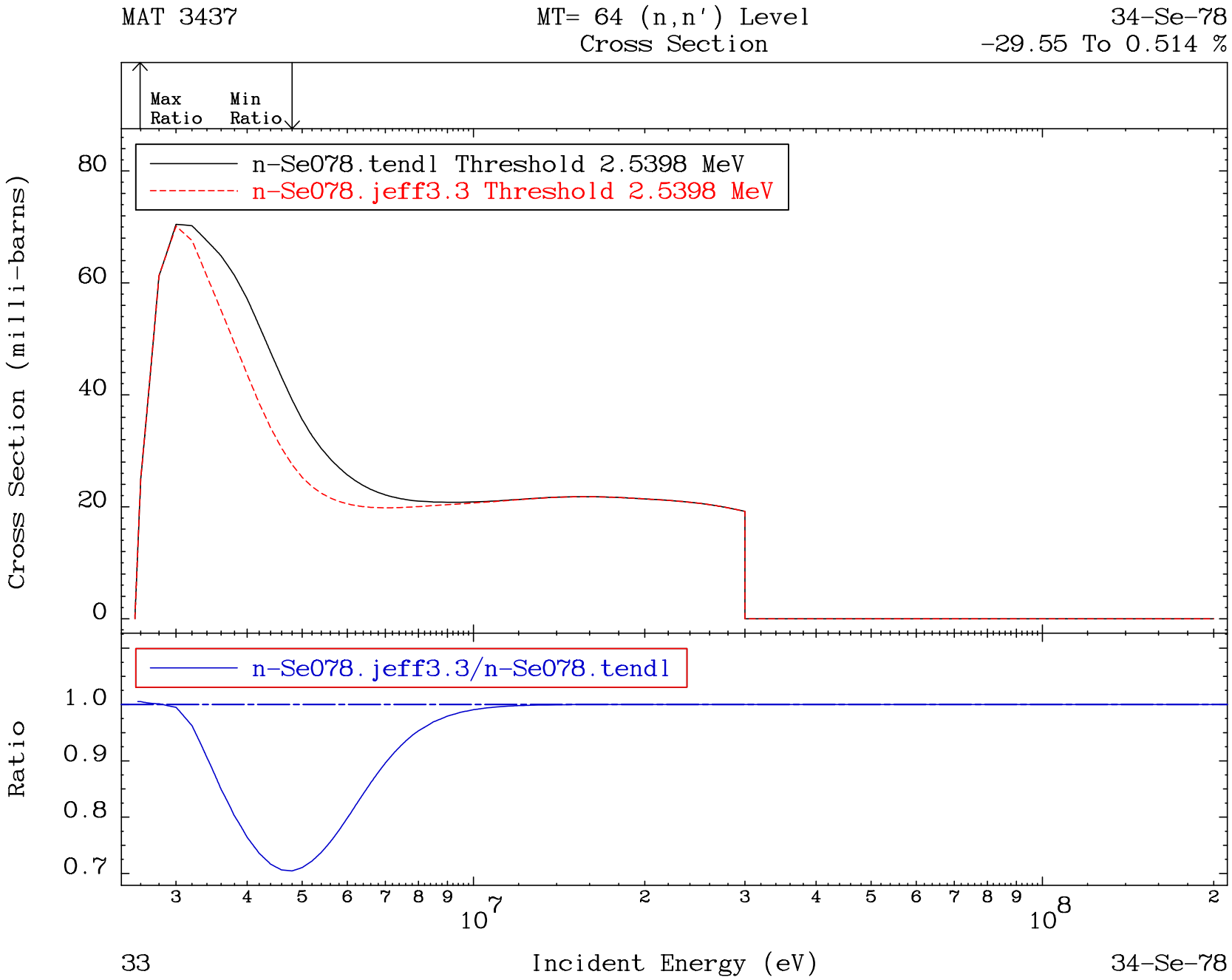

MAT 3437
MT= 59 (n,n') Level
Cross Section
34-Se-78
-65.39 To 0.000 %
Min Ratio
Max Ratio
n-Se078.tendl Threshold 2.2964 MeV
n-Se078.jeff3.3 Threshold 2.2964 MeV
Cross Section (milli-barns)
100
80
60
40
20
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
1.2
1.0
0.8
0.6
0.4
3 4 5 6 7 8 9
10^7
2 3 4 5 6 7 8 9
10^8
2
28
Incident Energy (eV)
34-Se-78

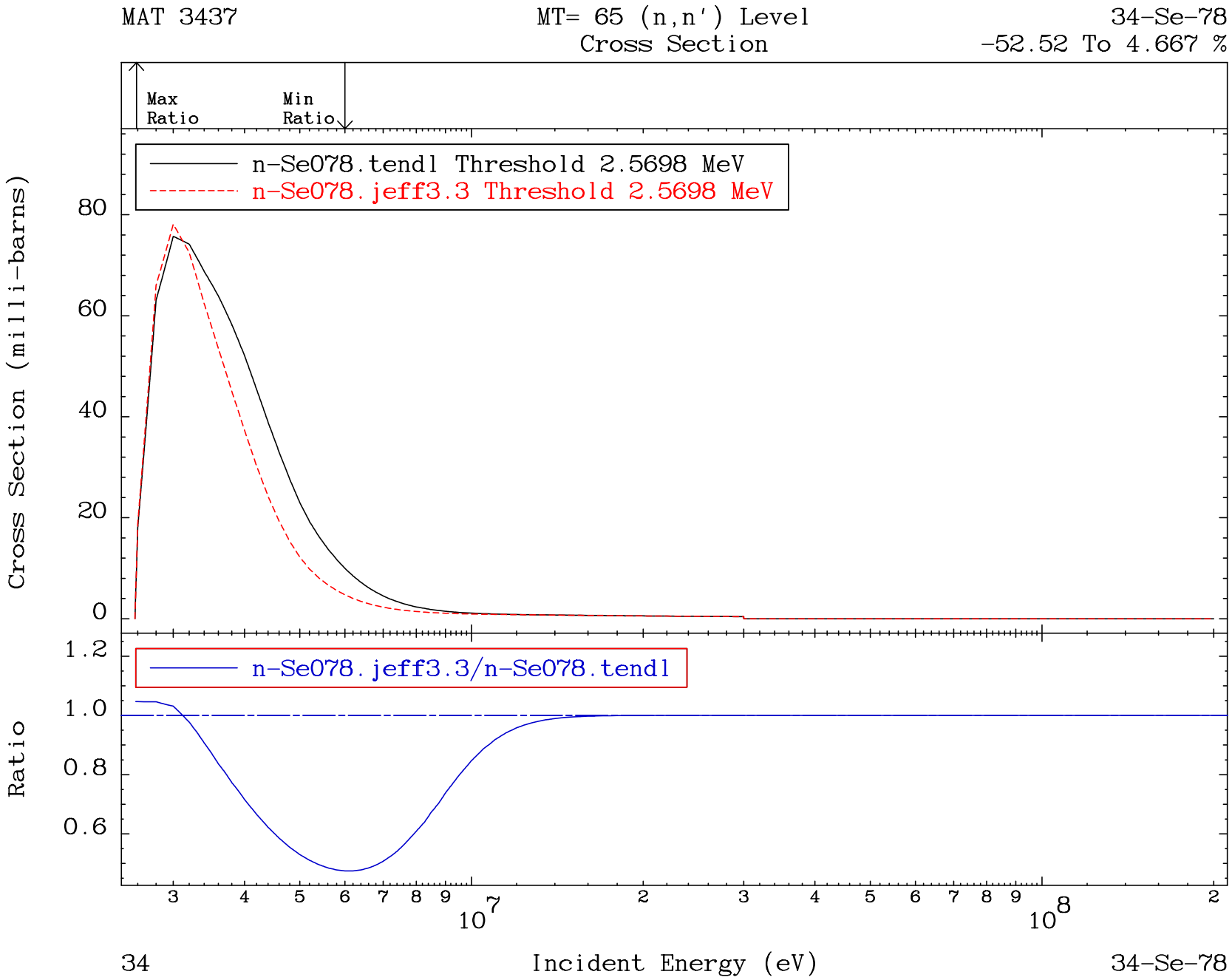

MAT 3437
MT= 60 (n,n') Level
Cross Section
34-Se-78
-100.0 To 0.000 %
Min Ratio
Max Ratio
n-Se078.tendl Threshold 2.3296 MeV
n-Se078.jeff3.3 Threshold 2.3296 MeV
Cross Section (milli-barns)
120
100
80
60
40
20
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
10^0
10^-3
10^-6
3 4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
29
Incident Energy (eV)
34-Se-78

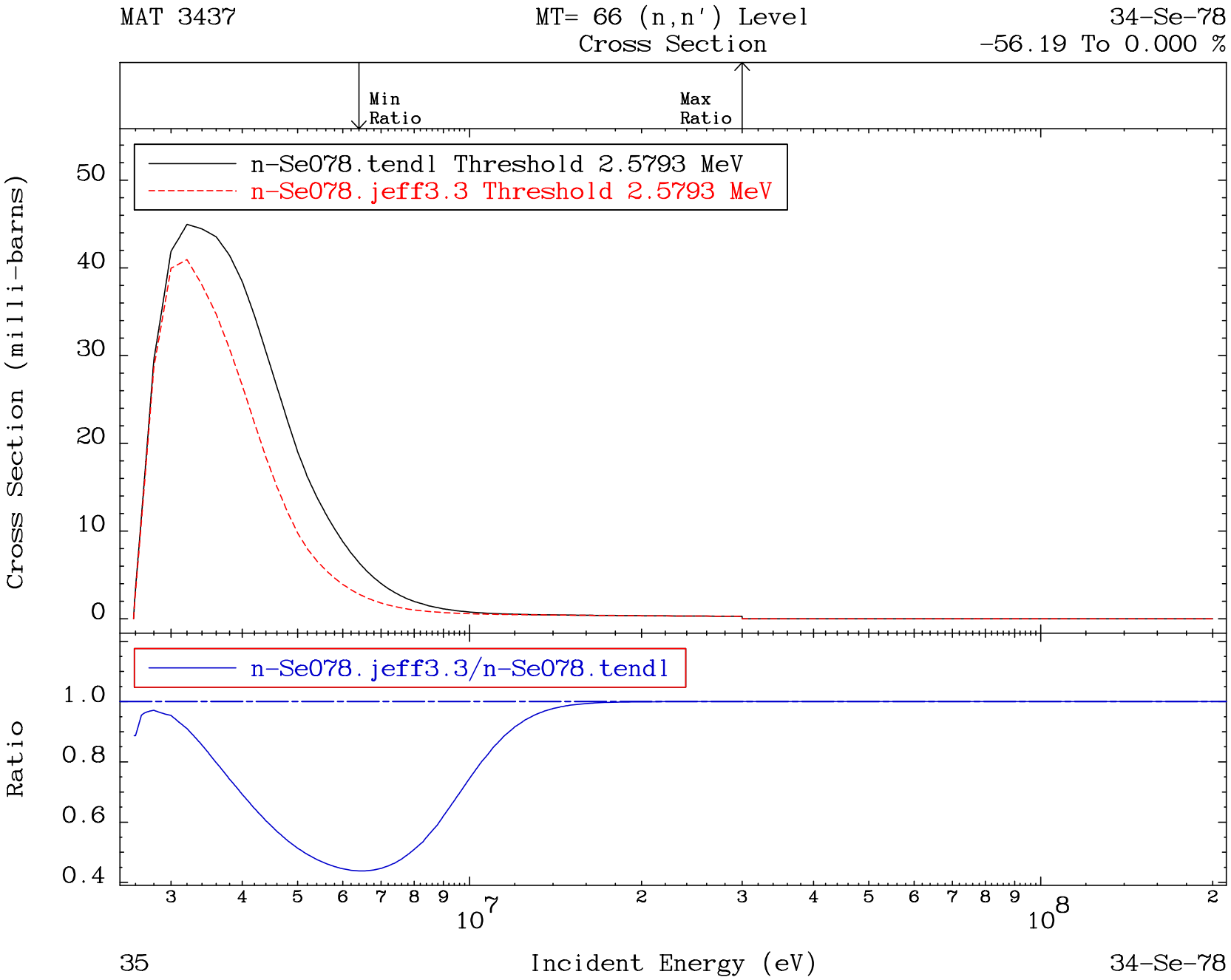

MAT 3437
MT= 61 (n,n') Level
Cross Section
34-Se-78
-52.42 To 4.595 %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 2.3575 MeV
n-Se078.jeff3.3 Threshold 2.3575 MeV
Cross Section (milli-barns)
120
100
80
60
40
20
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
1.2
1.0
0.8
0.6
3 4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
30
Incident Energy (eV)
34-Se-78

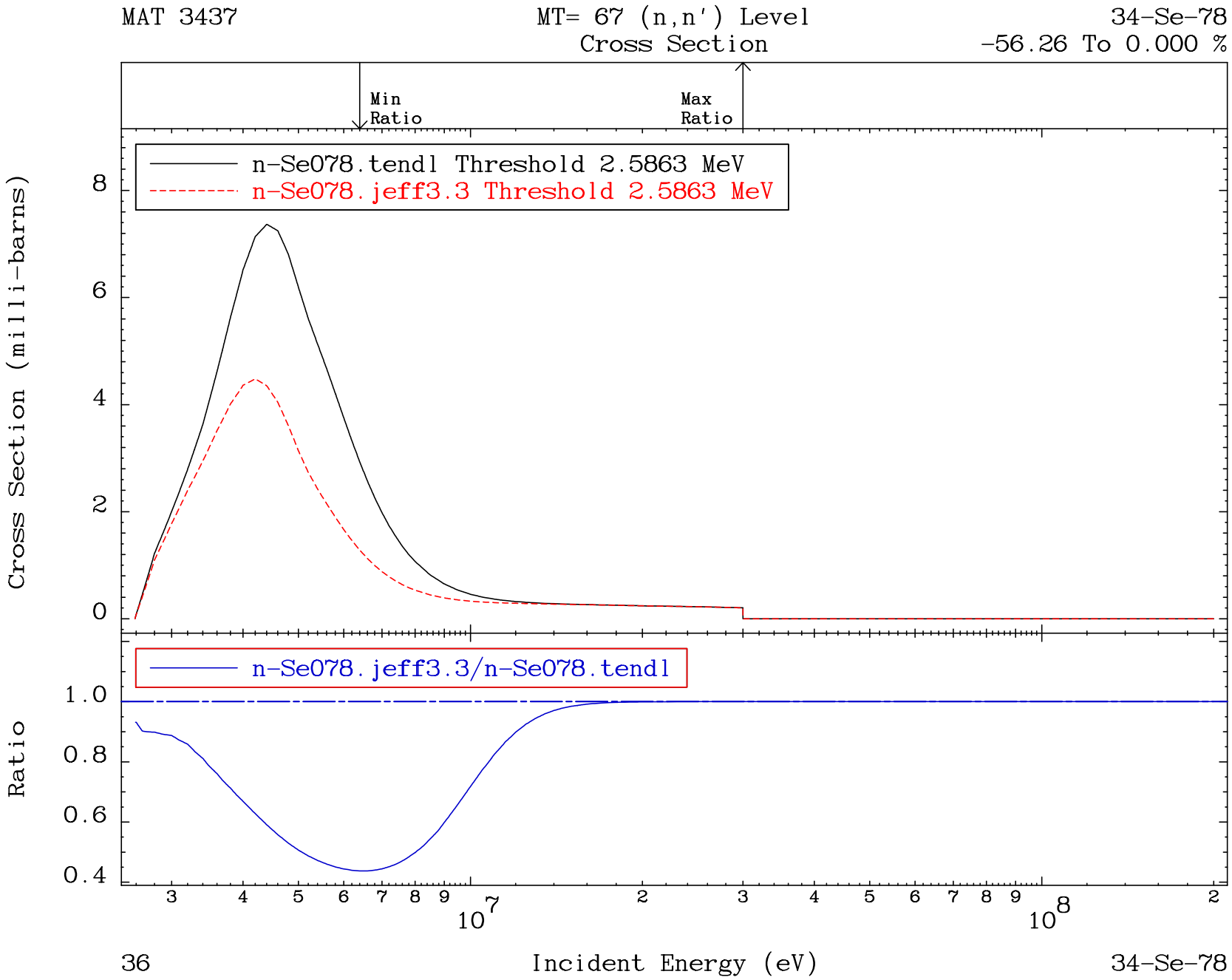

MAT 3437
MT= 62 (n,n') Level
Cross Section
34-Se-78
-84.59 To 8.389 %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 2.3655 MeV
n-Se078.jeff3.3 Threshold 2.3655 MeV
Cross Section (milli-barns)
40
30
20
10
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
1.2
0.8
0.4
3 4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
31
Incident Energy (eV)
34-Se-78

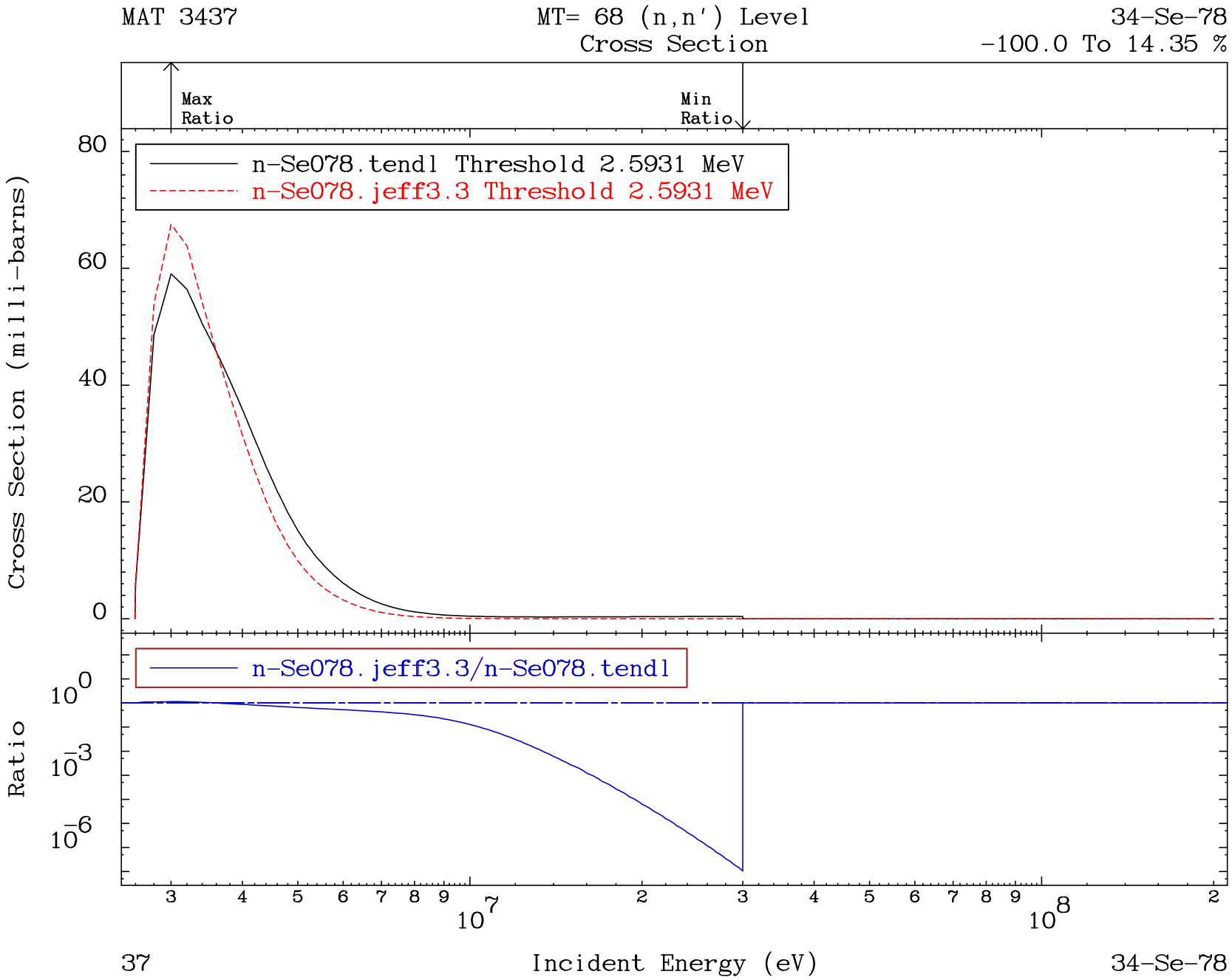

MAT 3437
MT= 63 (n,n') Level
Cross Section
34-Se-78
-84.59 To 8.438 %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 2.3924 MeV
n-Se078.jeff3.3 Threshold 2.3924 MeV
Cross Section (milli-barns)
40
30
20
10
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
1.2
0.8
0.4
3 4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
32
Incident Energy (eV)
34-Se-78

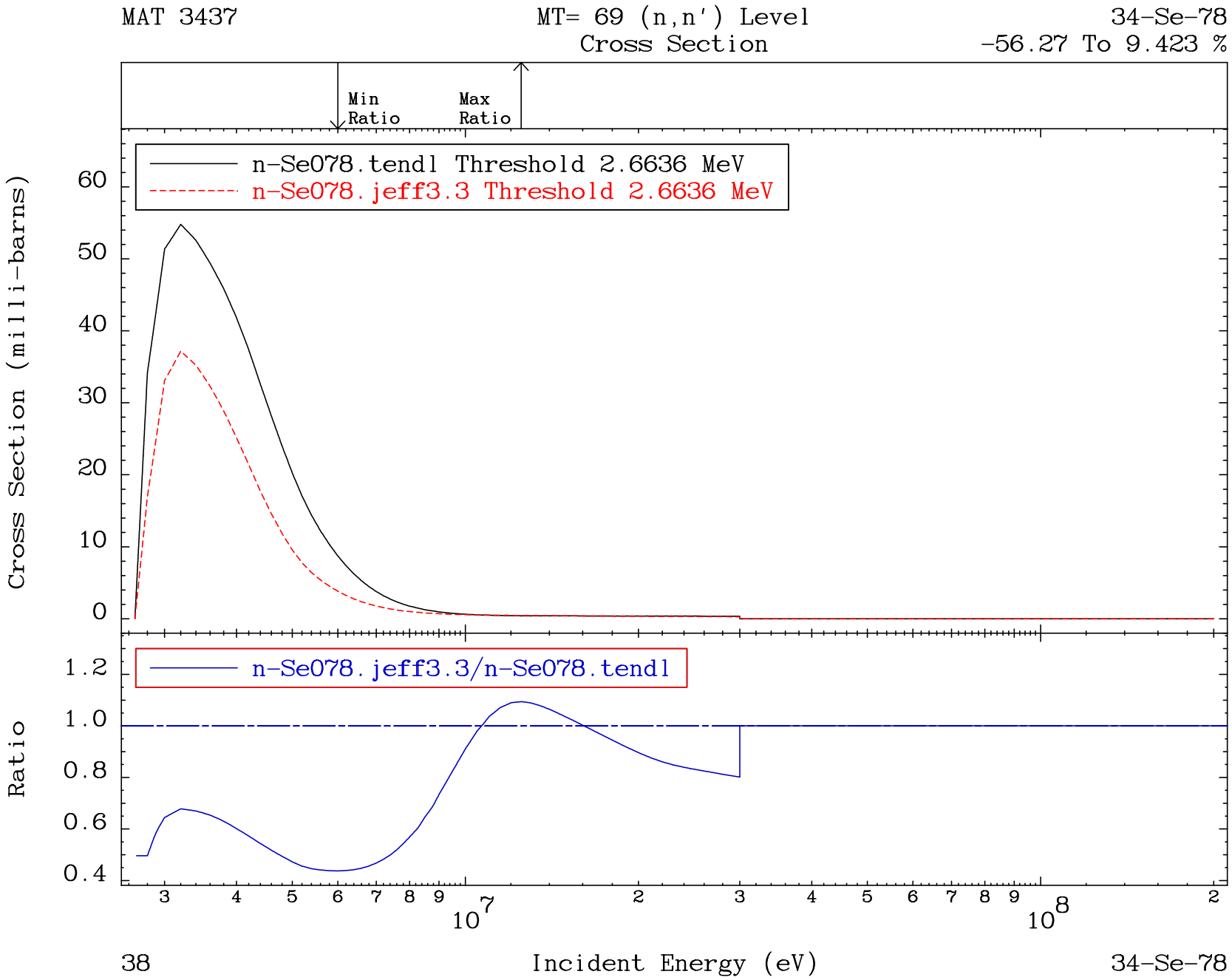

MAT 3437
MT= 64 (n,n') Level
Cross Section
34-Se-78
-29.55 To 0.514 %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 2.5398 MeV
n-Se078.jeff3.3 Threshold 2.5398 MeV
Cross Section (milli-barns)
80
60
40
20
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
1.0
0.9
0.8
0.7
3 4 5 6 7 8 9
10^7
2 3 4 5 6 7 8 9
10^8
2
33
Incident Energy (eV)
34-Se-78

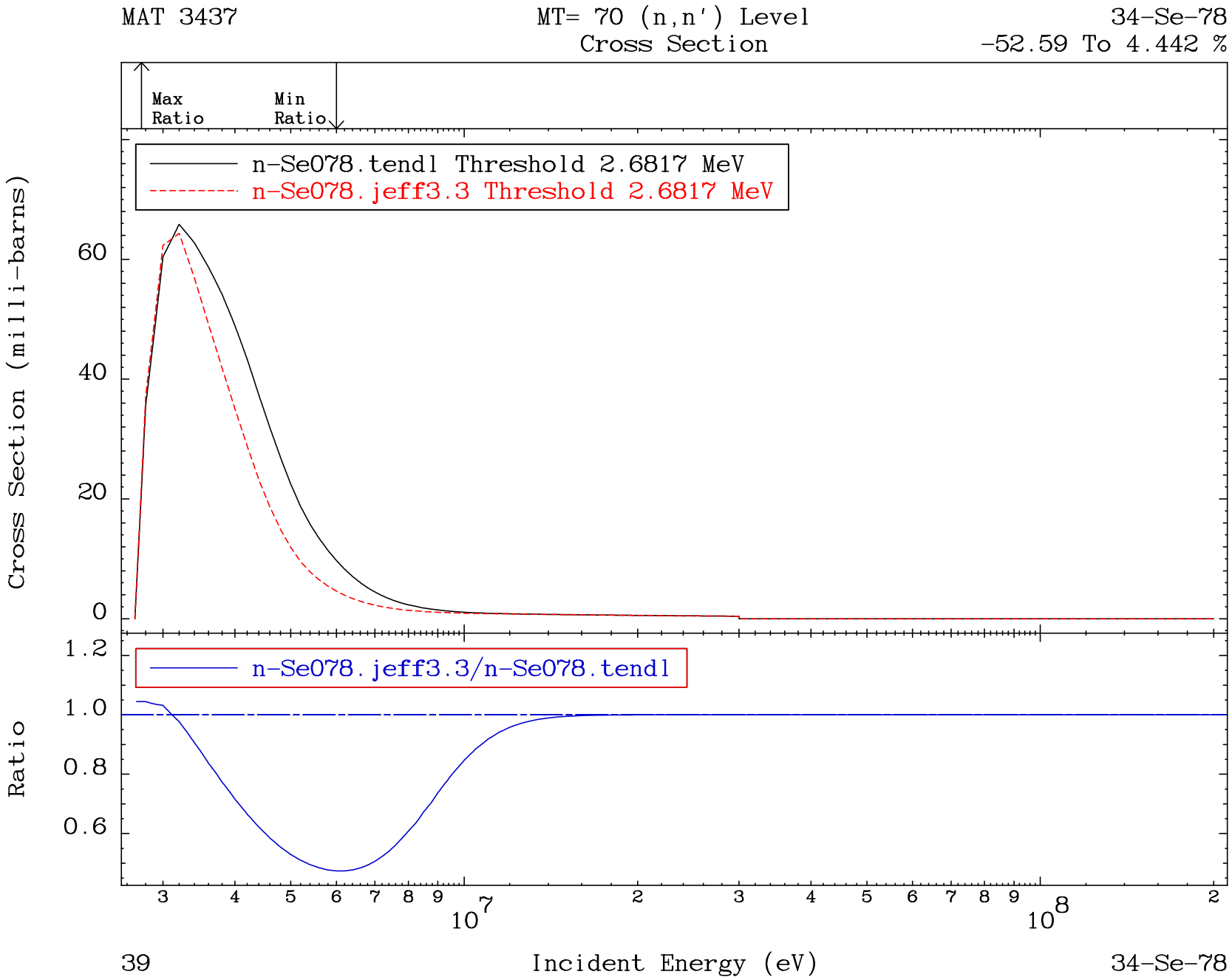

MAT 3437
MT= 65 (n,n') Level
Cross Section
34-Se-78
-52.52 To 4.667 %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 2.5698 MeV
n-Se078.jeff3.3 Threshold 2.5698 MeV
Cross Section (milli-barns)
80
60
40
20
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
1.2
1.0
0.8
0.6
3 4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
34
Incident Energy (eV)
34-Se-78

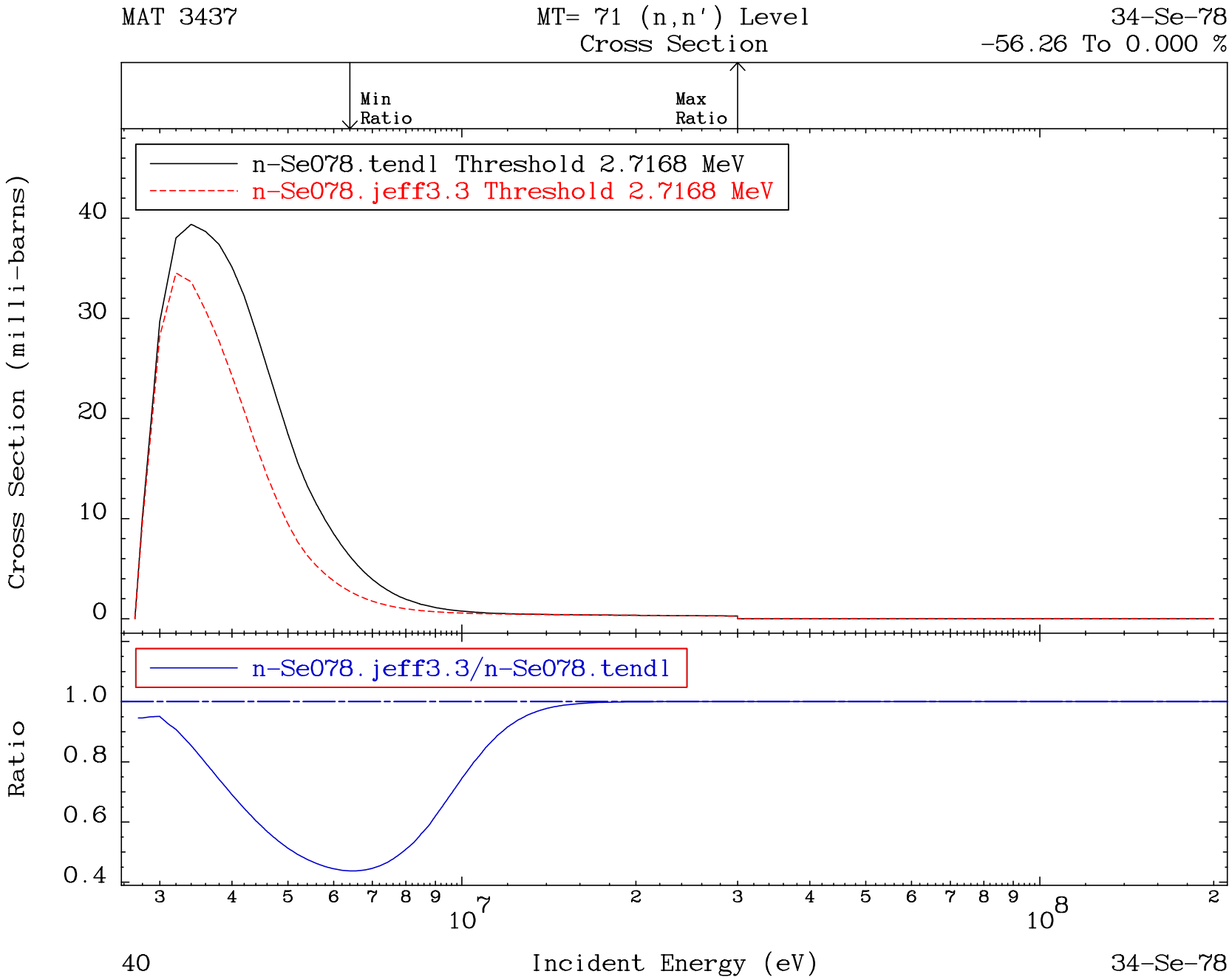

MAT 3437
MT= 66 (n,n') Level
Cross Section
34-Se-78
-56.19 To 0.000 %
Min
Ratio
Max
Ratio
n-Se078.tendl Threshold 2.5793 MeV
n-Se078.jeff3.3 Threshold 2.5793 MeV
Cross Section (milli-barns)
50
40
30
20
10
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
1.0
0.8
0.6
0.4
3 4 5 6 7 8 9
10^7
2 3 4 5 6 7 8 9
10^8
2
35
Incident Energy (eV)
34-Se-78

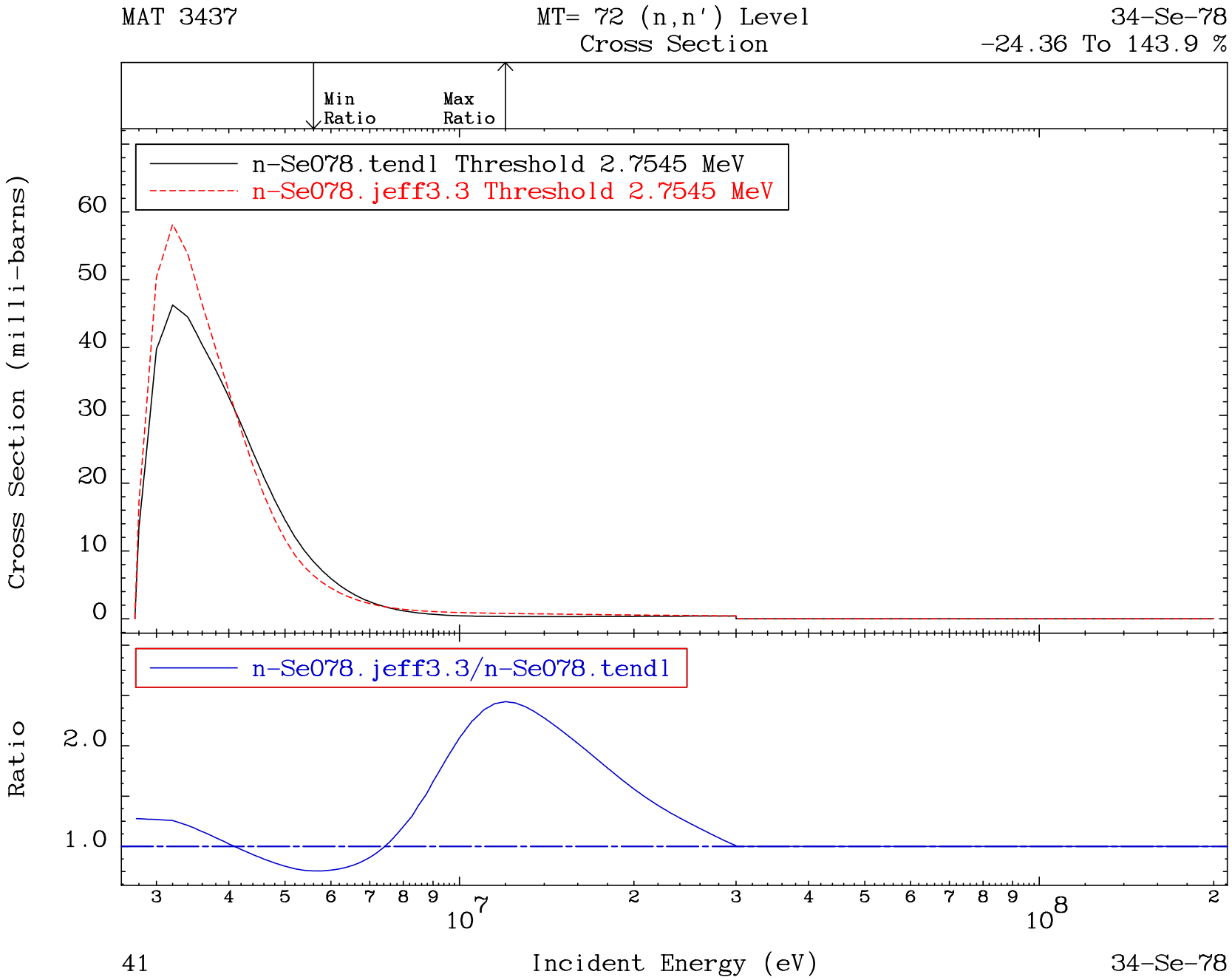

MAT 3437
MT= 67 (n,n') Level
Cross Section
34-Se-78
-56.26 To 0.000 %
Min
Ratio
Max
Ratio
n-Se078.tendl Threshold 2.5863 MeV
n-Se078.jeff3.3 Threshold 2.5863 MeV
Cross Section (milli-barns)
0
2
4
6
8
n-Se078.jeff3.3/n-Se078.tendl
Ratio
0.4
0.6
0.8
1.0
3 4 5 6 7 8 9
10^7
2 3 4 5 6 7 8 9
10^8
2
36
Incident Energy (eV)
34-Se-78

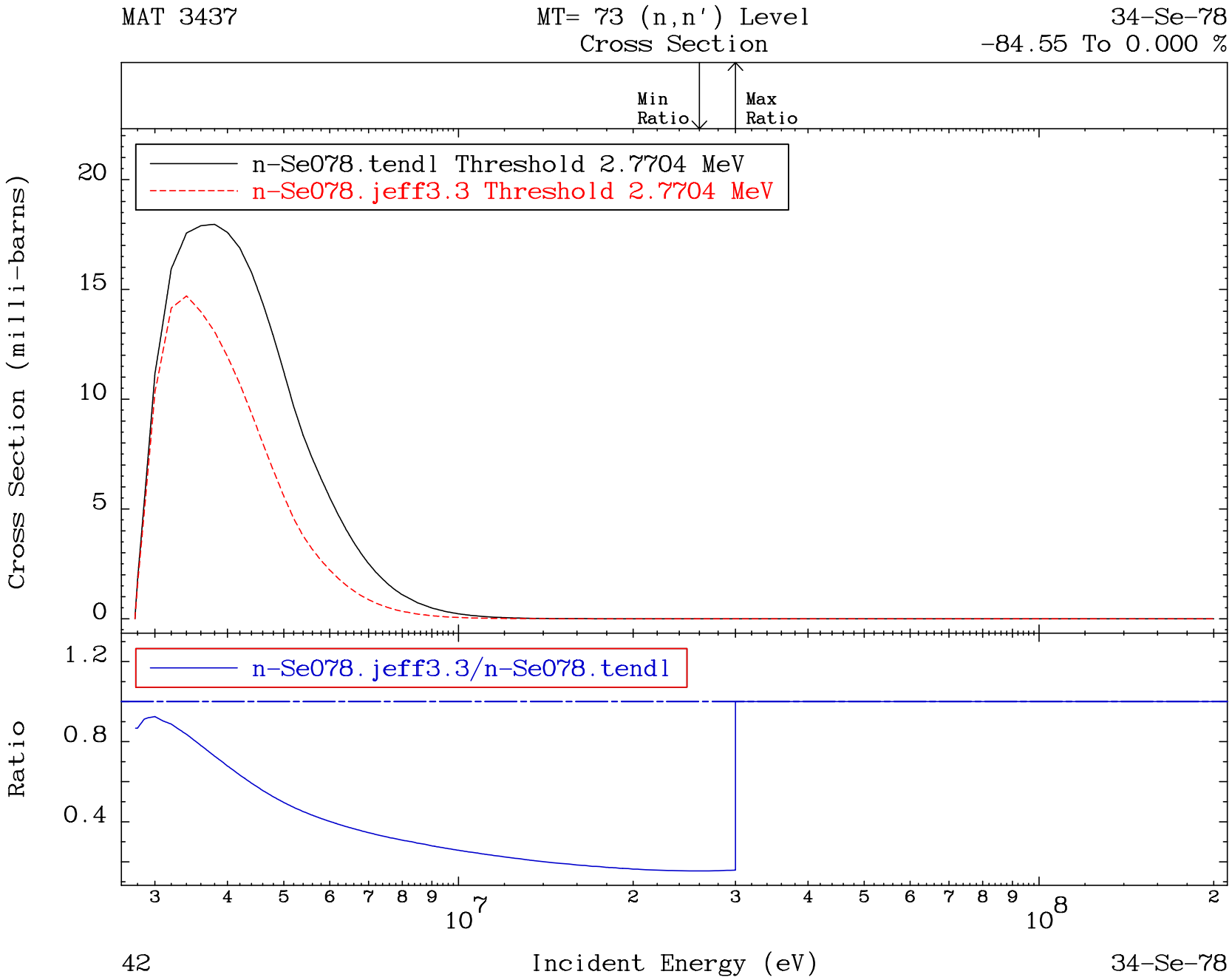

MAT 3437
MT= 68 (n,n') Level
Cross Section
34-Se-78
-100.0 To 14.35 %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 2.5931 MeV
n-Se078.jeff3.3 Threshold 2.5931 MeV
Cross Section (milli-barns)
80
60
40
20
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
10^0
10^-3
10^-6
3 4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
37
Incident Energy (eV)
34-Se-78

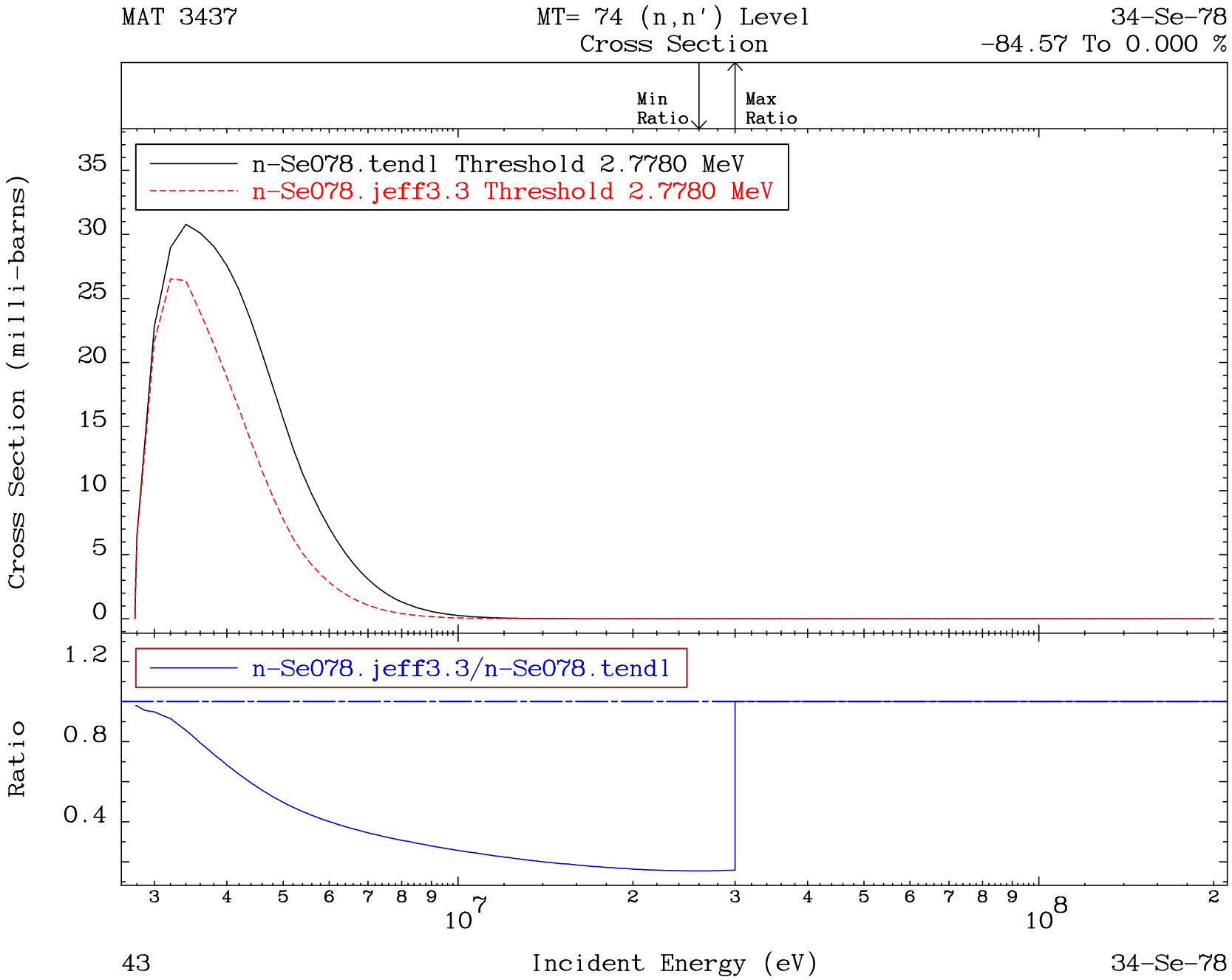

MAT 3437
MT= 69 (n,n') Level
Cross Section
34-Se-78
-56.27 To 9.423 %
Min Ratio
Max Ratio
n-Se078.tendl Threshold 2.6636 MeV
n-Se078.jeff3.3 Threshold 2.6636 MeV
Cross Section (milli-barns)
60
50
40
30
20
10
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
1.2
1.0
0.8
0.6
0.4
3 4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
38
Incident Energy (eV)
34-Se-78

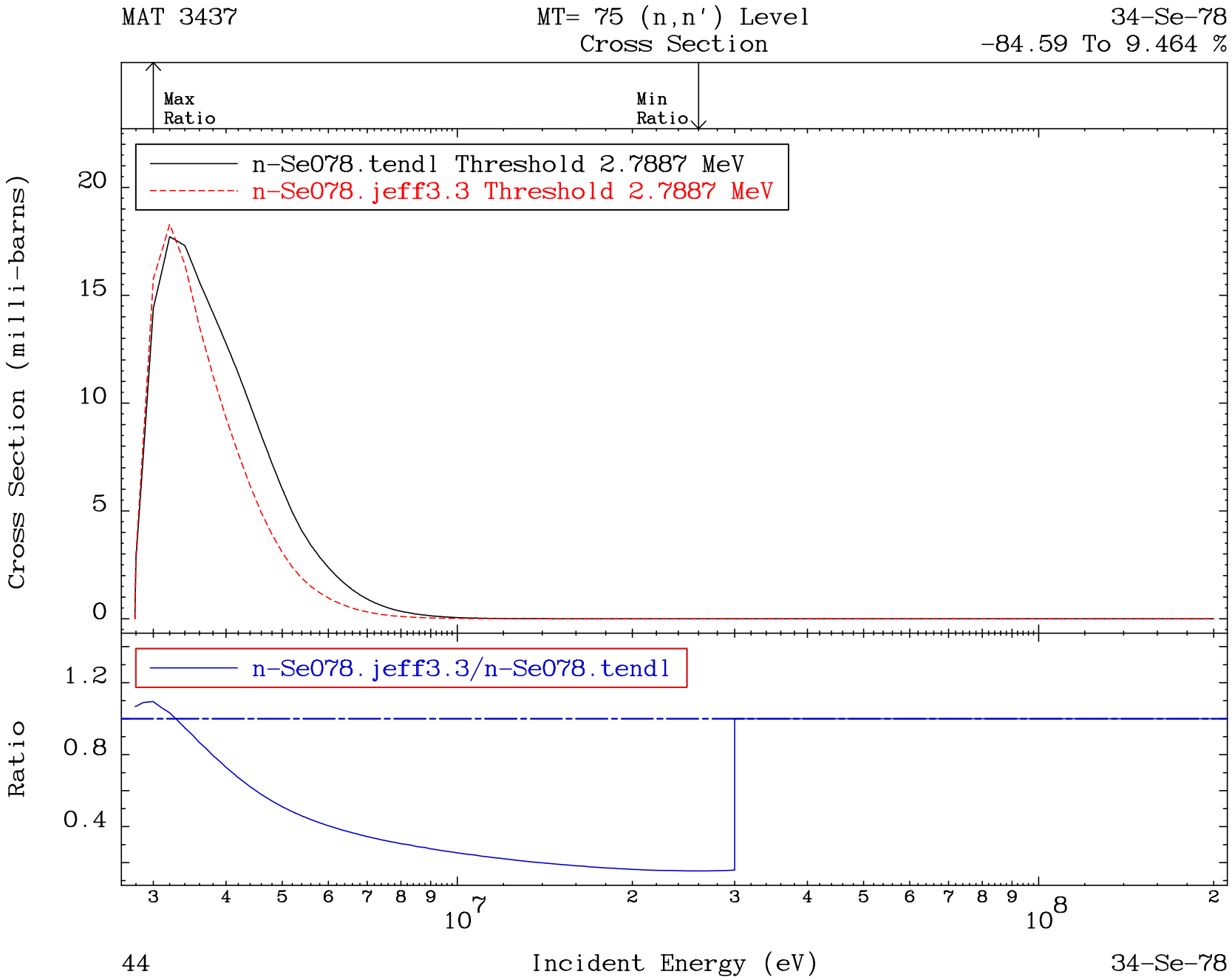

MAT 3437
MT= 70 (n,n') Level
Cross Section
34-Se-78
-52.59 To 4.442 %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 2.6817 MeV
n-Se078.jeff3.3 Threshold 2.6817 MeV
Cross Section (milli-barns)
60
40
20
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
1.2
1.0
0.8
0.6
3 4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
39
Incident Energy (eV)
34-Se-78

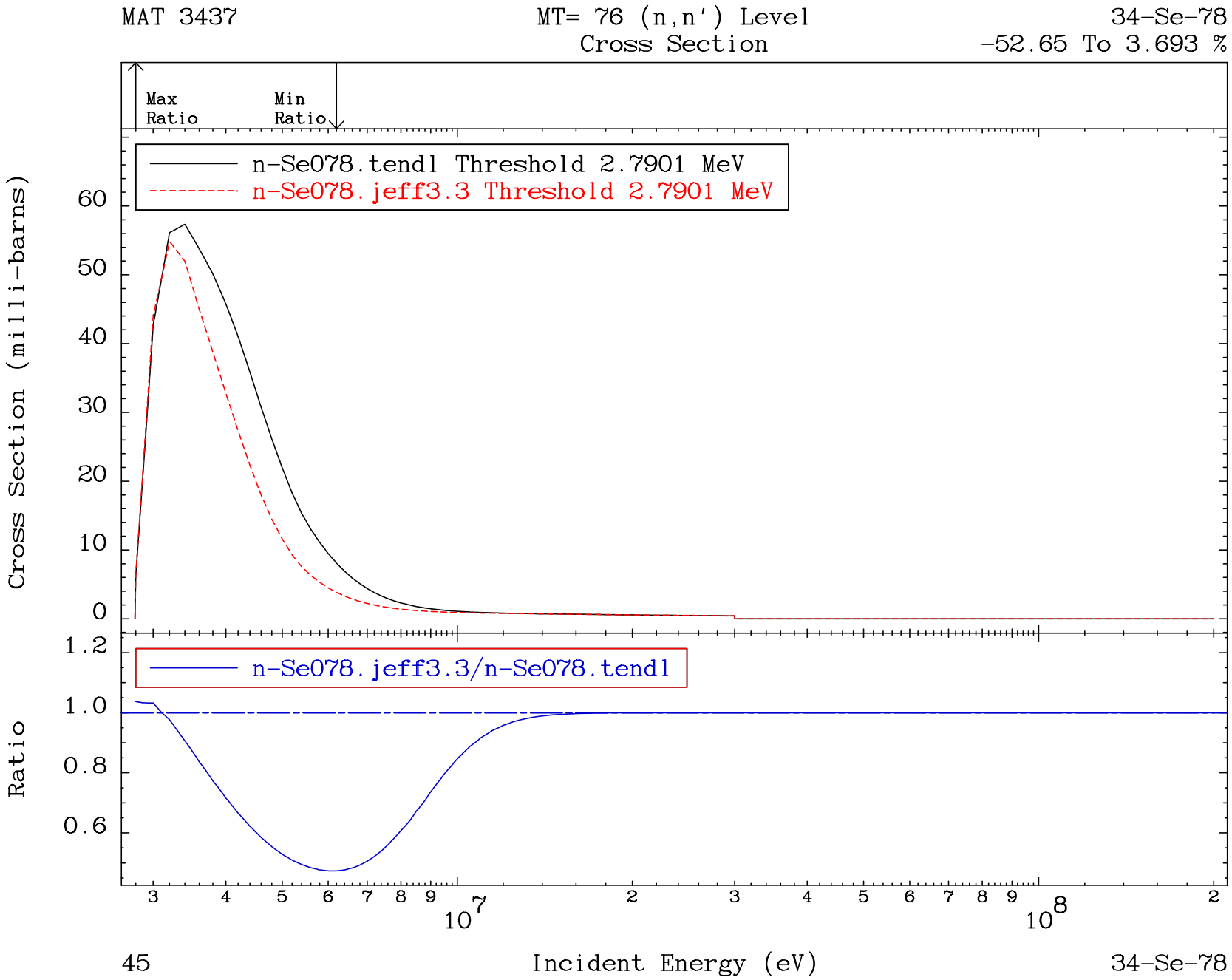

MAT 3437
MT= 71 (n,n') Level
Cross Section
34-Se-78
-56.26 To 0.000 %
Min
Ratio
Max
Ratio
n-Se078.tendl Threshold 2.7168 MeV
n-Se078.jeff3.3 Threshold 2.7168 MeV
Cross Section (milli-barns)
40
30
20
10
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
1.0
0.8
0.6
0.4
3 4 5 6 7 8 9
10^7
2 3 4 5 6 7 8 9
10^8
2
40
Incident Energy (eV)
34-Se-78

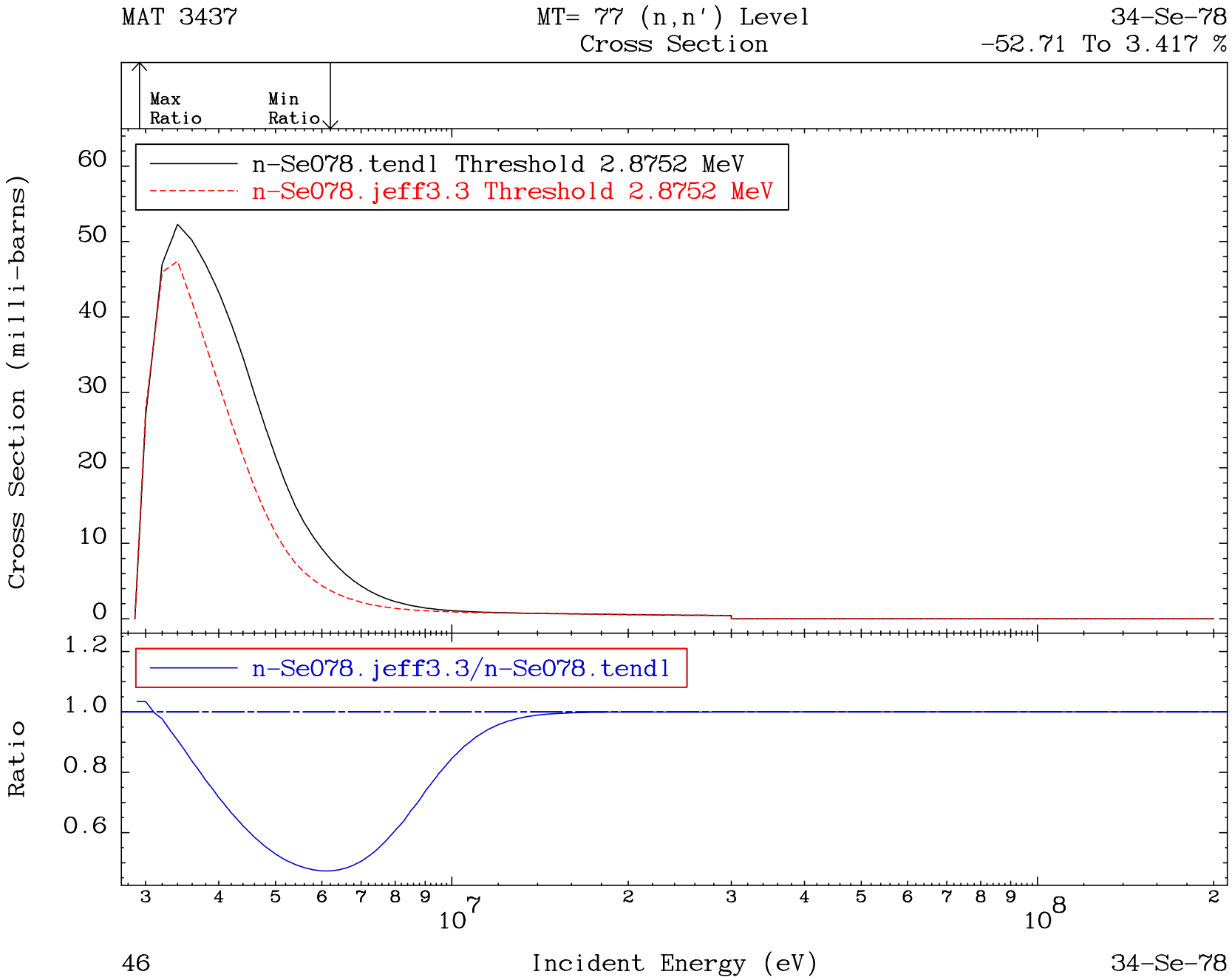

MAT 3437
MT= 72 (n,n') Level
Cross Section
34-Se-78
-24.36 To 143.9 %
Min Ratio
Max Ratio
n-Se078.tendl Threshold 2.7545 MeV
n-Se078.jeff3.3 Threshold 2.7545 MeV
Cross Section (milli-barns)
60
50
40
30
20
10
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
2.0
1.0
3 4 5 6 7 8 9
10^7
2 3 4 5 6 7 8 9
10^8
2
41
Incident Energy (eV)
34-Se-78

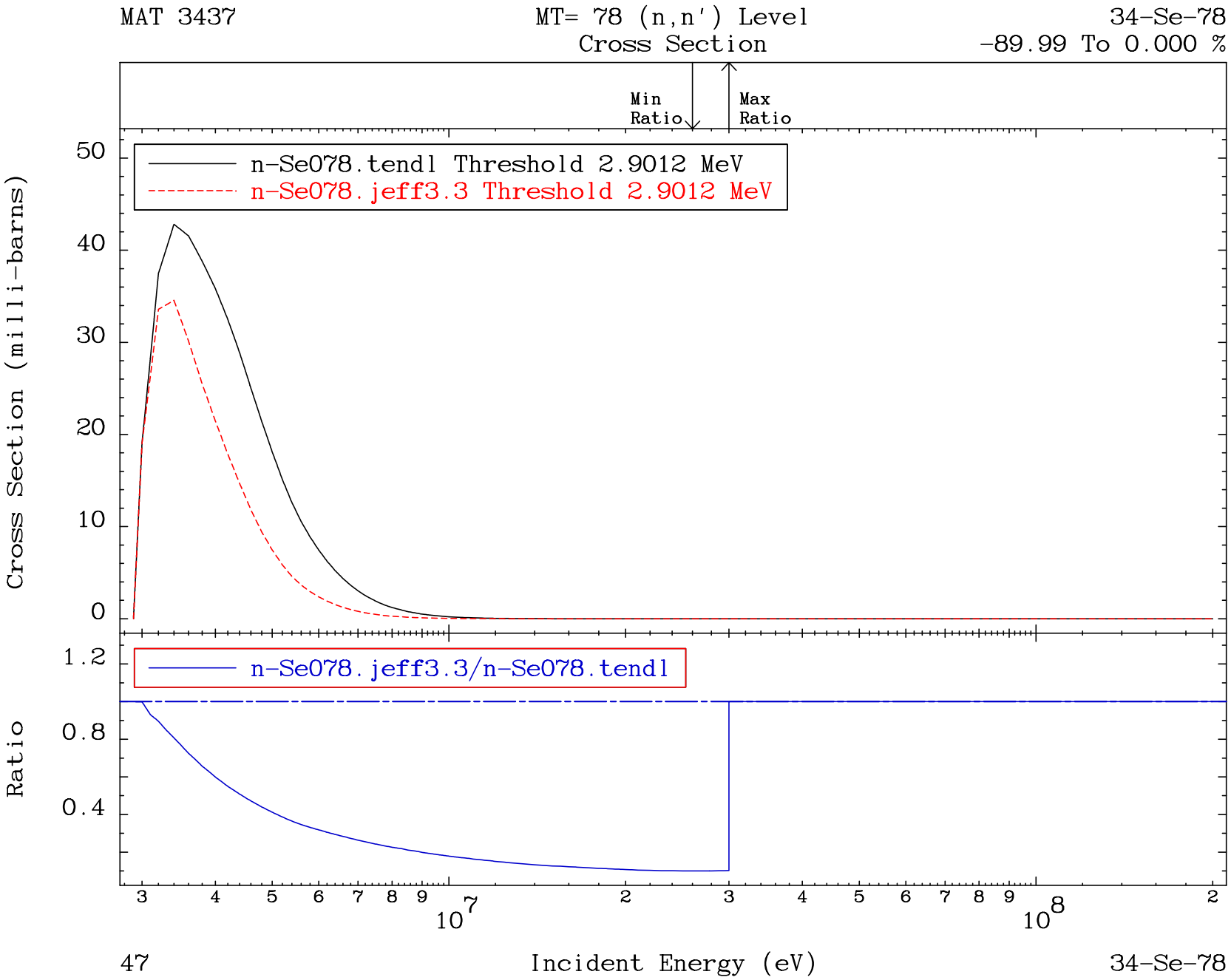

MAT 3437
MT= 73 (n,n') Level
Cross Section
34-Se-78
-84.55 To 0.000 %
Min Ratio
Max Ratio
n-Se078.tendl Threshold 2.7704 MeV
n-Se078.jeff3.3 Threshold 2.7704 MeV
Cross Section (milli-barns)
20
15
10
5
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
1.2
0.8
0.4
3 4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
42
Incident Energy (eV)
34-Se-78

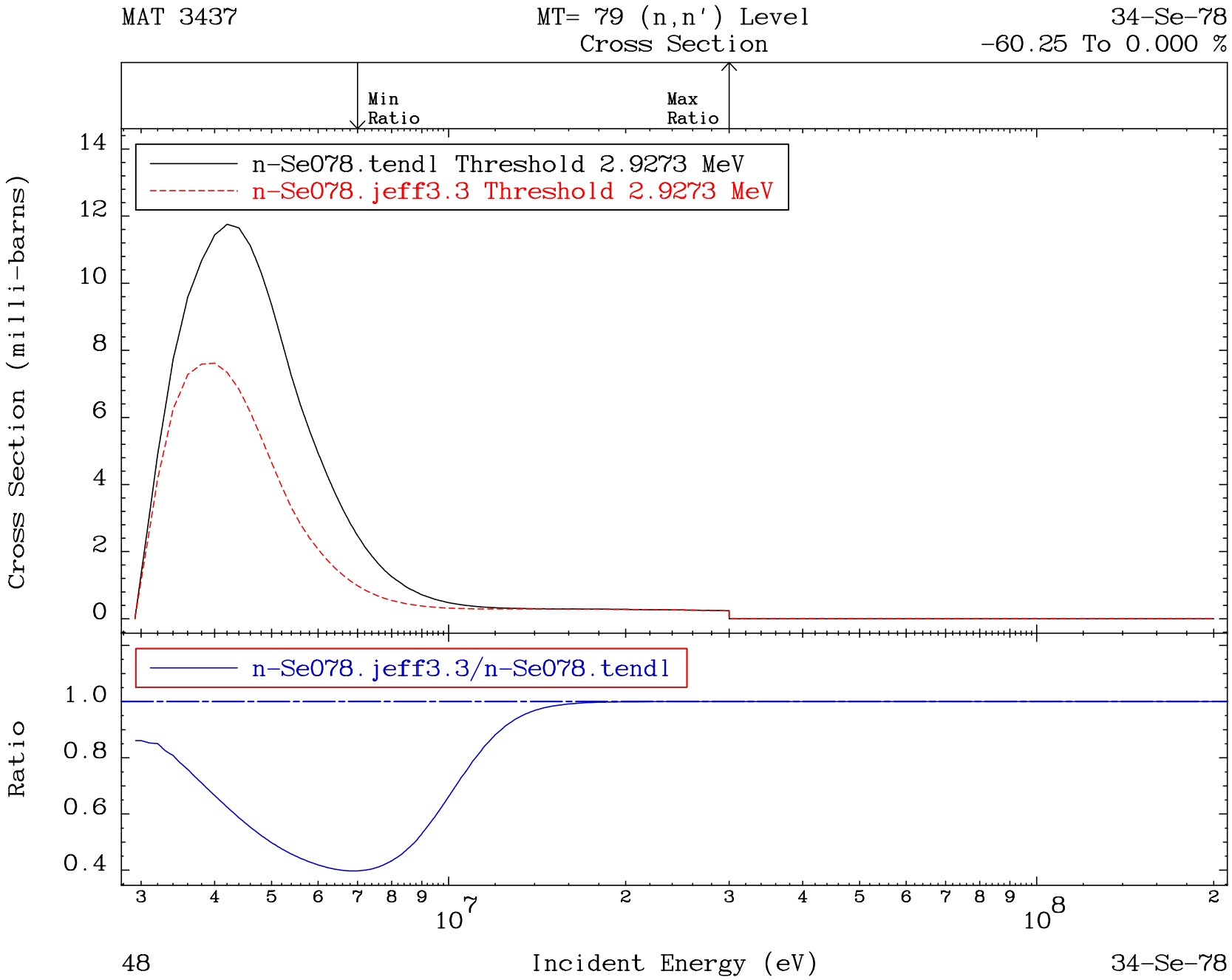

MAT 3437
MT= 74 (n,n') Level
Cross Section
34-Se-78
-84.57 To 0.000 %
Min Ratio
Max Ratio
n-Se078.tendl Threshold 2.7780 MeV
n-Se078.jeff3.3 Threshold 2.7780 MeV
Cross Section (milli-barns)
35
30
25
20
15
10
5
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
1.2
0.8
0.4
3 4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
43
Incident Energy (eV)
34-Se-78

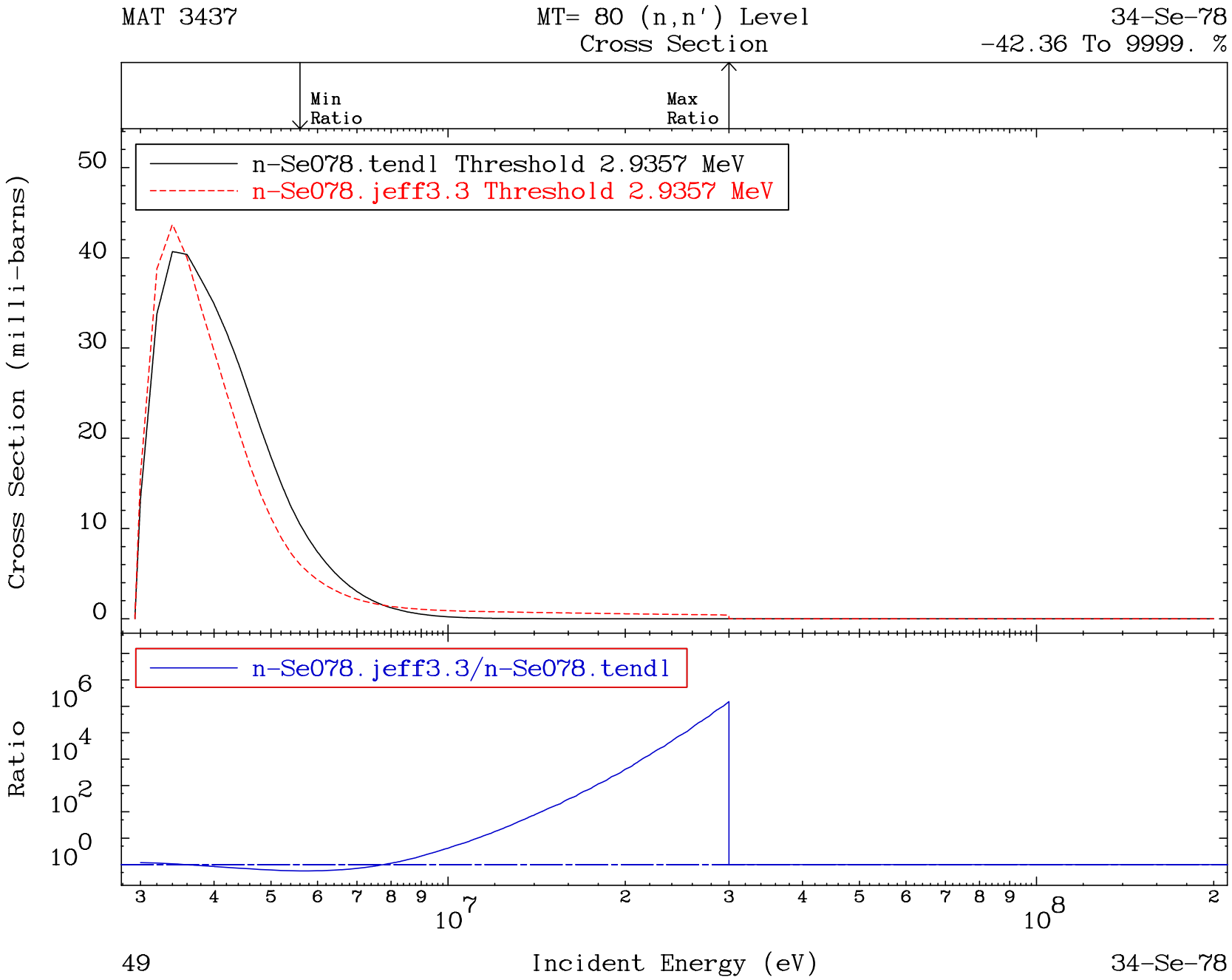

MAT 3437
MT= 75 (n,n') Level
Cross Section
34-Se-78
-84.59 To 9.464 %
Max
Ratio
Min
Ratio
n-Se078.tendl Threshold 2.7887 MeV
n-Se078.jeff3.3 Threshold 2.7887 MeV
Cross Section (milli-barns)
20
15
10
5
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
1.2
0.8
0.4
3 4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
44
Incident Energy (eV)
34-Se-78

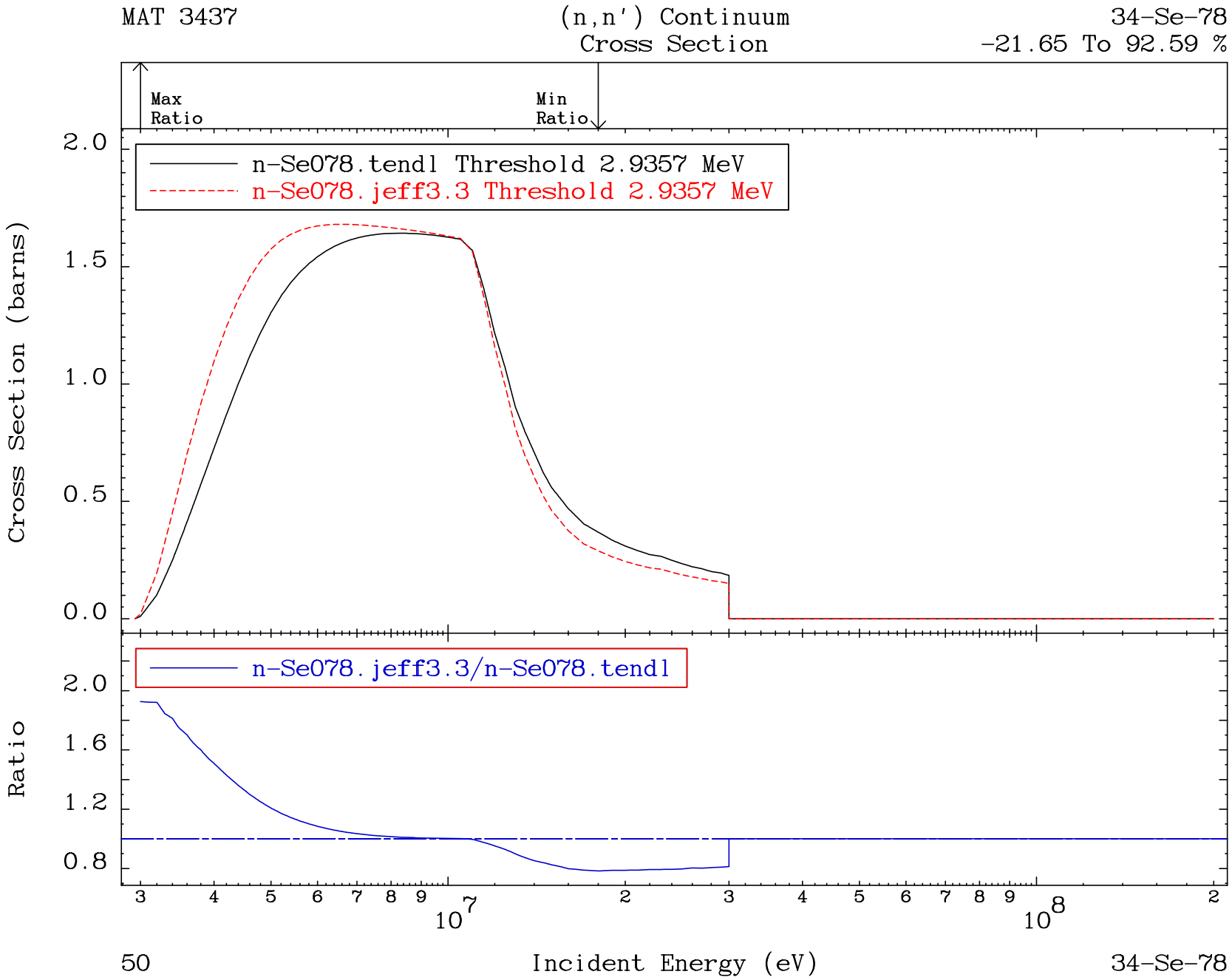

MAT 3437
MT= 76 (n,n') Level
Cross Section
34-Se-78
-52.65 To 3.693 %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 2.7901 MeV
n-Se078.jeff3.3 Threshold 2.7901 MeV
Cross Section (milli-barns)
60
50
40
30
20
10
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
1.2
1.0
0.8
0.6
3 4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
45
Incident Energy (eV)
34-Se-78

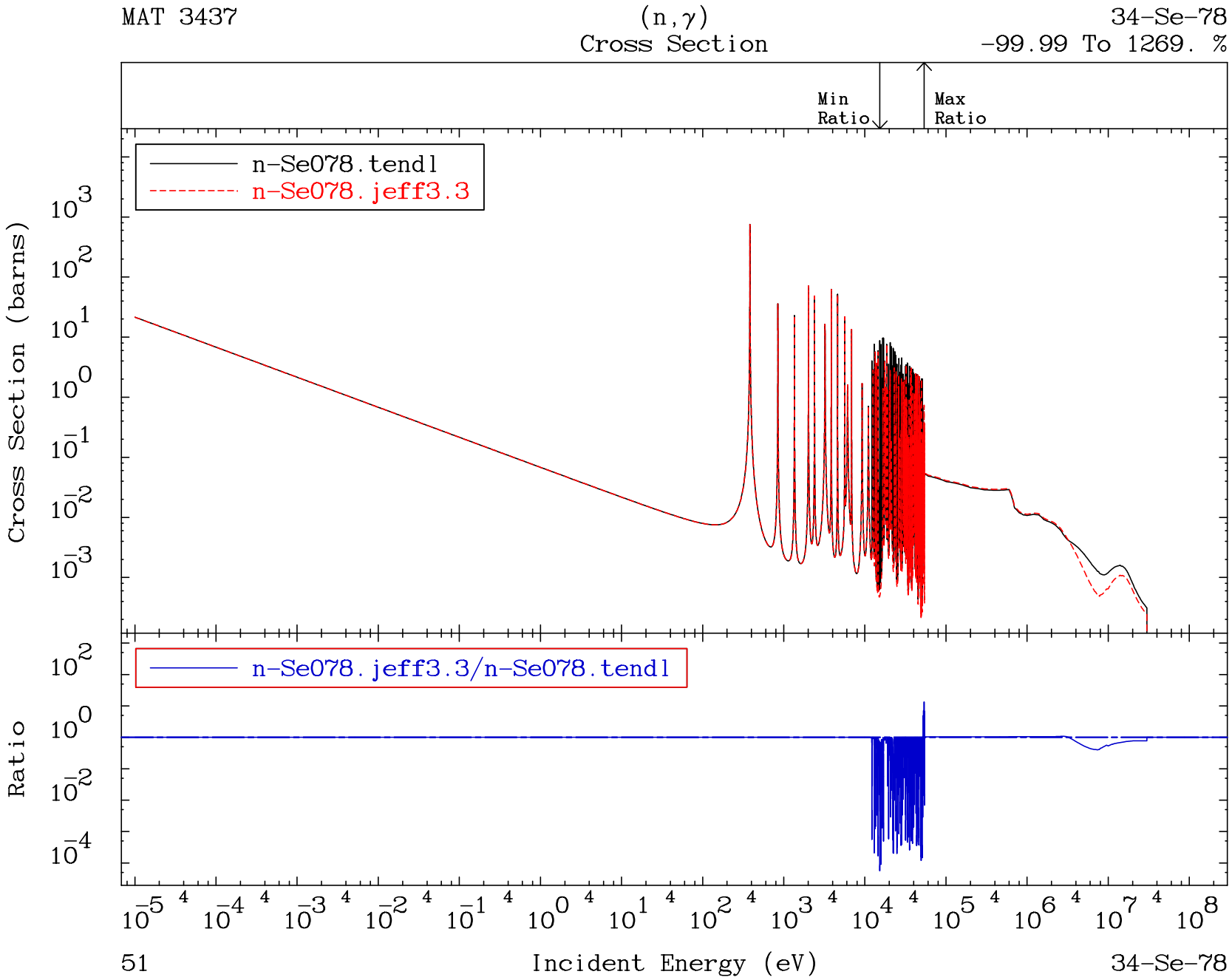

MAT 3437
MT= 77 (n,n') Level
Cross Section
34-Se-78
-52.71 To 3.417 %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 2.8752 MeV
n-Se078.jeff3.3 Threshold 2.8752 MeV
Cross Section (milli-barns)
60
50
40
30
20
10
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
1.2
1.0
0.8
0.6
3 4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
46
Incident Energy (eV)
34-Se-78

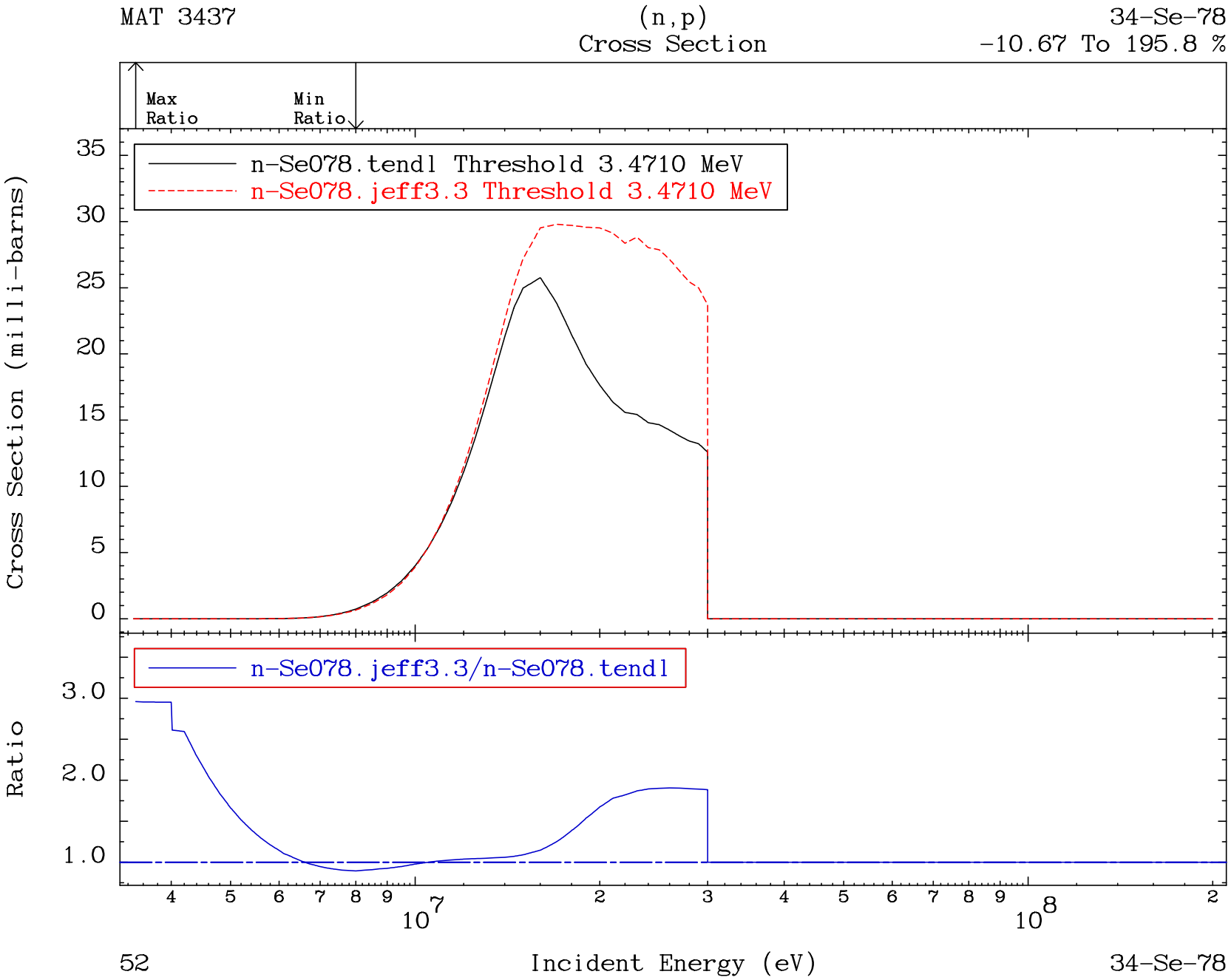

MAT 3437
MT= 78 (n,n') Level
Cross Section
34-Se-78
-89.99 To 0.000 %
Min Ratio
Max Ratio
n-Se078.tendl Threshold 2.9012 MeV
n-Se078.jeff3.3 Threshold 2.9012 MeV
Cross Section (milli-barns)
50
40
30
20
10
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
1.2
0.8
0.4
3 4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
47
Incident Energy (eV)
34-Se-78

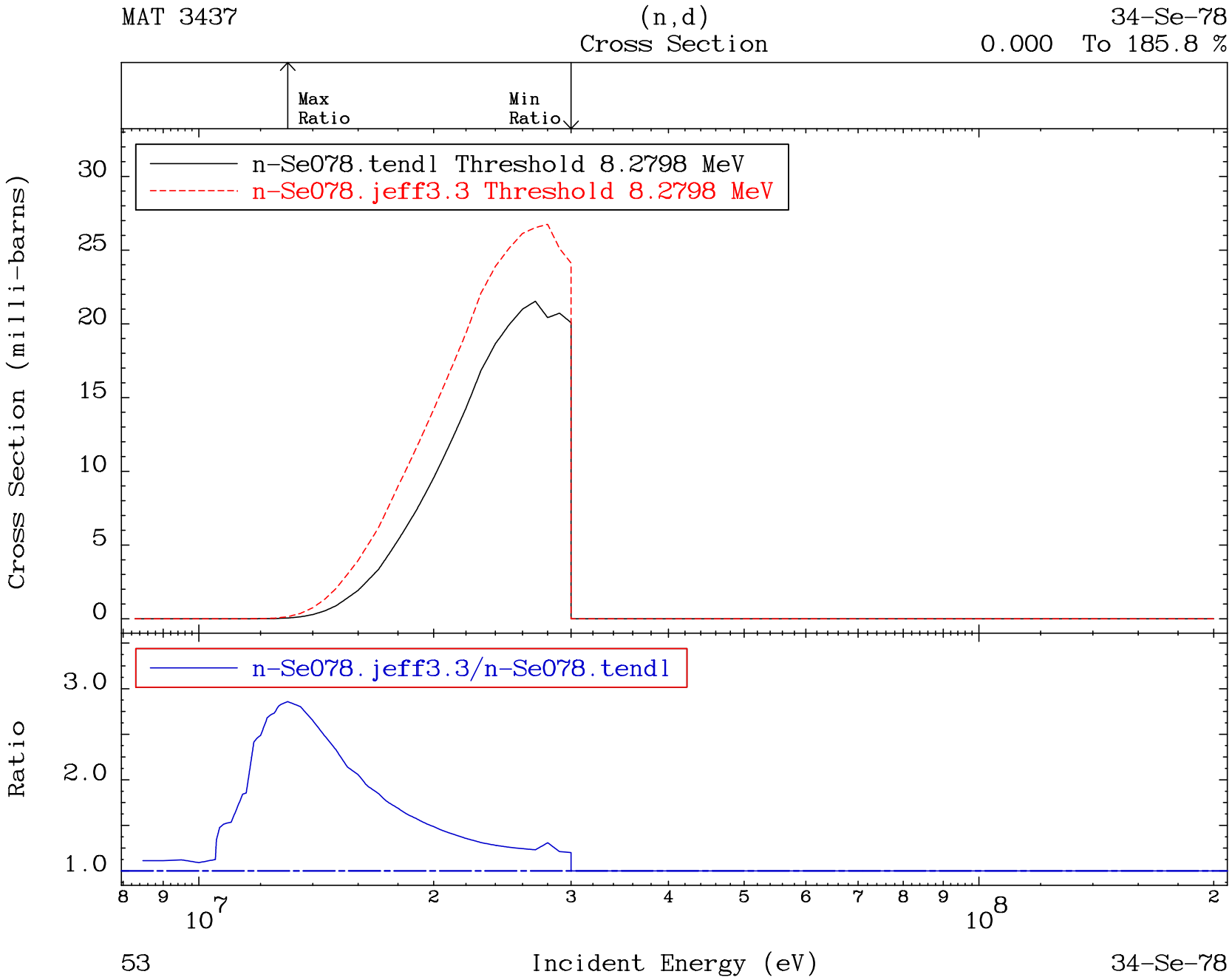

MAT 3437
MT= 79 (n,n') Level
Cross Section
34-Se-78
-60.25 To 0.000 %
Min Ratio
Max Ratio
n-Se078.tendl Threshold 2.9273 MeV
n-Se078.jeff3.3 Threshold 2.9273 MeV
Cross Section (milli-barns)
0
2
4
6
8
10
12
14
n-Se078.jeff3.3/n-Se078.tendl
Ratio
0.4
0.6
0.8
1.0
3 4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
48
Incident Energy (eV)
34-Se-78

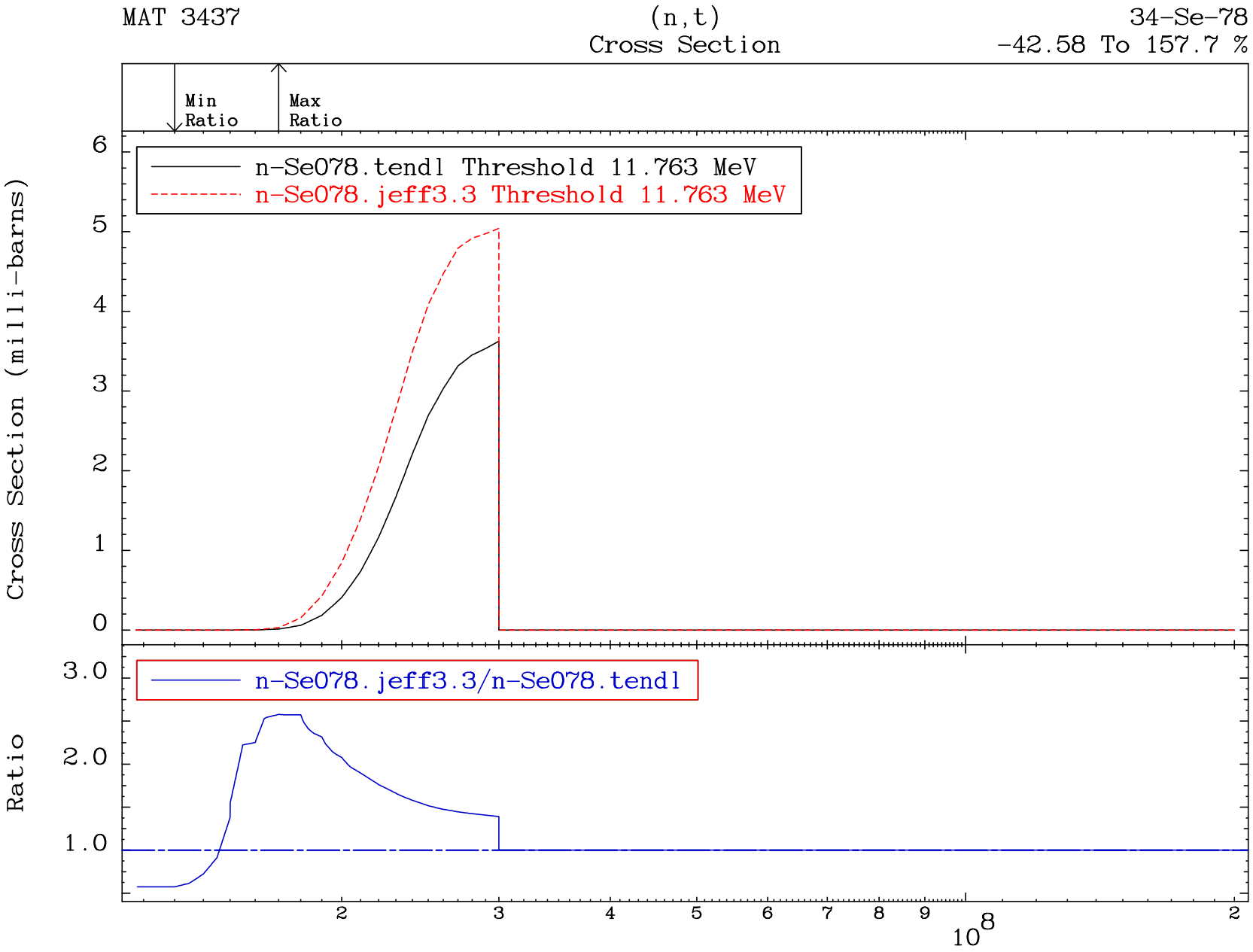

MAT 3437
MT= 80 (n,n') Level
Cross Section
34-Se-78
-42.36 To 9999. %
Min
Ratio
Max
Ratio
n-Se078.tendl Threshold 2.9357 MeV
n-Se078.jeff3.3 Threshold 2.9357 MeV
Cross Section (milli-barns)
50
40
30
20
10
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
10^6
10^4
10^2
10^0
3 4 5 6 7 8 9
10^7
2 3 4 5 6 7 8 9
10^8
2
49
Incident Energy (eV)
34-Se-78

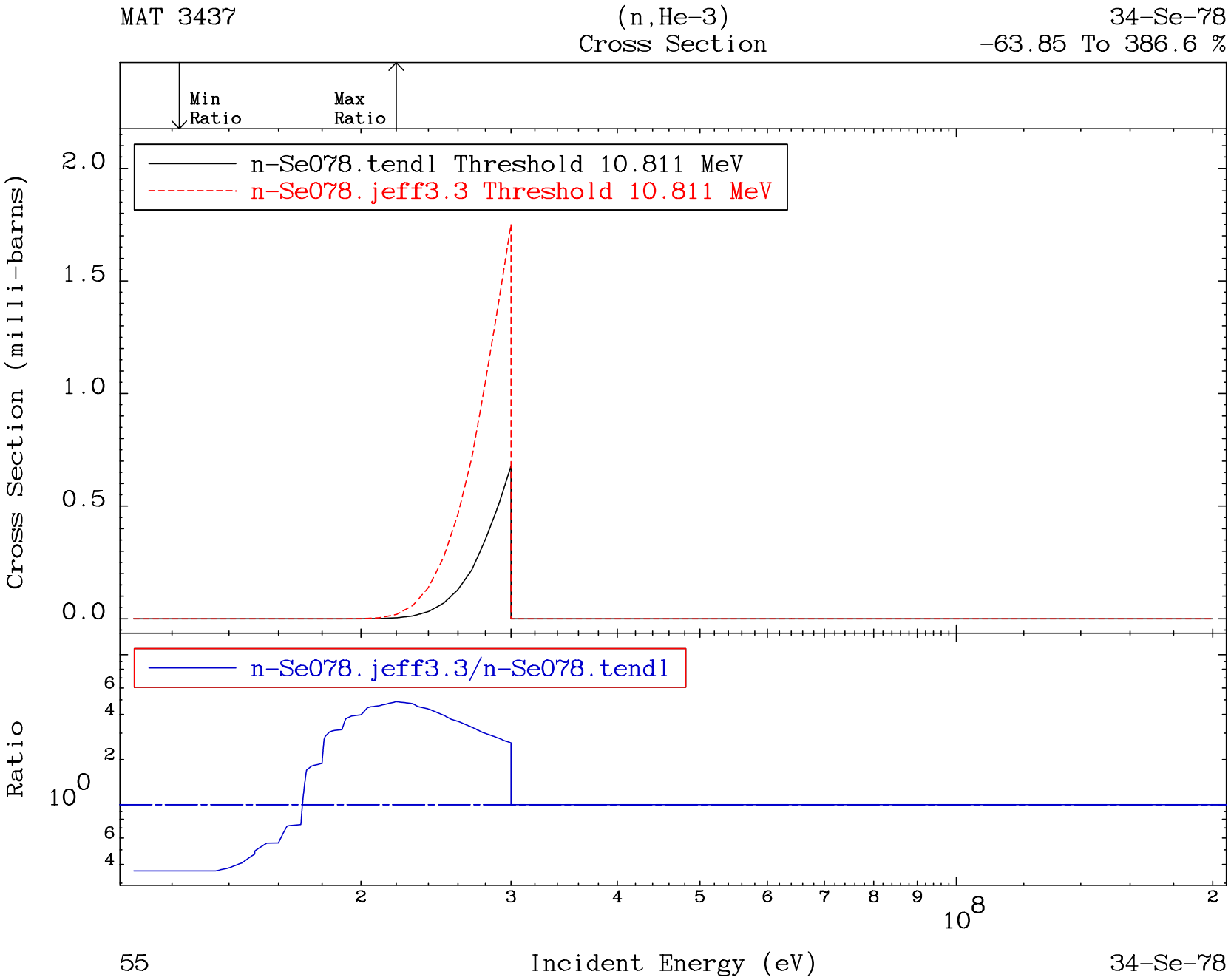

MAT 3437
(n,n') Continuum
Cross Section
34-Se-78
-21.65 To 92.59 %
Max
Ratio
Min
Ratio
n-Se078.tendl Threshold 2.9357 MeV
n-Se078.jeff3.3 Threshold 2.9357 MeV
Cross Section (barns)
2.0
1.5
1.0
0.5
0.0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
2.0
1.6
1.2
0.8
3 4 5 6 7 8 9
10^7
2 3 4 5 6 7 8 9
10^8
2
50
Incident Energy (eV)
34-Se-78

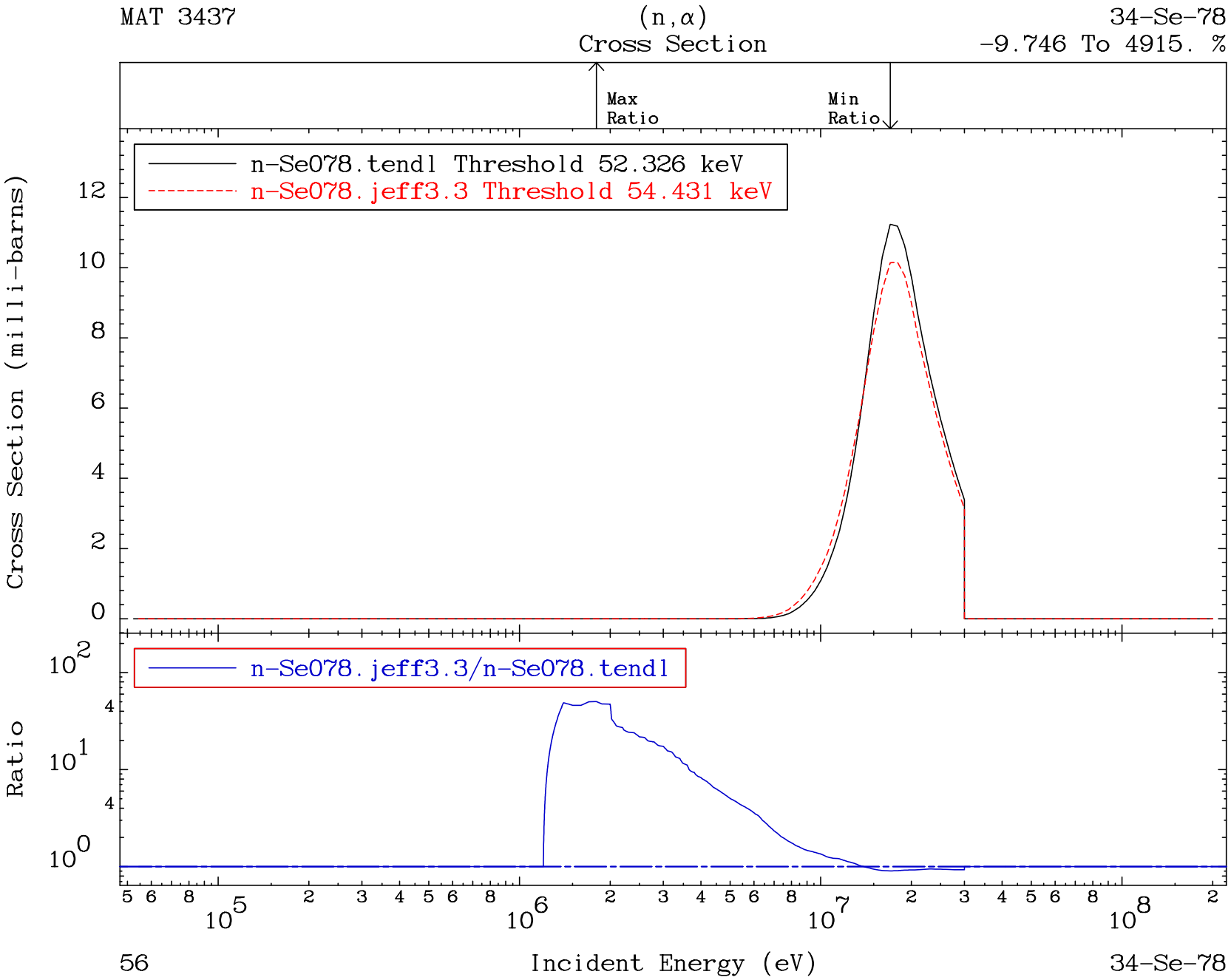

MAT 3437
(n,γ)
Cross Section
34-Se-78
-99.99 To 1269. %
Min Ratio
Max Ratio
n-Se078.tendl
n-Se078.jeff3.3
Cross Section (barns)
n-Se078.jeff3.3/n-Se078.tendl
Ratio
Incident Energy (eV)
51
34-Se-78

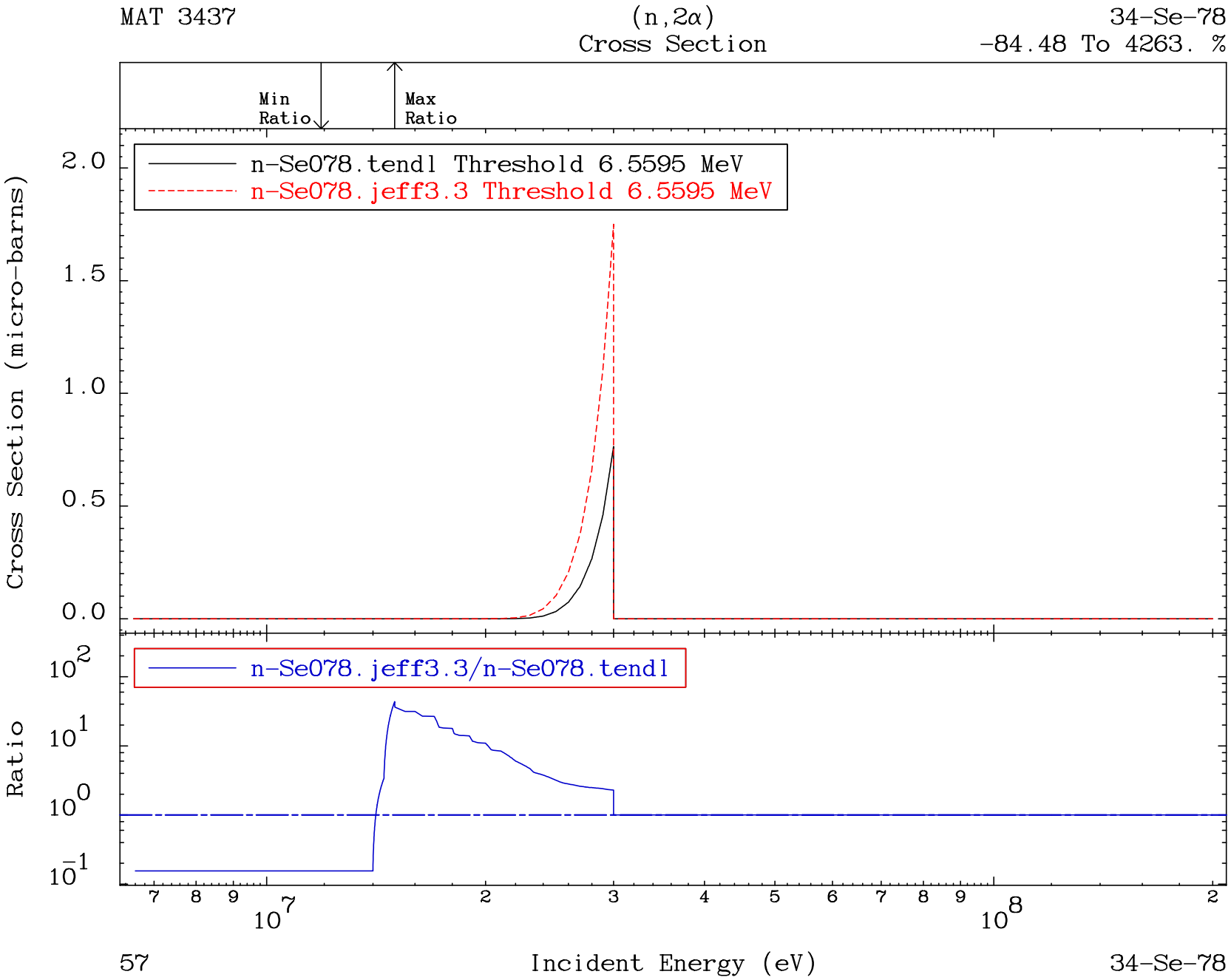

MAT 3437
(n,p)
Cross Section
34-Se-78
-10.67 To 195.8 %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 3.4710 MeV
n-Se078.jeff3.3 Threshold 3.4710 MeV
Cross Section (milli-barns)
35
30
25
20
15
10
5
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
3.0
2.0
1.0
4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
52
Incident Energy (eV)
34-Se-78

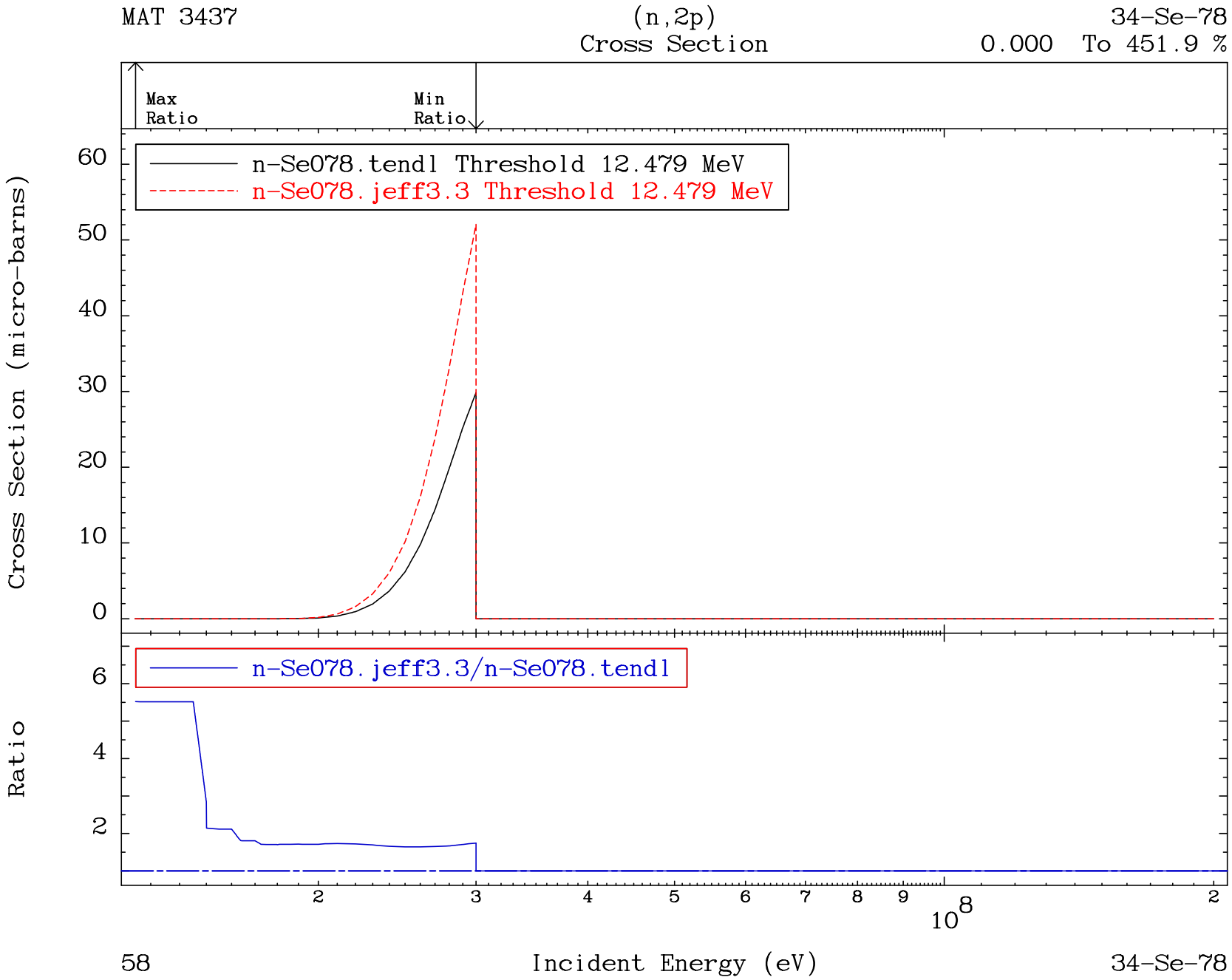

MAT 3437
(n,d)
Cross Section
34-Se-78
0.000 To 185.8 %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 8.2798 MeV
n-Se078.jeff3.3 Threshold 8.2798 MeV
Cross Section (milli-barns)
30
25
20
15
10
5
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
3.0
2.0
1.0
8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
53
Incident Energy (eV)
34-Se-78

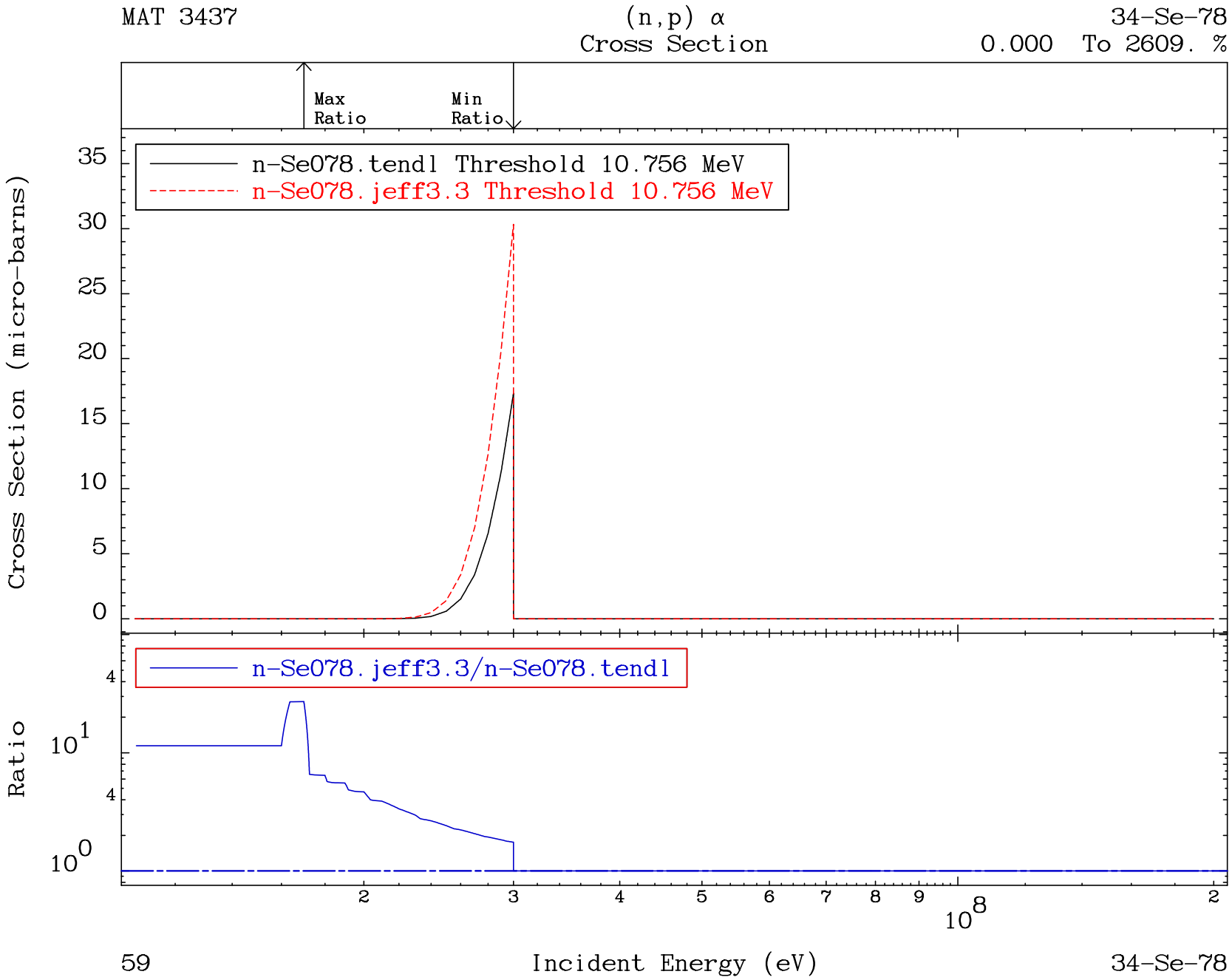

MAT 3437
(n,t)
Cross Section
34-Se-78
-42.58 To 157.7 %
Min Ratio
Max Ratio
n-Se078.tendl Threshold 11.763 MeV
n-Se078.jeff3.3 Threshold 11.763 MeV
Cross Section (milli-barns)
0
1
2
3
4
5
6
n-Se078.jeff3.3/n-Se078.tendl
Ratio
1.0
2.0
3.0
2
3
4
5
6
7
8
9
2
10^8
54
Incident Energy (eV)
34-Se-78

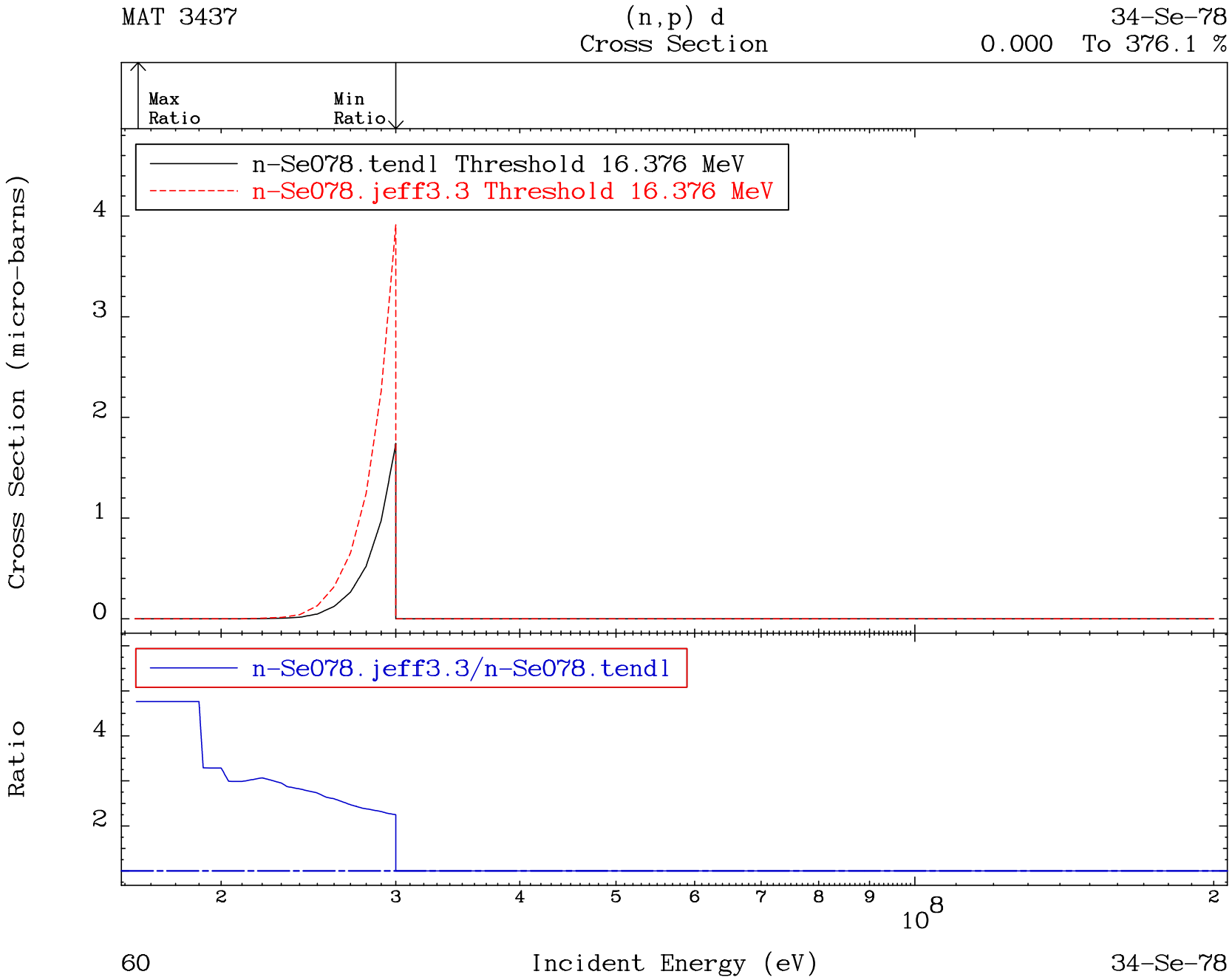

MAT 3437
(n,He-3)
Cross Section
34-Se-78
-63.85 To 386.6 %
Min Ratio
Max Ratio
n-Se078.tendl Threshold 10.811 MeV
n-Se078.jeff3.3 Threshold 10.811 MeV
Cross Section (milli-barns)
2.0
1.5
1.0
0.5
0.0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
10^0
6
4
2
6
4
2
3
4
5
6
7
8
9
10^8
2
55
Incident Energy (eV)
34-Se-78

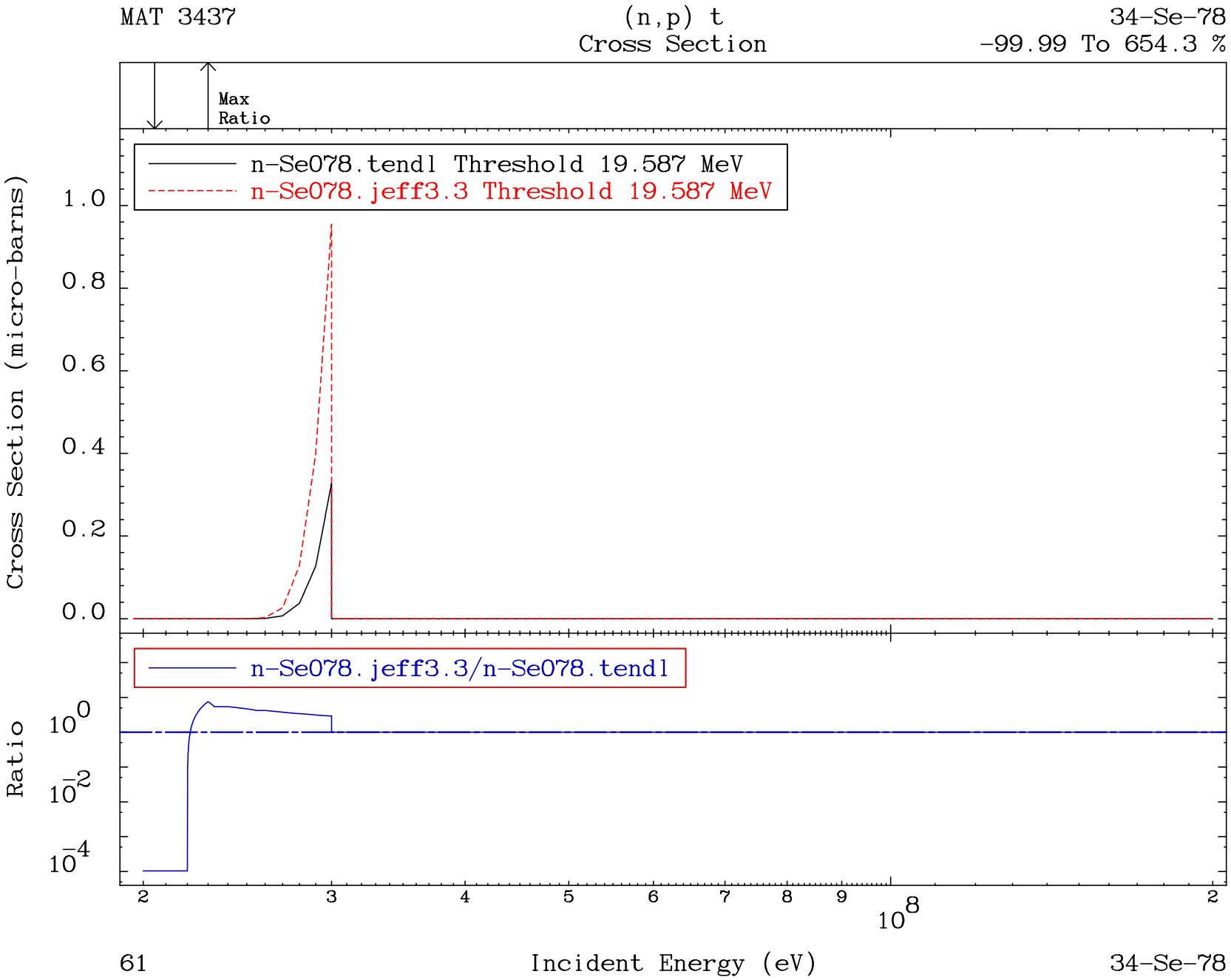

MAT 3437
(n,α)
Cross Section
34-Se-78
-9.746 To 4915. %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 52.326 keV
n-Se078.jeff3.3 Threshold 54.431 keV
Cross Section (milli-barns)
n-Se078.jeff3.3/n-Se078.tendl
Ratio
Incident Energy (eV)
56
34-Se-78

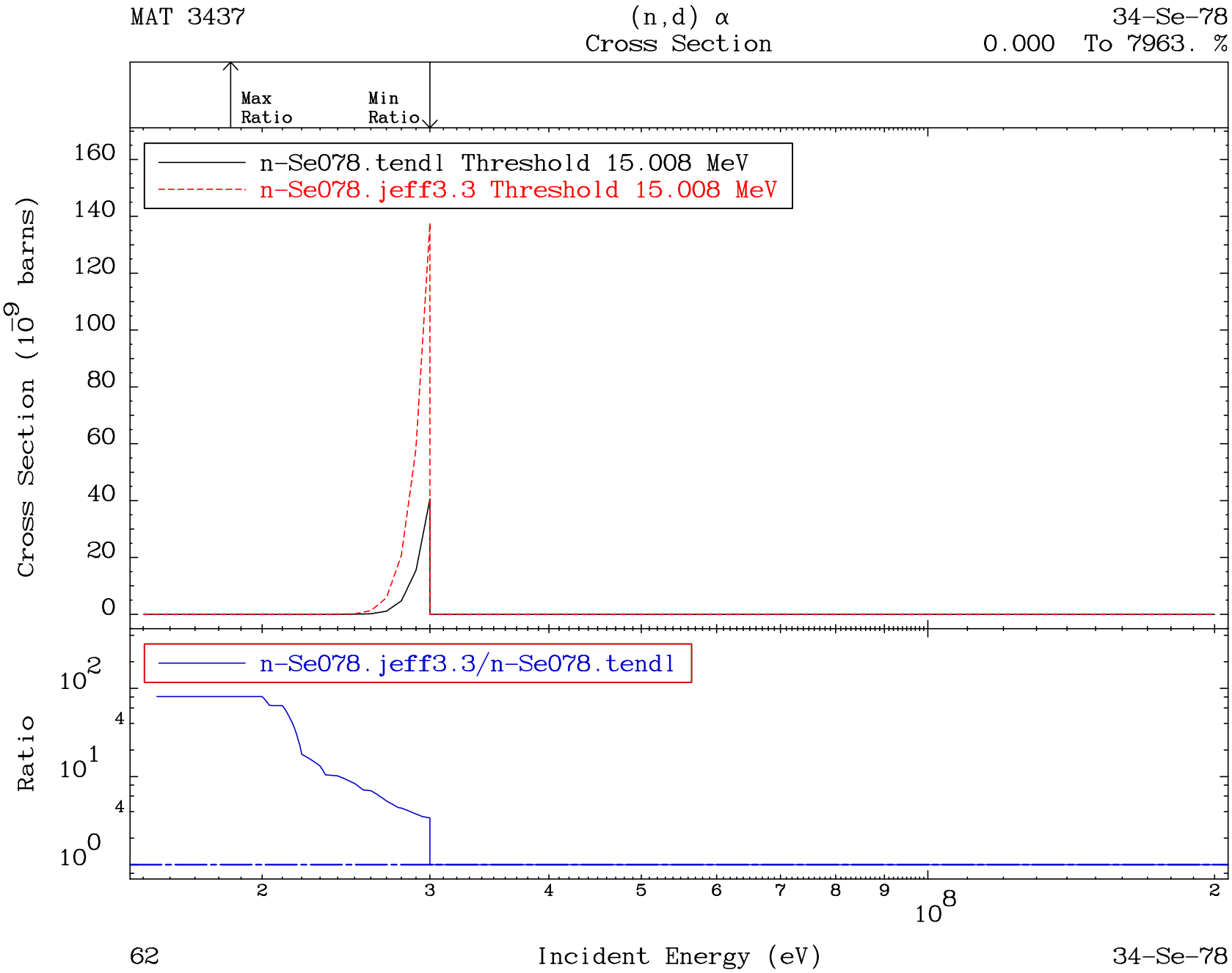

MAT 3437
(n,2α)
Cross Section
34-Se-78
-84.48 To 4263. %
Min Ratio
Max Ratio
n-Se078.tendl Threshold 6.5595 MeV
n-Se078.jeff3.3 Threshold 6.5595 MeV
Cross Section (micro-barns)
2.0
1.5
1.0
0.5
0.0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
10^2
10^1
10^0
10^-1
7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
57
Incident Energy (eV)
34-Se-78

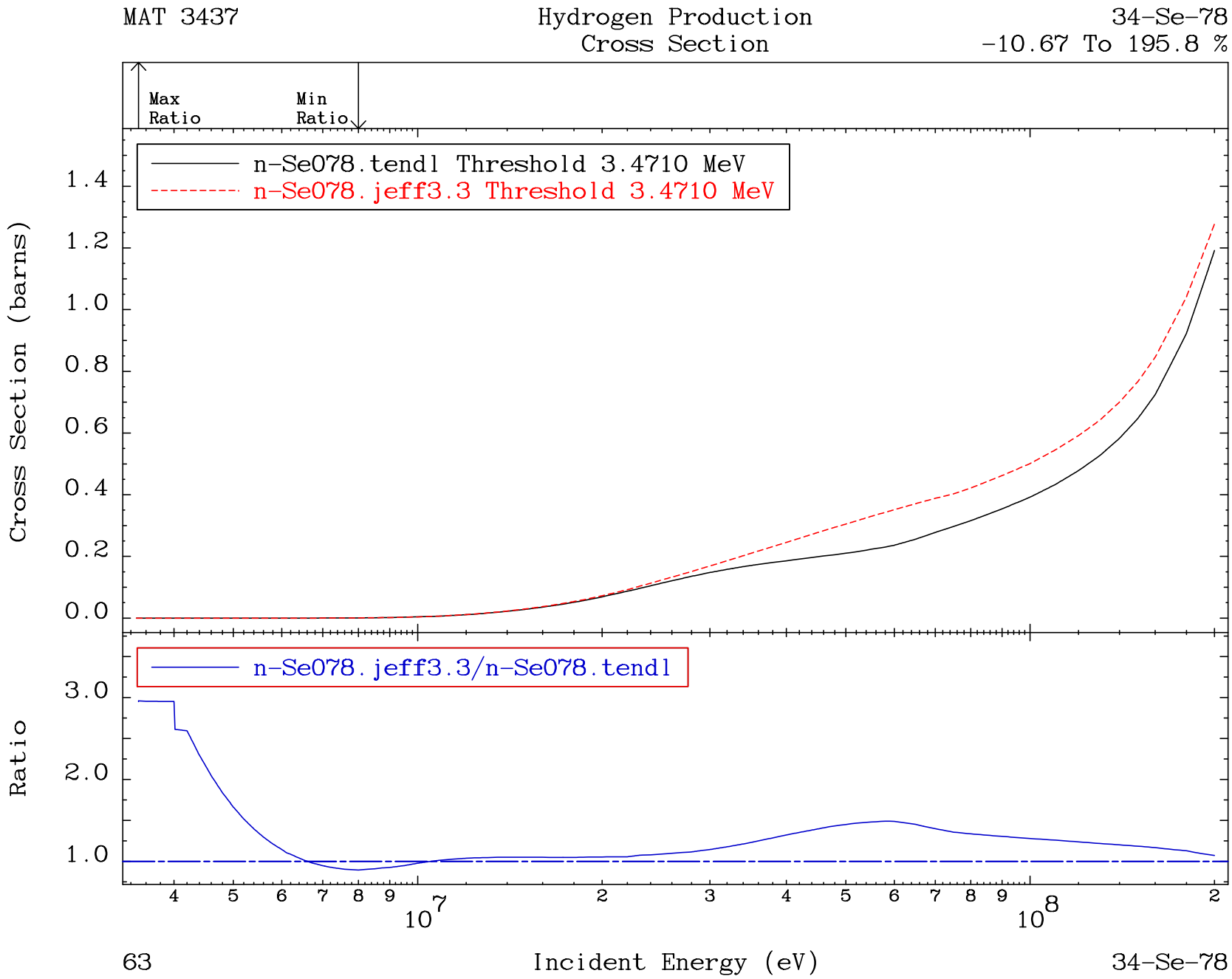

MAT 3437
(n,2p)
Cross Section
34-Se-78
0.000 To 451.9 %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 12.479 MeV
n-Se078.jeff3.3 Threshold 12.479 MeV
Cross Section (micro-barns)
60
50
40
30
20
10
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
6
4
2
2
3
4
5
6
7
8
9
10^8
2
58
Incident Energy (eV)
34-Se-78

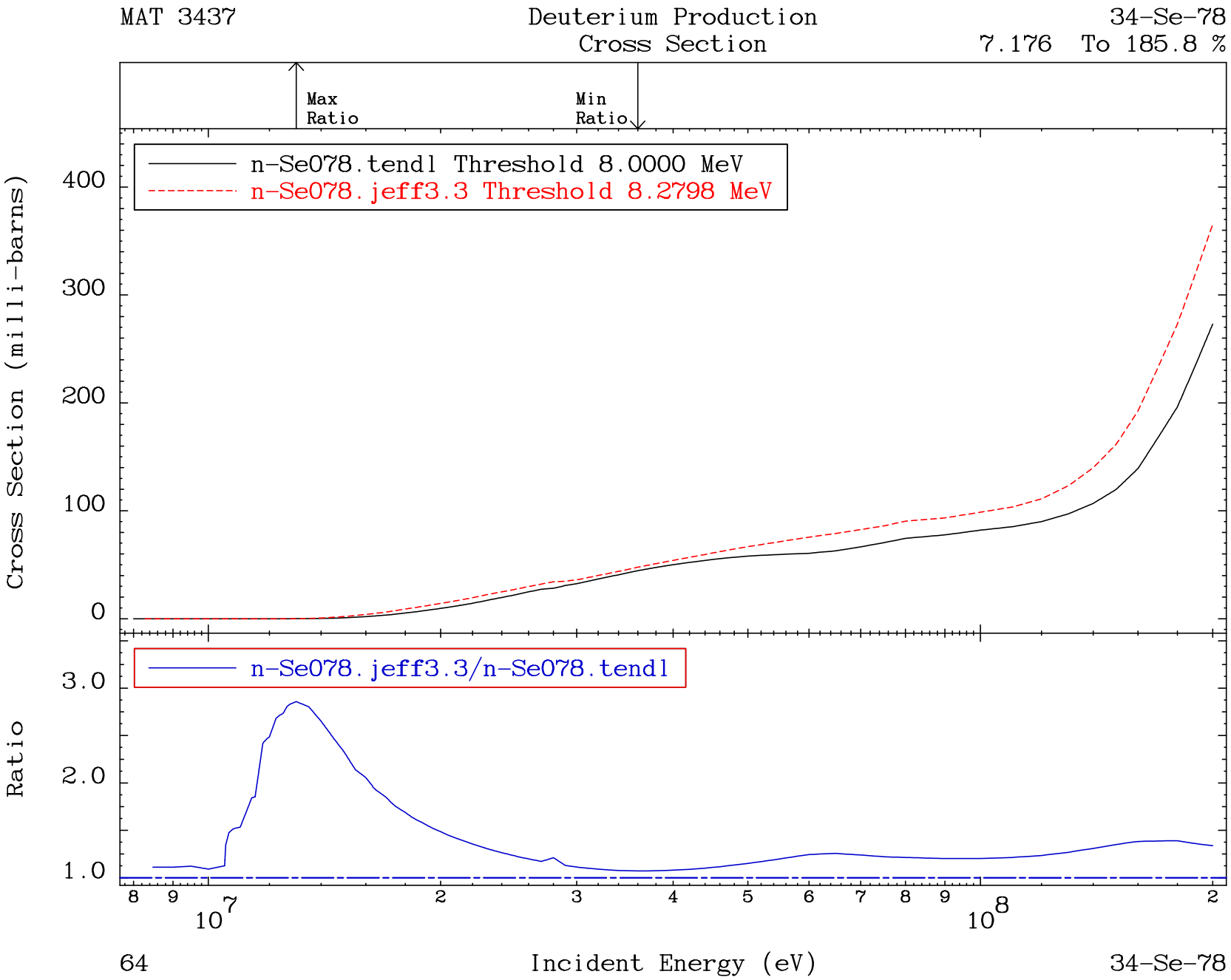

MAT 3437
(n,p) α
Cross Section
34-Se-78
0.000 To 2609. %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 10.756 MeV
n-Se078.jeff3.3 Threshold 10.756 MeV
Cross Section (micro-barns)
35
30
25
20
15
10
5
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
10^1
4
10^0
4
2
3
4
5
6
7
8
9
10^8
2
59
Incident Energy (eV)
34-Se-78

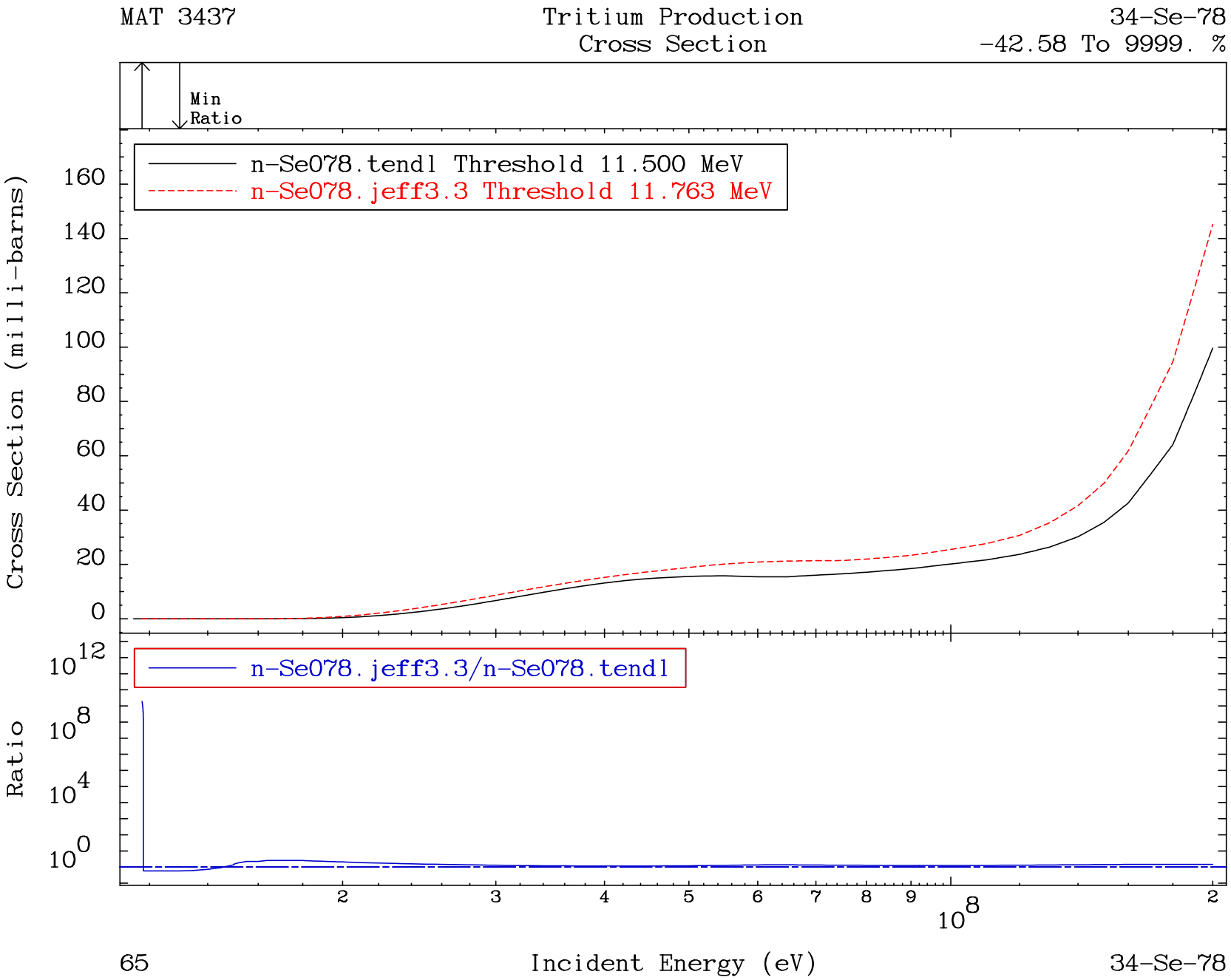

MAT 3437
(n,p) d
Cross Section
34-Se-78
0.000 To 376.1 %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 16.376 MeV
n-Se078.jeff3.3 Threshold 16.376 MeV
Cross Section (micro-barns)
0
1
2
3
4
n-Se078.jeff3.3/n-Se078.tendl
Ratio
2
4
2
3
4
5
6
7
8
9
10^8
2
60
Incident Energy (eV)
34-Se-78

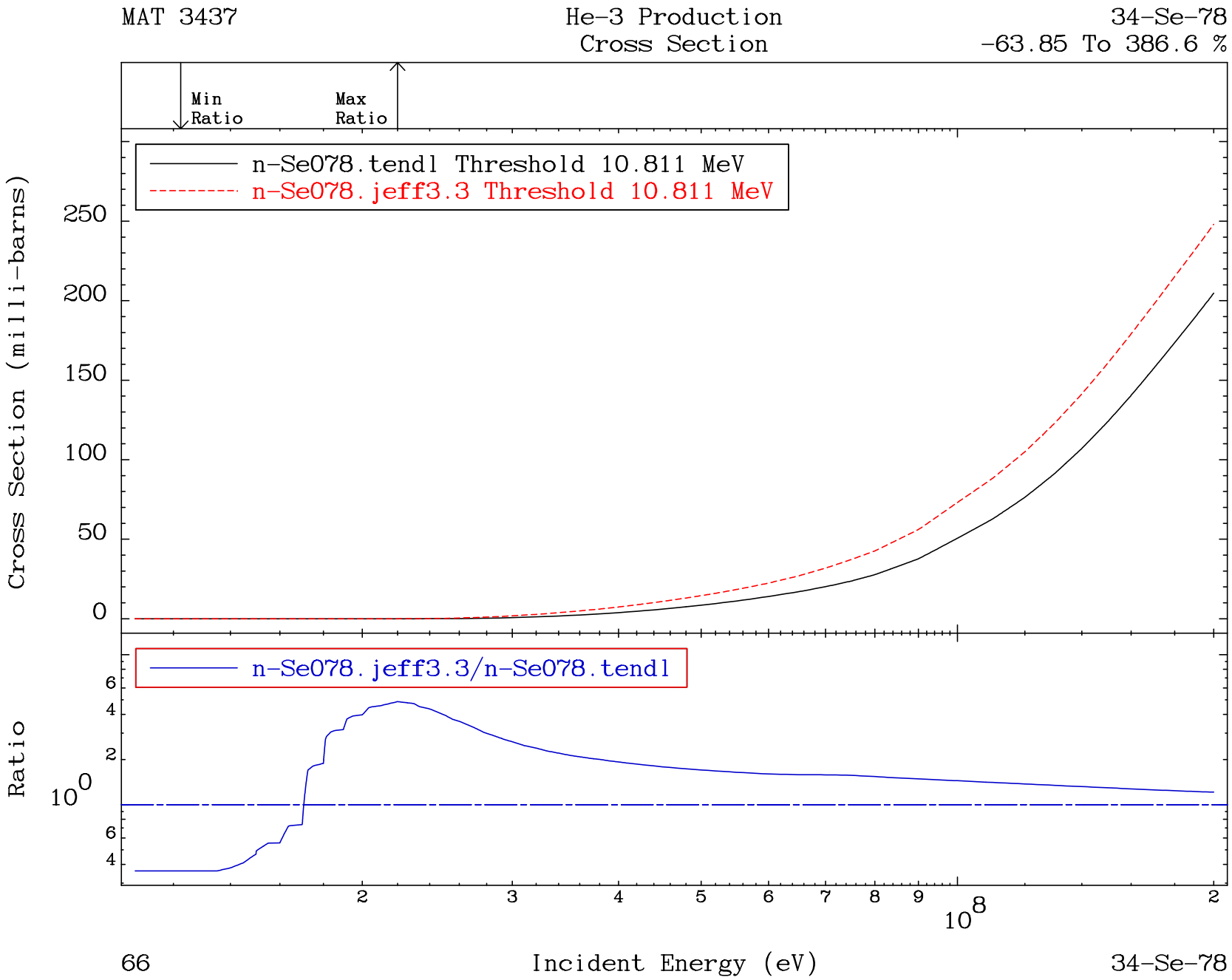

MAT 3437
(n,p) t
Cross Section
34-Se-78
-99.99 To 654.3 %
Max
Ratio
n-Se078.tendl Threshold 19.587 MeV
n-Se078.jeff3.3 Threshold 19.587 MeV
Cross Section (micro-barns)
1.0
0.8
0.6
0.4
0.2
0.0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
10^0
10^-2
10^-4
2
3
4
5
6
7
8
9
10^8
2
61
Incident Energy (eV)
34-Se-78

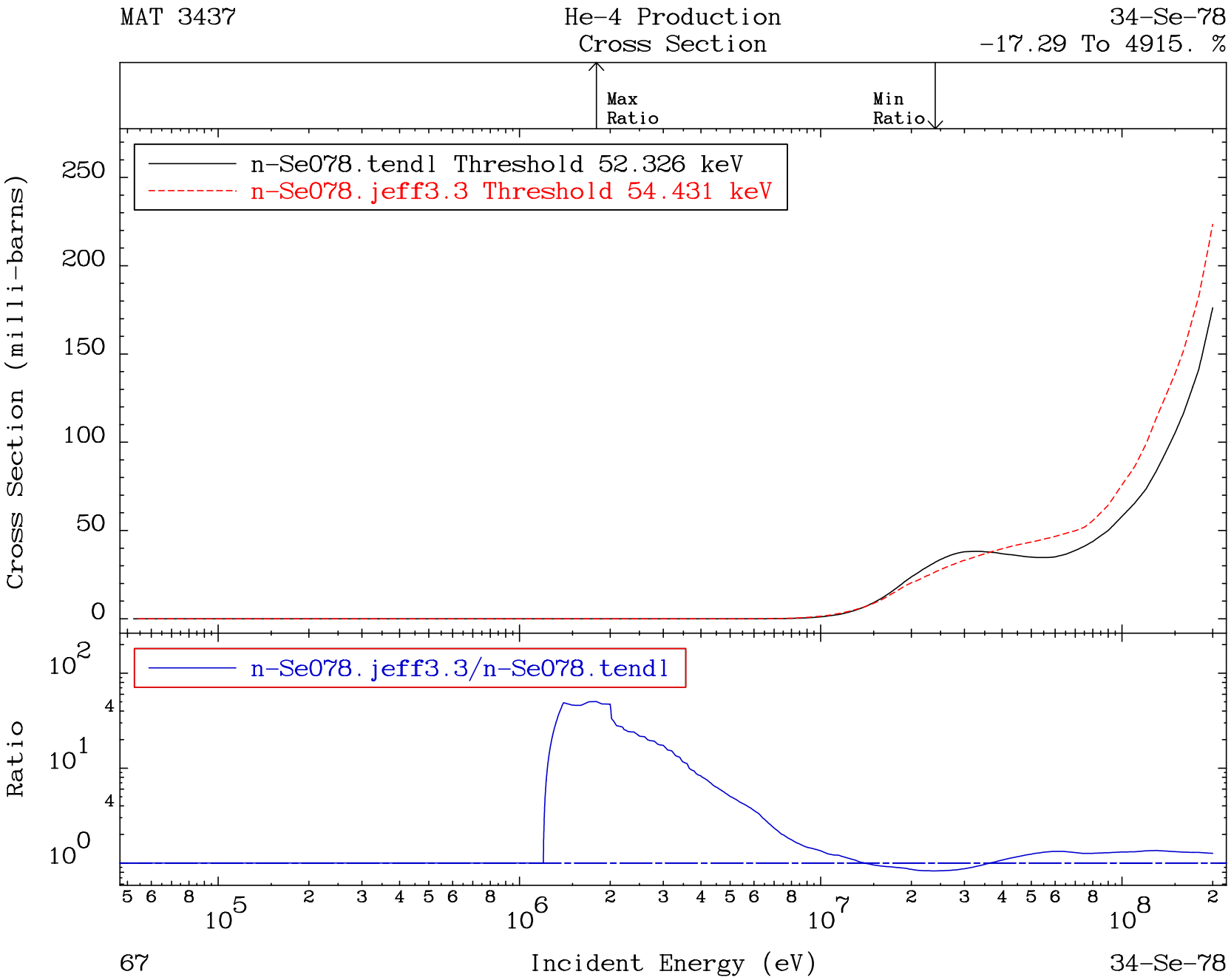

MAT 3437
(n,d) α
Cross Section
34-Se-78
0.000 To 7963. %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 15.008 MeV
n-Se078.jeff3.3 Threshold 15.008 MeV
Cross Section (10^{-9} barns)
160
140
120
100
80
60
40
20
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
10^{2}
10^{1}
10^{0}
2
3
4
5
6
7
8
9
10^{8}
2
62
Incident Energy (eV)
34-Se-78

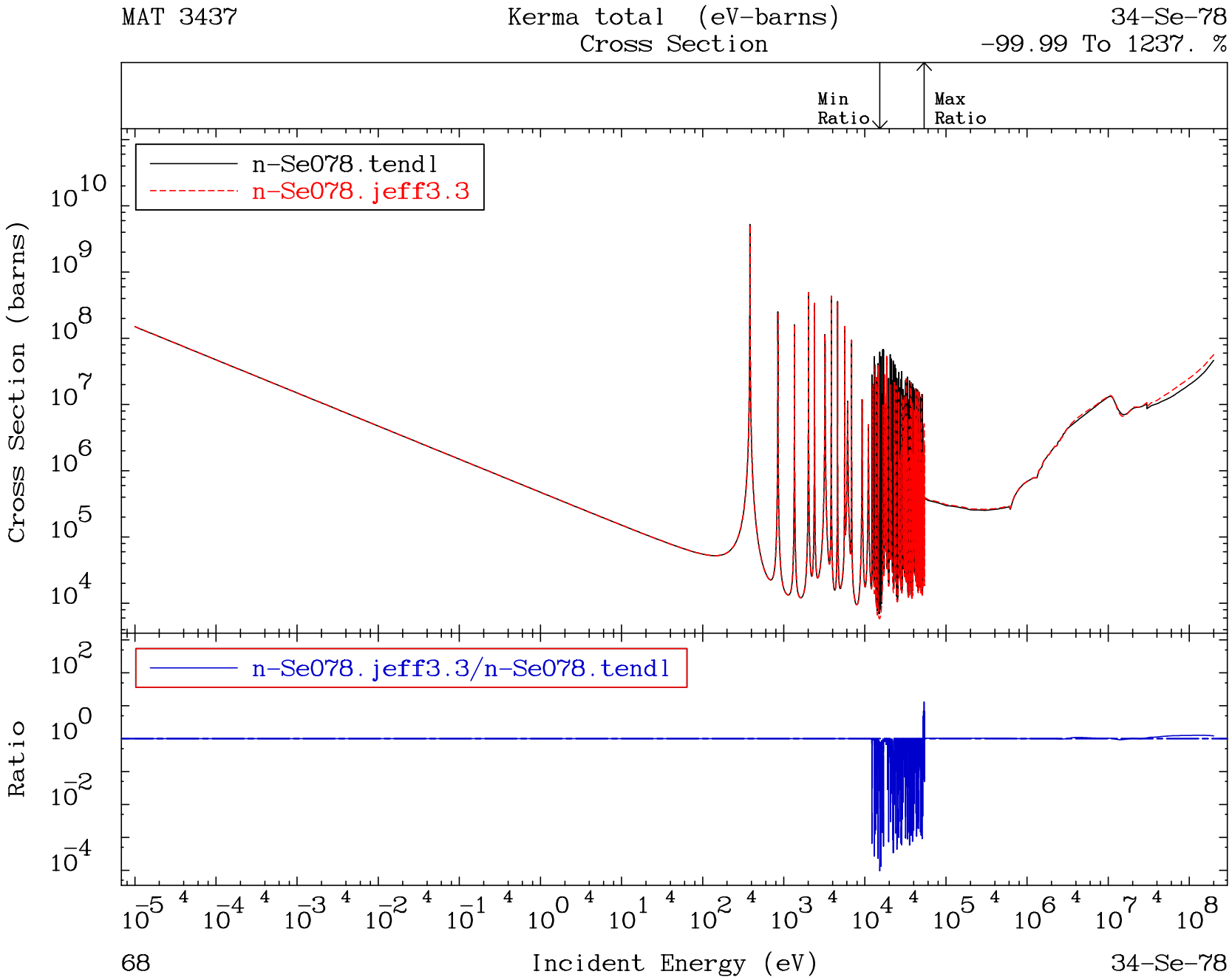

MAT 3437
Hydrogen Production
Cross Section
34-Se-78
-10.67 To 195.8 %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 3.4710 MeV
n-Se078.jeff3.3 Threshold 3.4710 MeV
Cross Section (barns)
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
n-Se078.jeff3.3/n-Se078.tendl
Ratio
1.0
2.0
3.0
4 5 6 7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
63
Incident Energy (eV)
34-Se-78

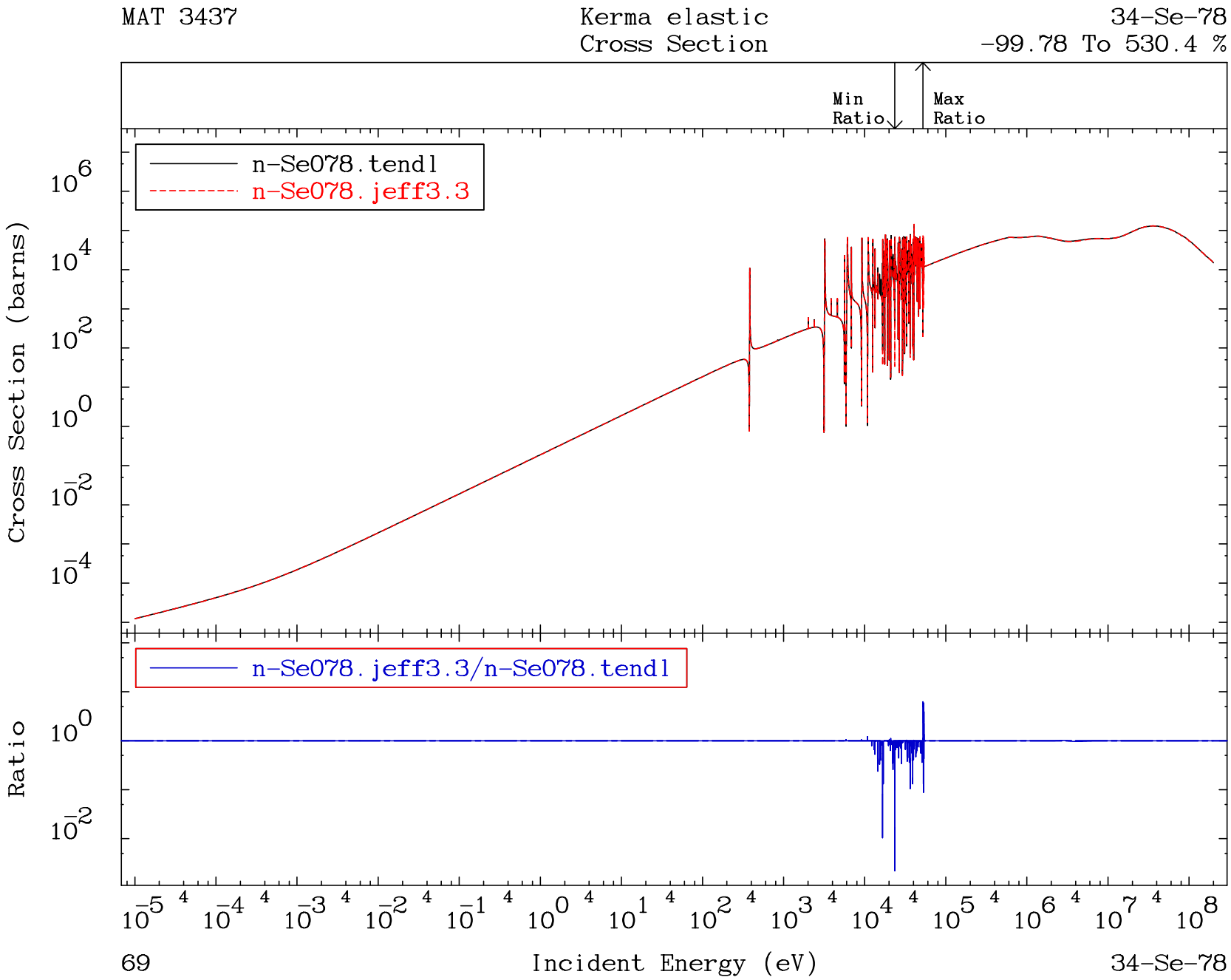

MAT 3437
Deuterium Production
Cross Section
34-Se-78
7.176 To 185.8 %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 8.0000 MeV
n-Se078.jeff3.3 Threshold 8.2798 MeV
Cross Section (milli-barns)
400
300
200
100
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
3.0
2.0
1.0
8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
64
Incident Energy (eV)
34-Se-78

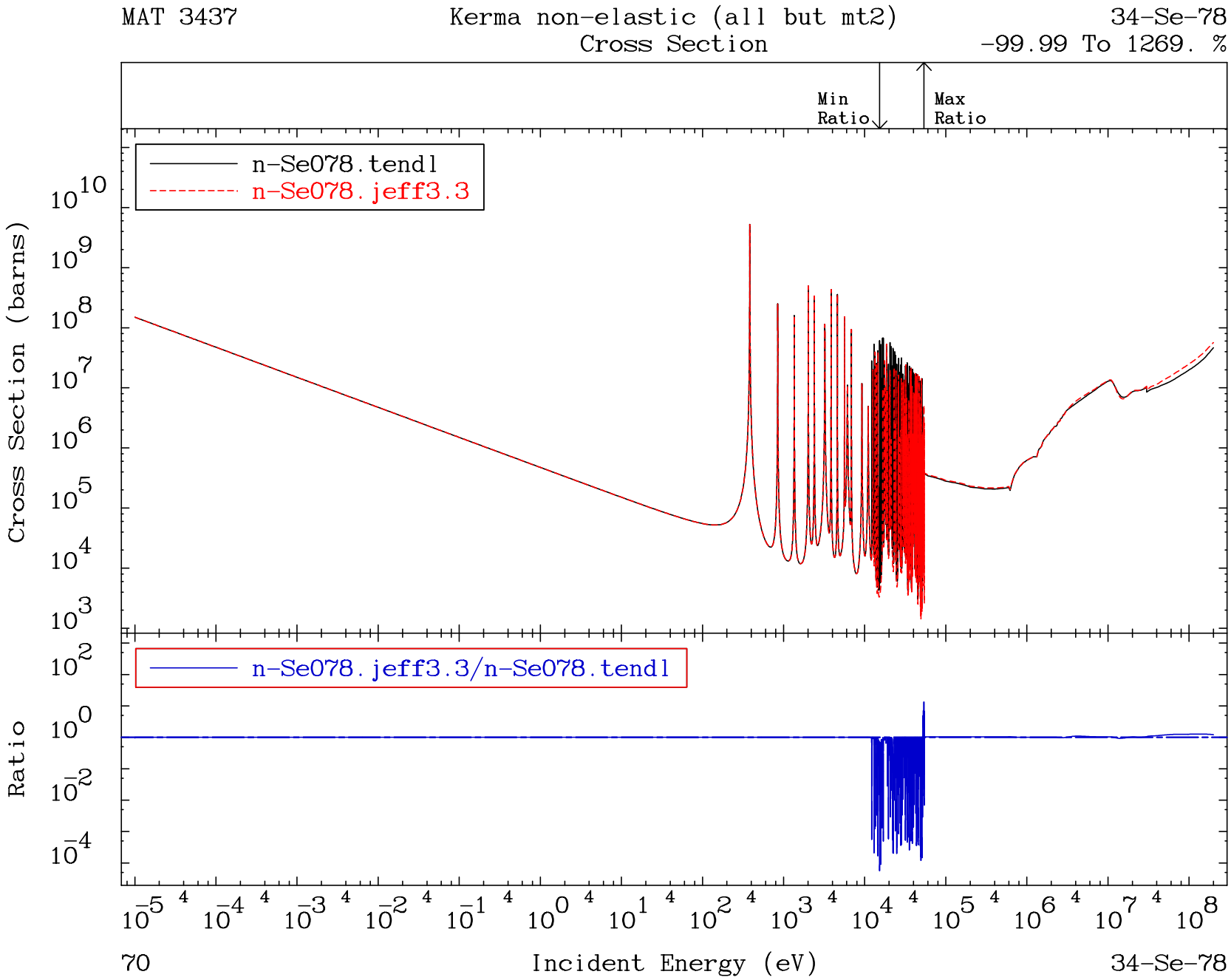

MAT 3437
Tritium Production
Cross Section
34-Se-78
-42.58 To 9999. %
Min
Ratio
n-Se078.tendl Threshold 11.500 MeV
n-Se078.jeff3.3 Threshold 11.763 MeV
Cross Section (milli-barns)
160
140
120
100
80
60
40
20
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
10^12
10^8
10^4
10^0
2
3
4
5
6
7
8
9
10^8
2
65
Incident Energy (eV)
34-Se-78

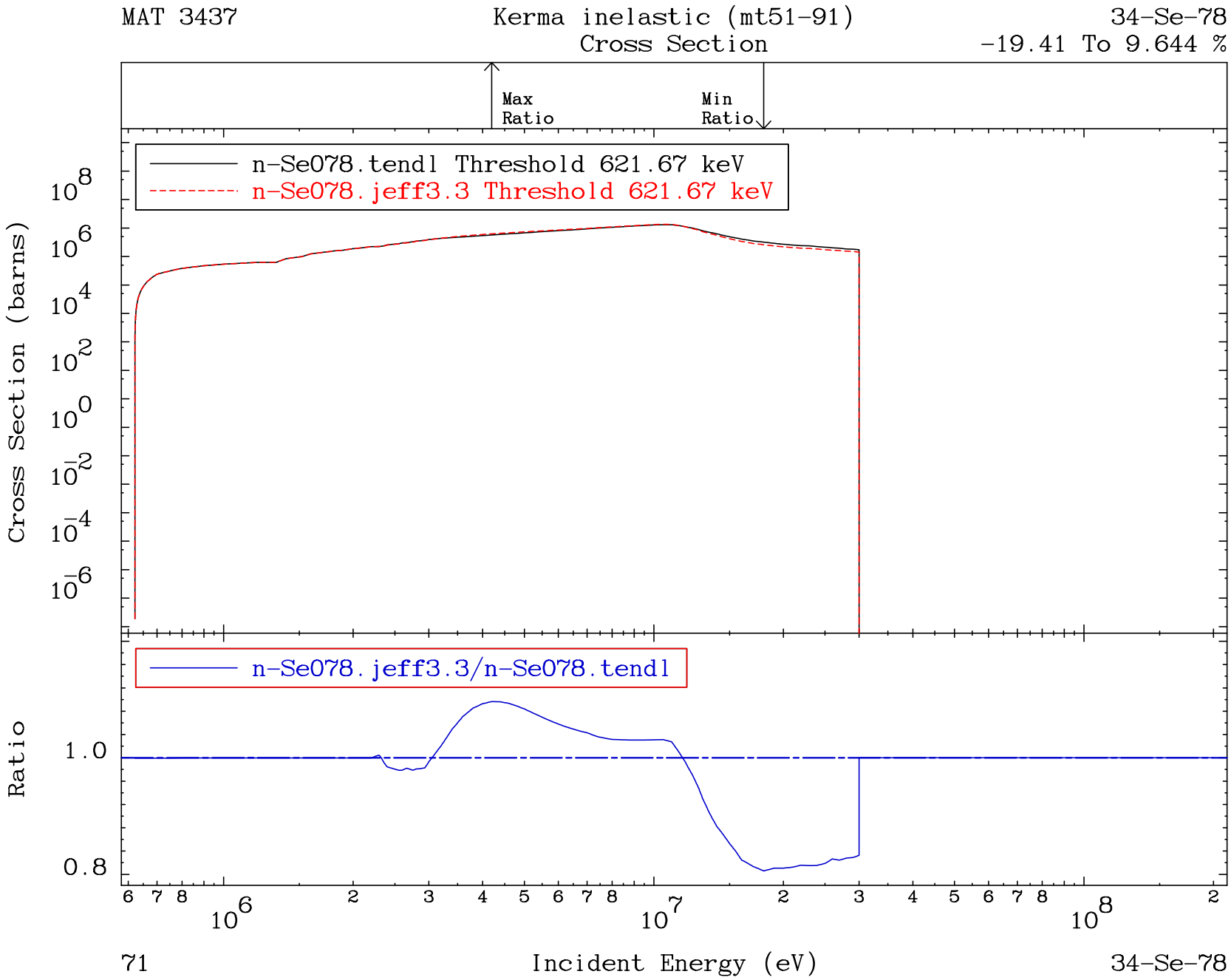

MAT 3437
He-3 Production
Cross Section
34-Se-78
-63.85 To 386.6 %
Min Ratio
Max Ratio
n-Se078.tendl Threshold 10.811 MeV
n-Se078.jeff3.3 Threshold 10.811 MeV
Cross Section (milli-barns)
250
200
150
100
50
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
6
4
2
10^0
6
4
2
3
4
5
6
7
8
9
10^8
2
66
Incident Energy (eV)
34-Se-78

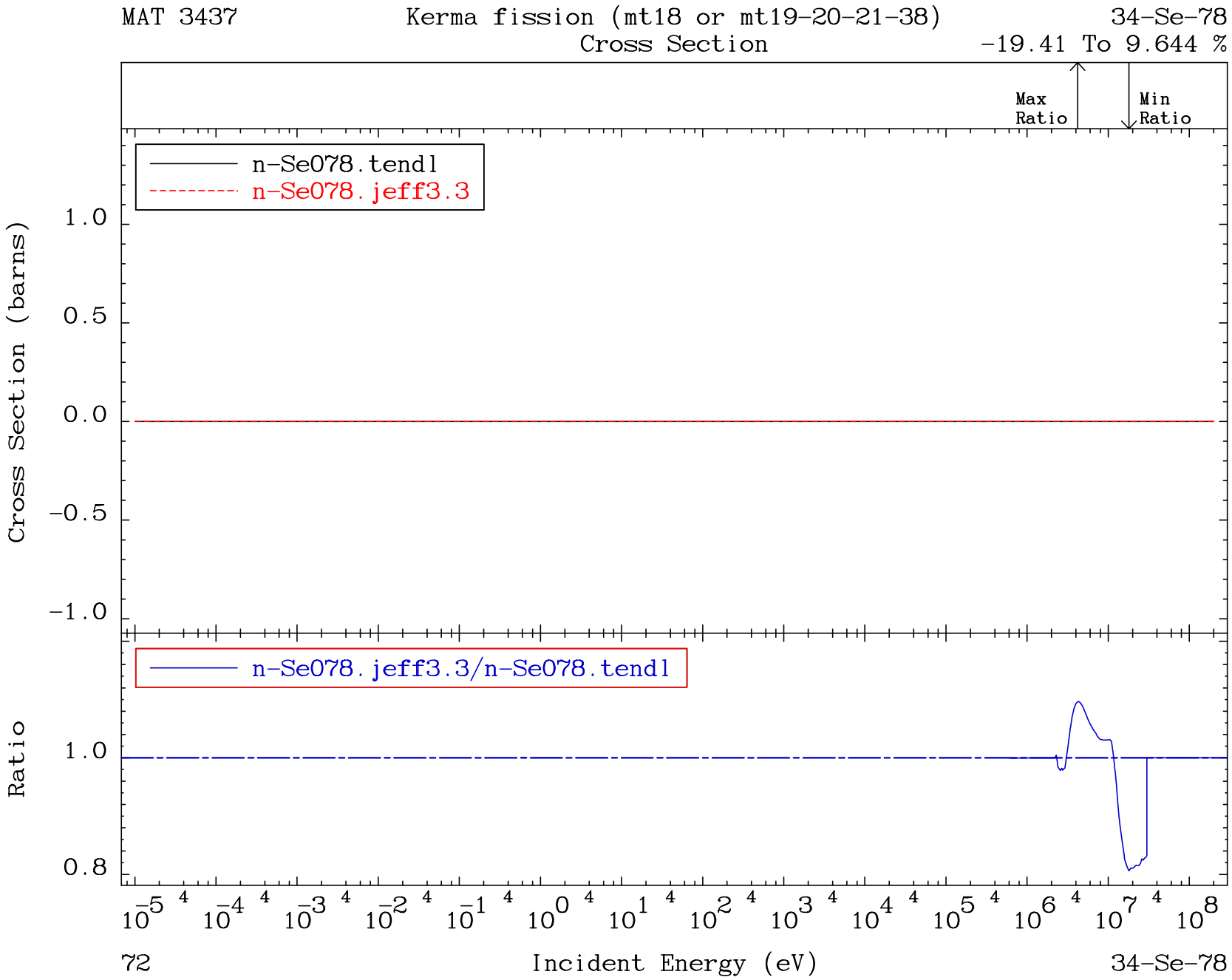

MAT 3437
He-4 Production
Cross Section
34-Se-78
-17.29 To 4915. %
Max
Ratio
Min
Ratio
n-Se078.tendl Threshold 52.326 keV
n-Se078.jeff3.3 Threshold 54.431 keV
Cross Section (milli-barns)
250
200
150
100
50
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
10^2
10^1
10^0
4
4
5 6 8 10^5 2 3 4 5 6 8 10^6 2 3 4 5 6 8 10^7 2 3 4 5 6 8 10^8 2
67
Incident Energy (eV)
34-Se-78

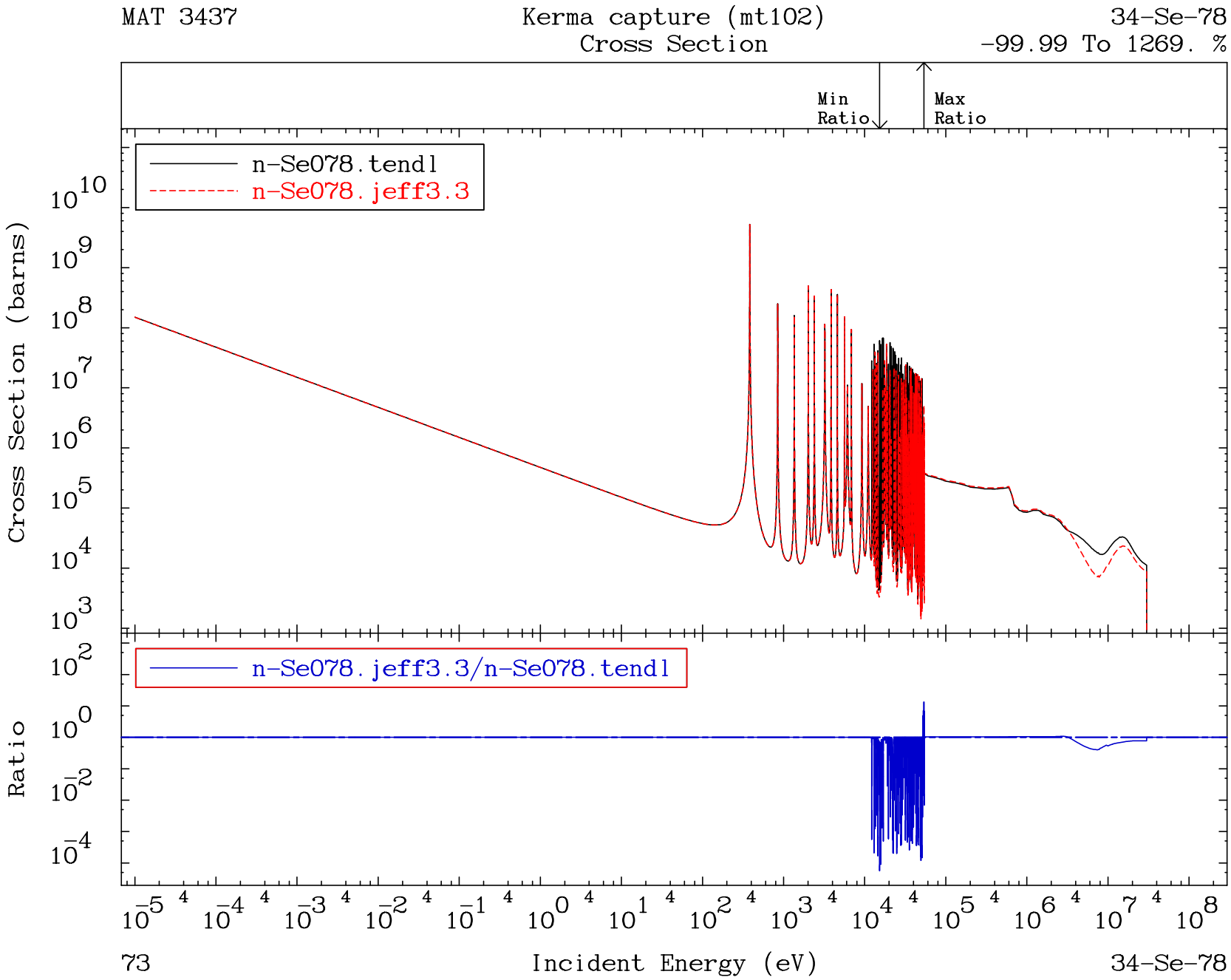

MAT 3437
Kerma total (eV-barns)
Cross Section
34-Se-78
-99.99 To 1237. %
Min Ratio
Max Ratio
n-Se078.tendl
n-Se078.jeff3.3
Cross Section (barns)
n-Se078.jeff3.3/n-Se078.tendl
Ratio
Incident Energy (eV)
68
34-Se-78

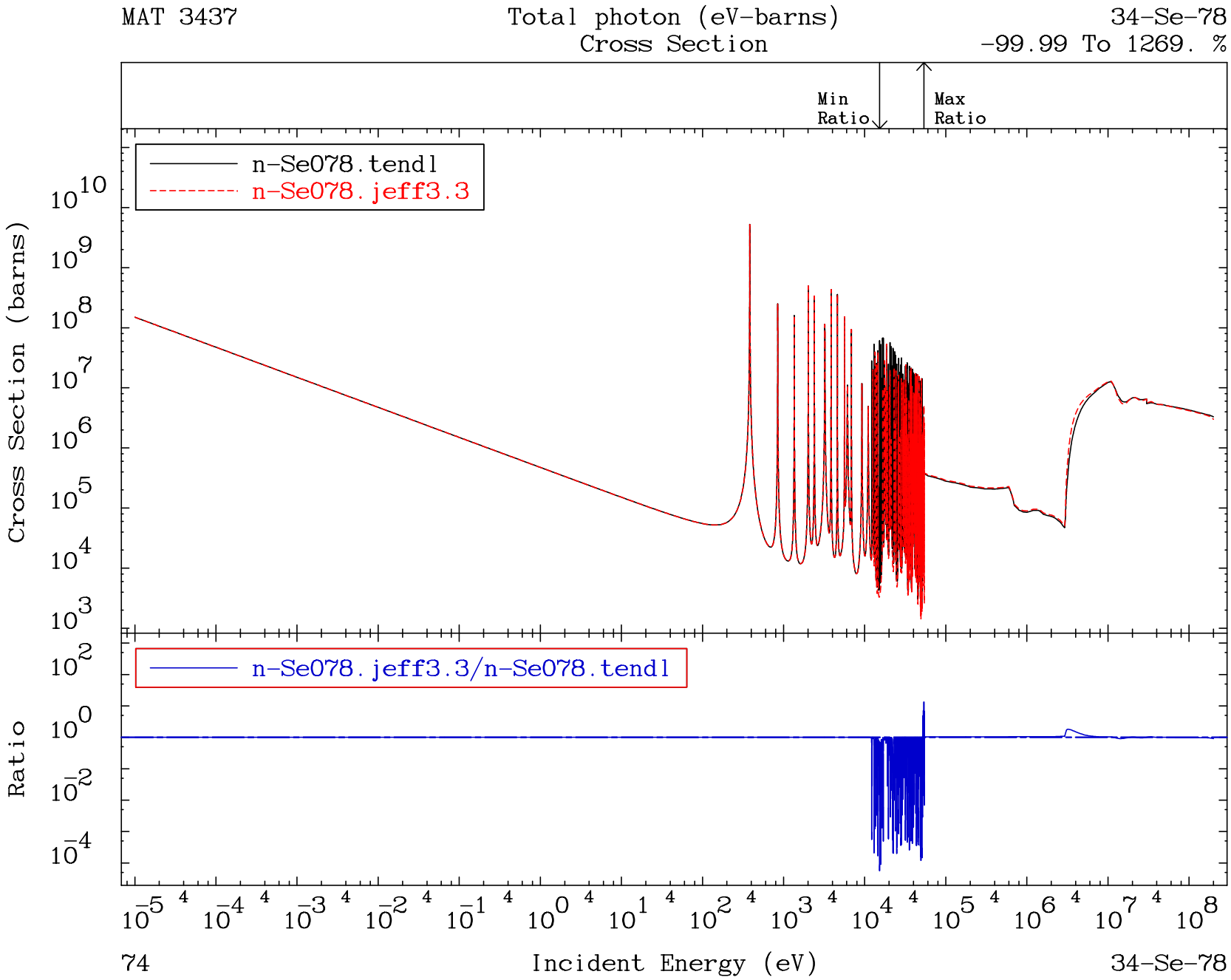

MAT 3437
Kerma elastic
Cross Section
34-Se-78
-99.78 To 530.4 %
Min Ratio
Max Ratio
n-Se078.tendl
n-Se078.jeff3.3
Cross Section (barns)
n-Se078.jeff3.3/n-Se078.tendl
Ratio
Incident Energy (eV)
69
34-Se-78

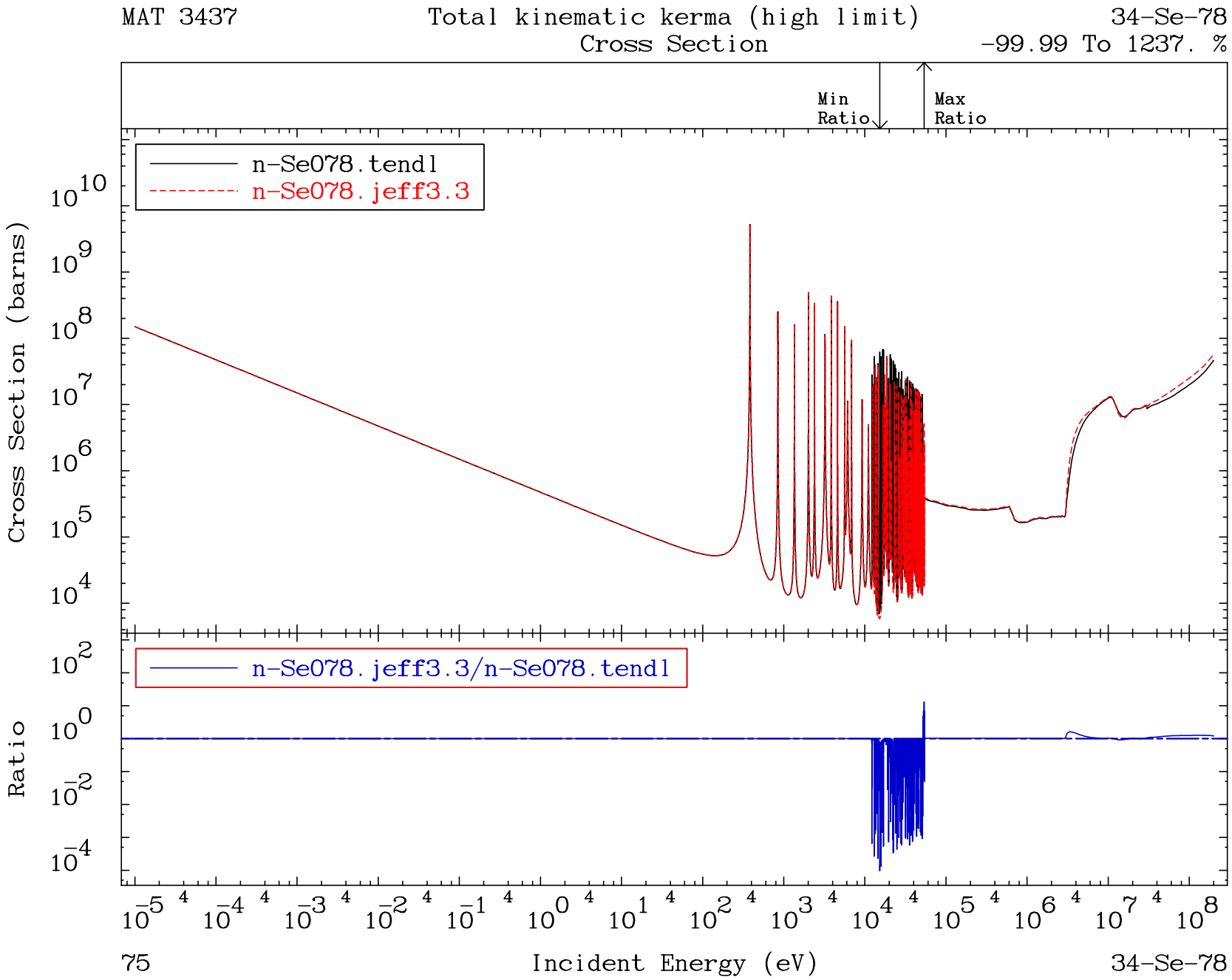

MAT 3437
Kerma non-elastic (all but mt2)
Cross Section
34-Se-78
-99.99 To 1269. %
Min Ratio
Max Ratio
n-Se078.tendl
n-Se078.jeff3.3
Cross Section (barns)
n-Se078.jeff3.3/n-Se078.tendl
Ratio
Incident Energy (eV)
70
34-Se-78

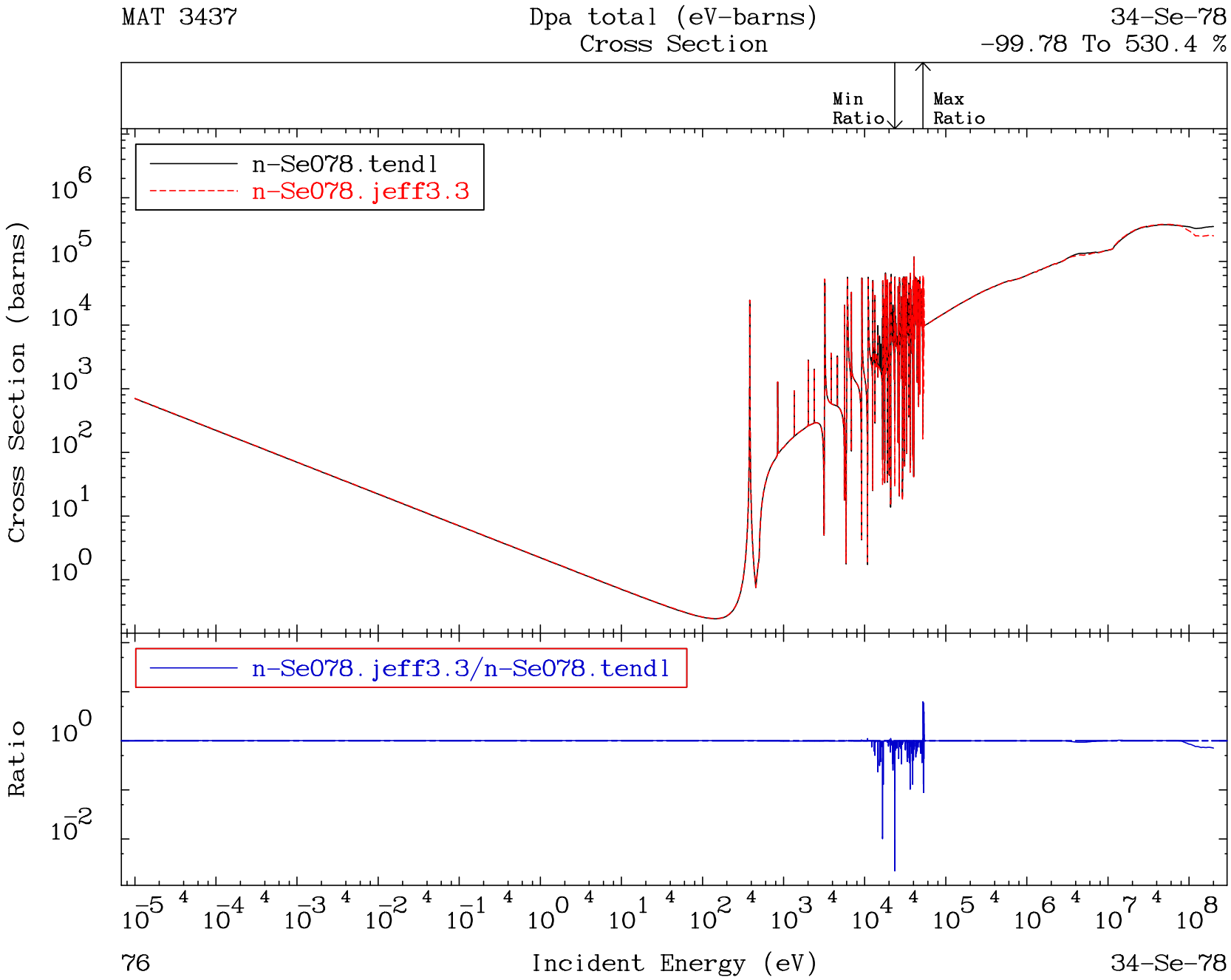

MAT 3437
Kerma inelastic (mt51-91)
Cross Section
34-Se-78
-19.41 To 9.644 %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 621.67 keV
n-Se078.jeff3.3 Threshold 621.67 keV
Cross Section (barns)
n-Se078.jeff3.3/n-Se078.tendl
Ratio
Incident Energy (eV)
71
34-Se-78

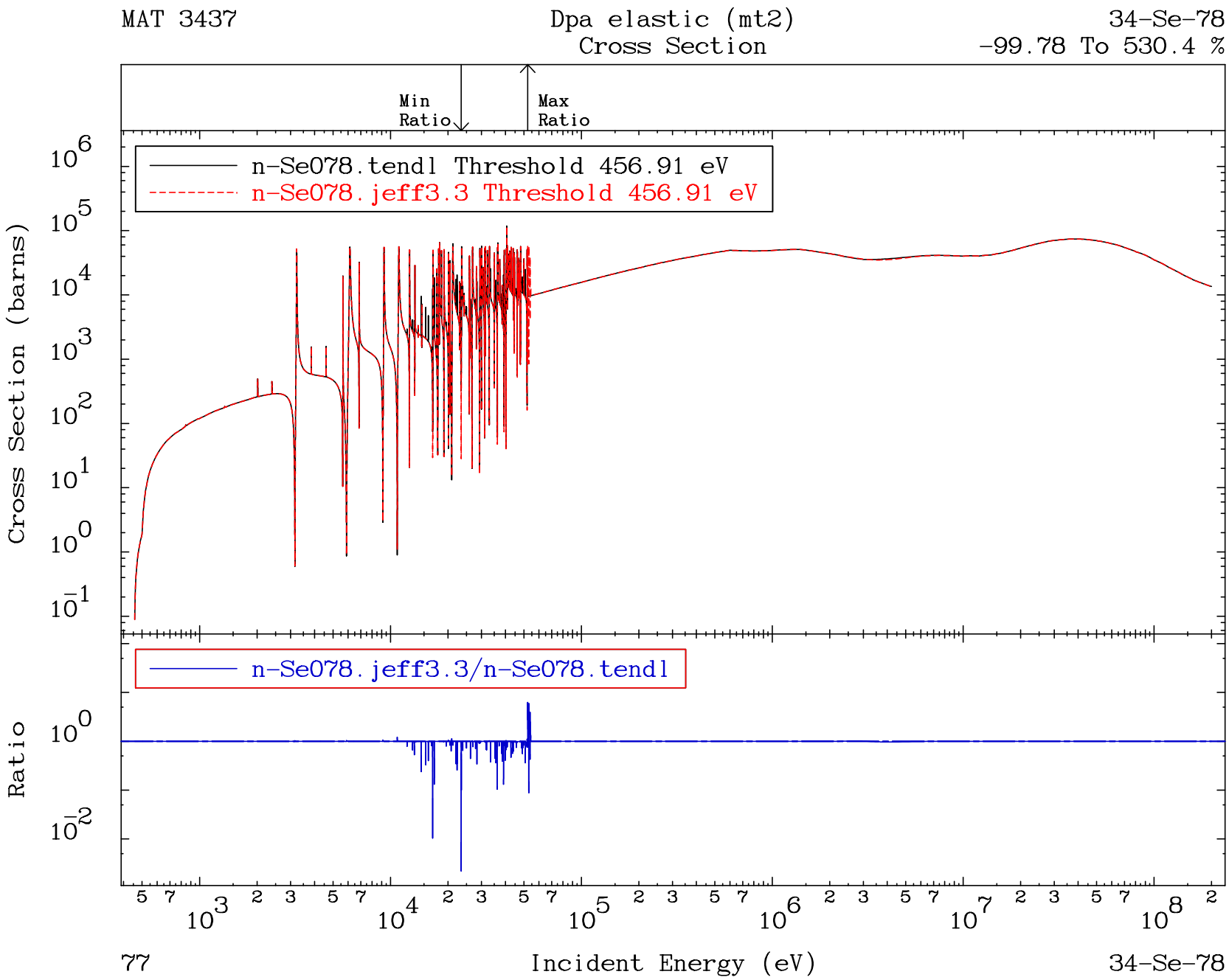

MAT 3437
Kerma fission (mt18 or mt19-20-21-38)
Cross Section
34-Se-78
-19.41 To 9.644 %
Max Ratio
Min Ratio
n-Se078.tendl
n-Se078.jeff3.3
Cross Section (barns)
1.0
0.5
0.0
-0.5
-1.0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
1.0
0.8
10-5 10-4 10-3 10-2 10-1 100 101 102 103 104 105 106 107 108
72
Incident Energy (eV)
34-Se-78

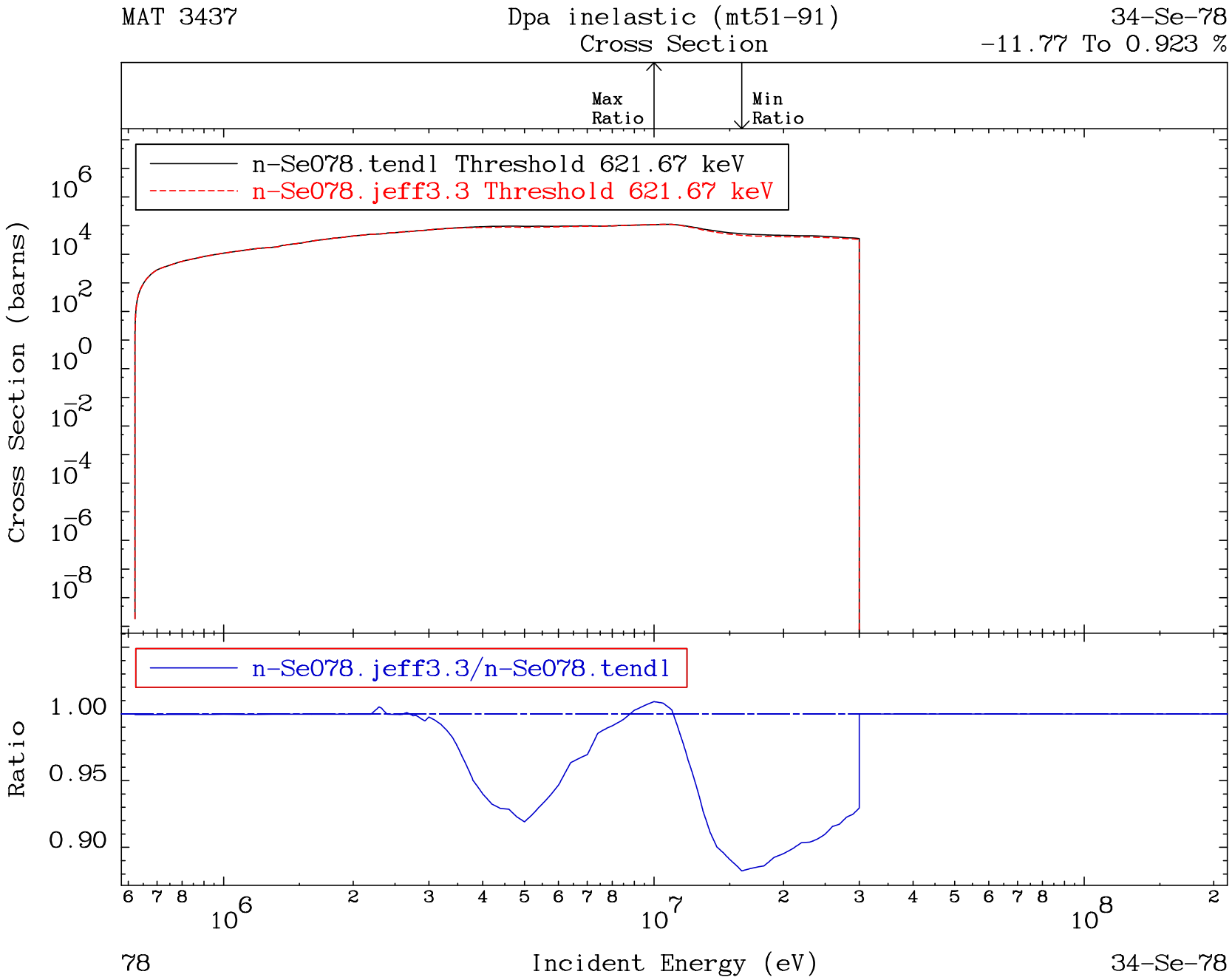

MAT 3437
Kerma capture (mt102)
Cross Section
34-Se-78
-99.99 To 1269. %
Min Ratio
Max Ratio
n-Se078.tendl
n-Se078.jeff3.3
Cross Section (barns)
n-Se078.jeff3.3/n-Se078.tendl
Ratio
Incident Energy (eV)
73
34-Se-78

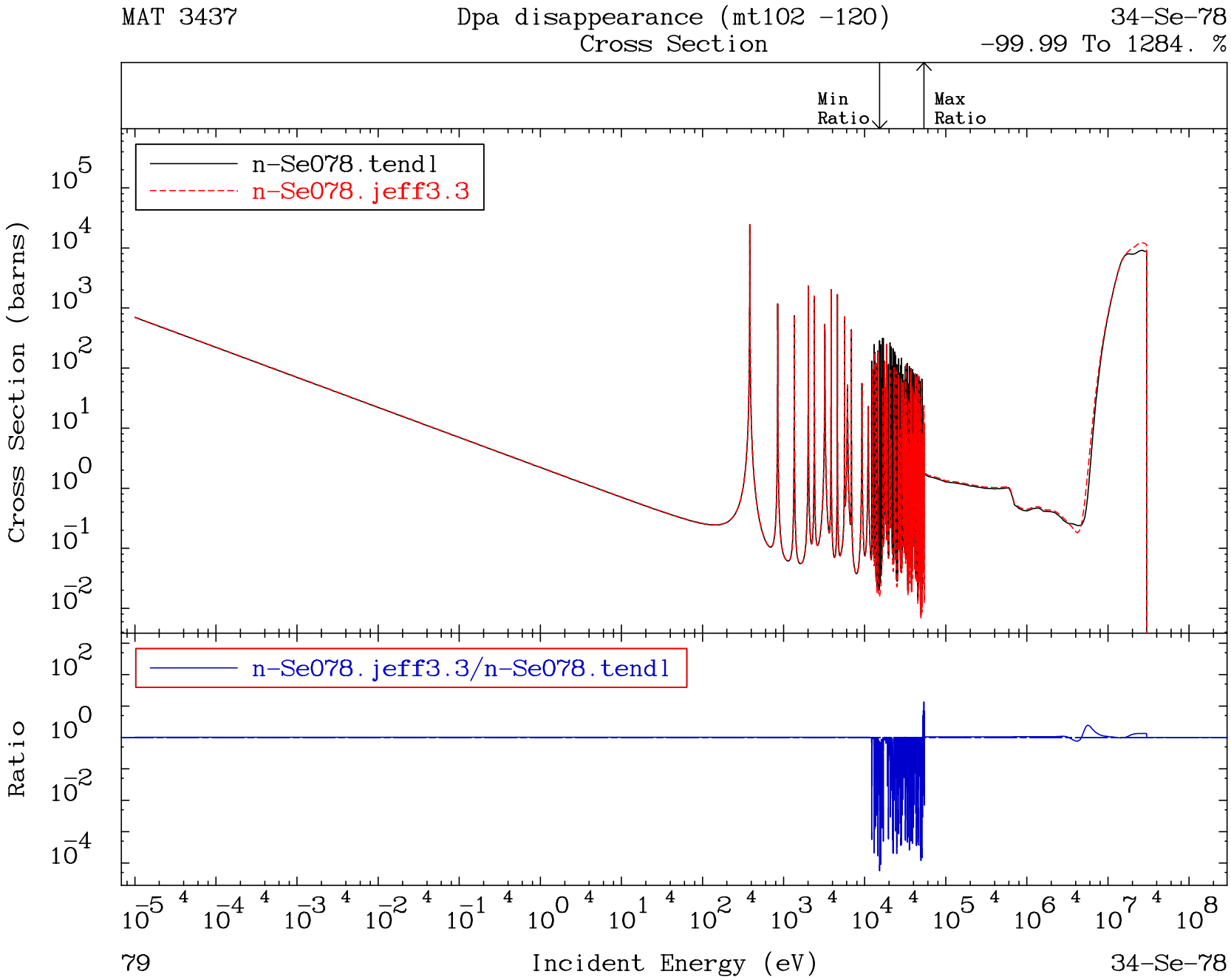

MAT 3437
Total photon (eV-barns)
Cross Section
34-Se-78
-99.99 To 1269. %
Min Ratio
Max Ratio
n-Se078.tendl
n-Se078.jeff3.3
Cross Section (barns)
n-Se078.jeff3.3/n-Se078.tendl
Ratio
Incident Energy (eV)
74
34-Se-78

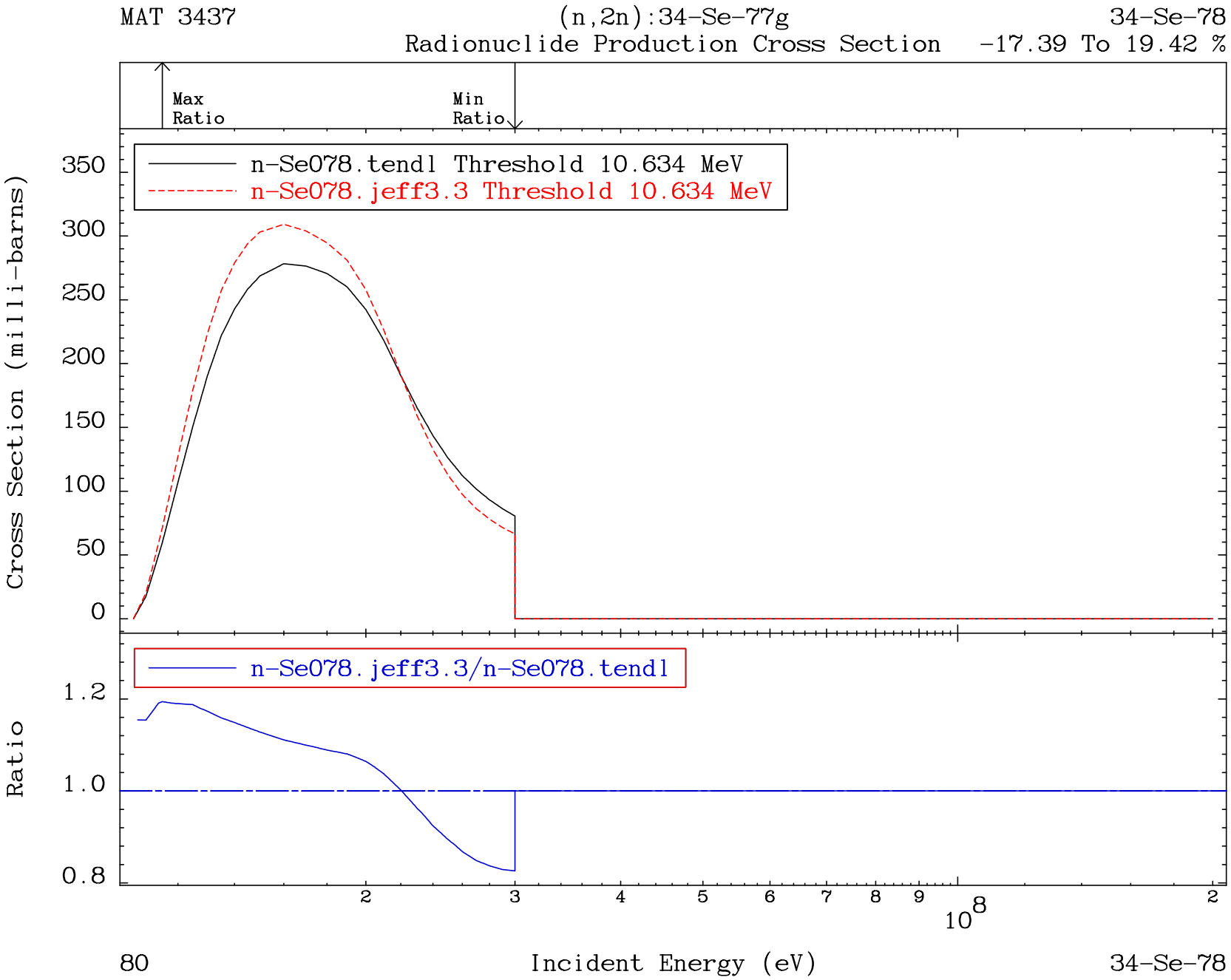

MAT 3437
Total kinematic kerma (high limit)
Cross Section
34-Se-78
-99.99 To 1237. %
Min Ratio
Max Ratio
n-Se078.tendl
n-Se078.jeff3.3
Cross Section (barns)
n-Se078.jeff3.3/n-Se078.tendl
Ratio
Incident Energy (eV)
75
34-Se-78

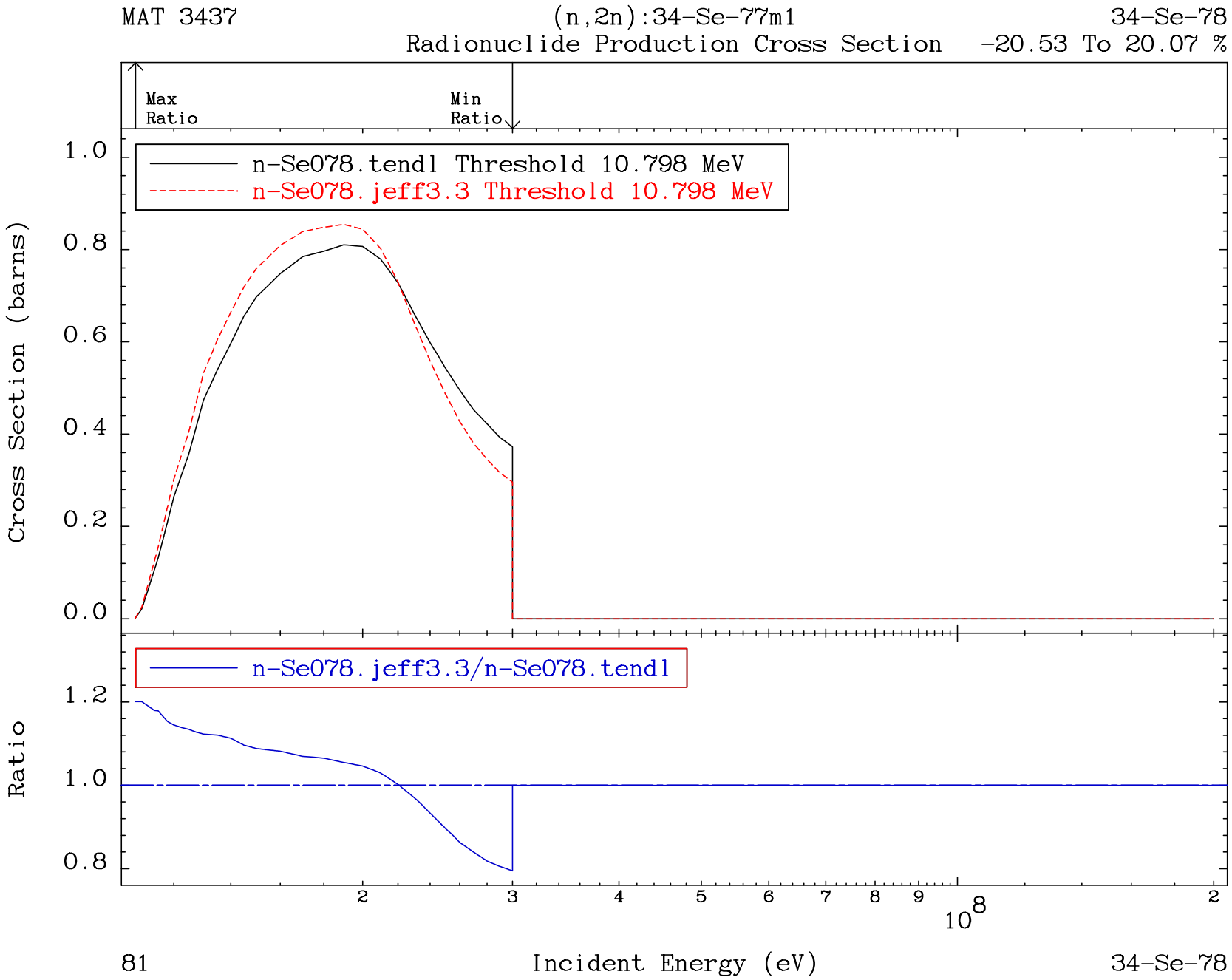

MAT 3437
Dpa total (eV-barns)
Cross Section
34-Se-78
-99.78 To 530.4 %
Min Ratio
Max Ratio
n-Se078.tendl
n-Se078.jeff3.3
Cross Section (barns)
n-Se078.jeff3.3/n-Se078.tendl
Ratio
Incident Energy (eV)
76
34-Se-78

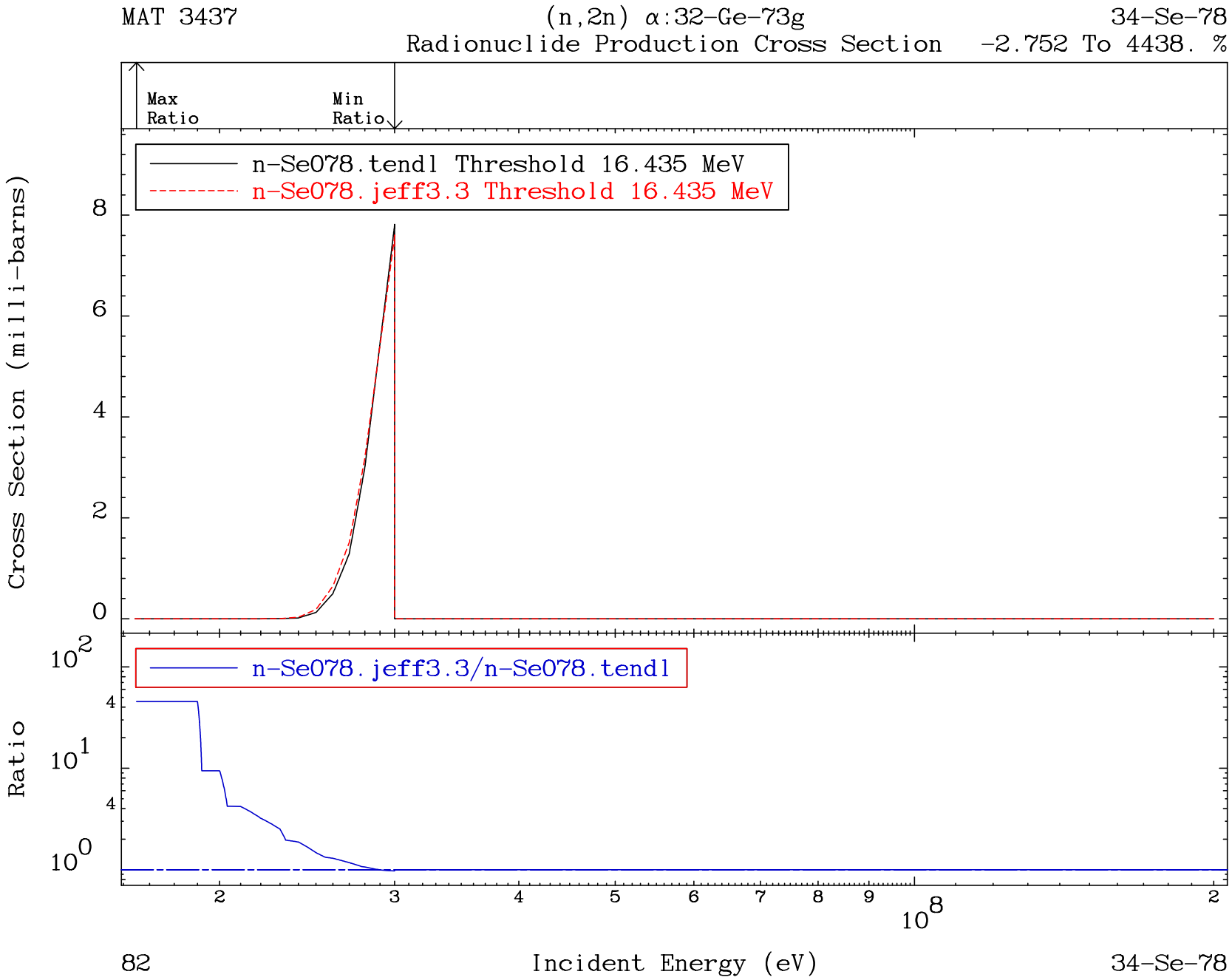

MAT 3437
Dpa elastic (mt2)
Cross Section
34-Se-78
-99.78 To 530.4 %
Min Ratio
Max Ratio
n-Se078.tendl Threshold 456.91 eV
n-Se078.jeff3.3 Threshold 456.91 eV
Cross Section (barns)
n-Se078.jeff3.3/n-Se078.tendl
Ratio
Incident Energy (eV)
77
34-Se-78

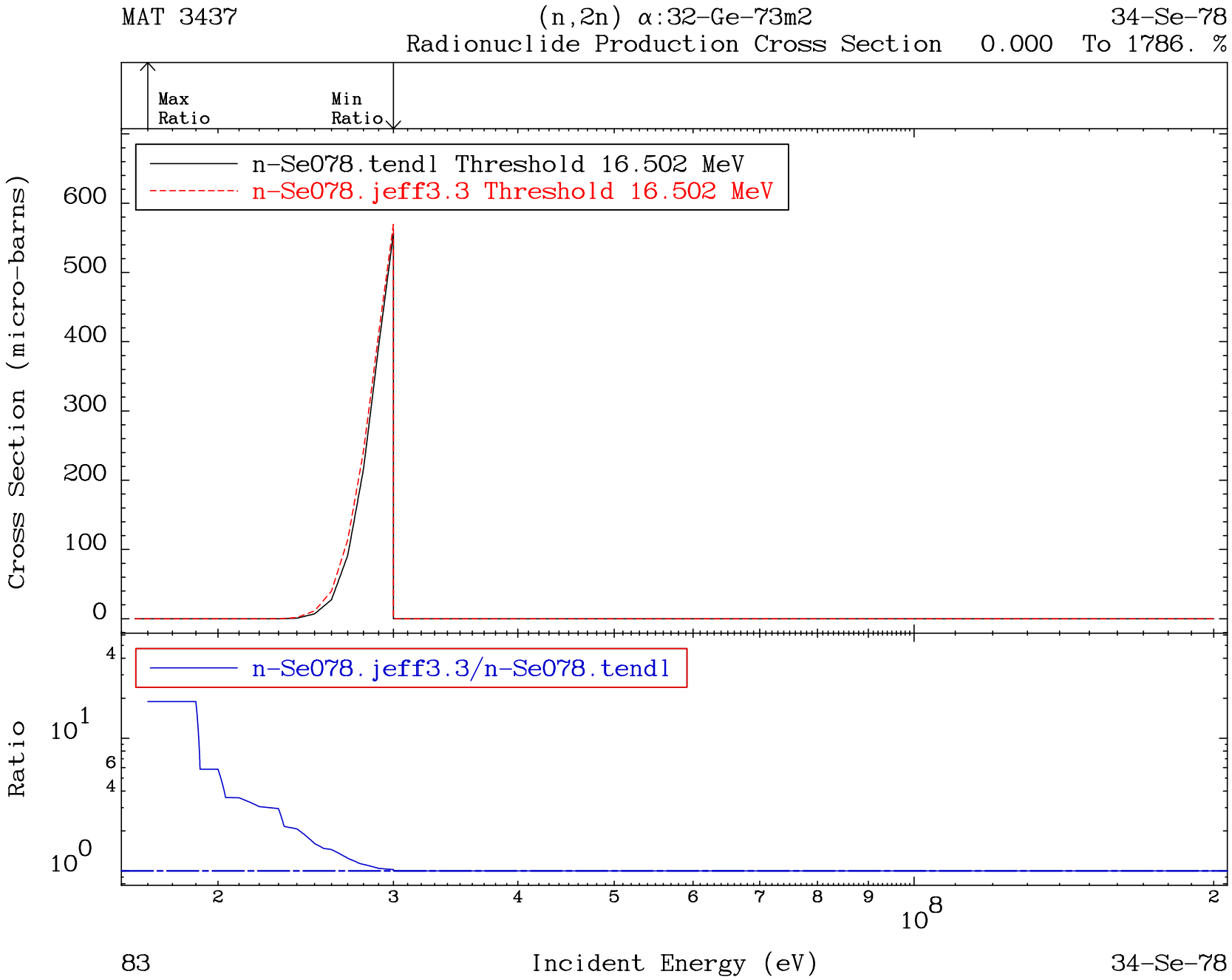

MAT 3437
Dpa inelastic (mt51-91)
Cross Section
34-Se-78
-11.77 To 0.923 %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 621.67 keV
n-Se078.jeff3.3 Threshold 621.67 keV
Cross Section (barns)
n-Se078.jeff3.3/n-Se078.tendl
Ratio
Incident Energy (eV)
78
34-Se-78

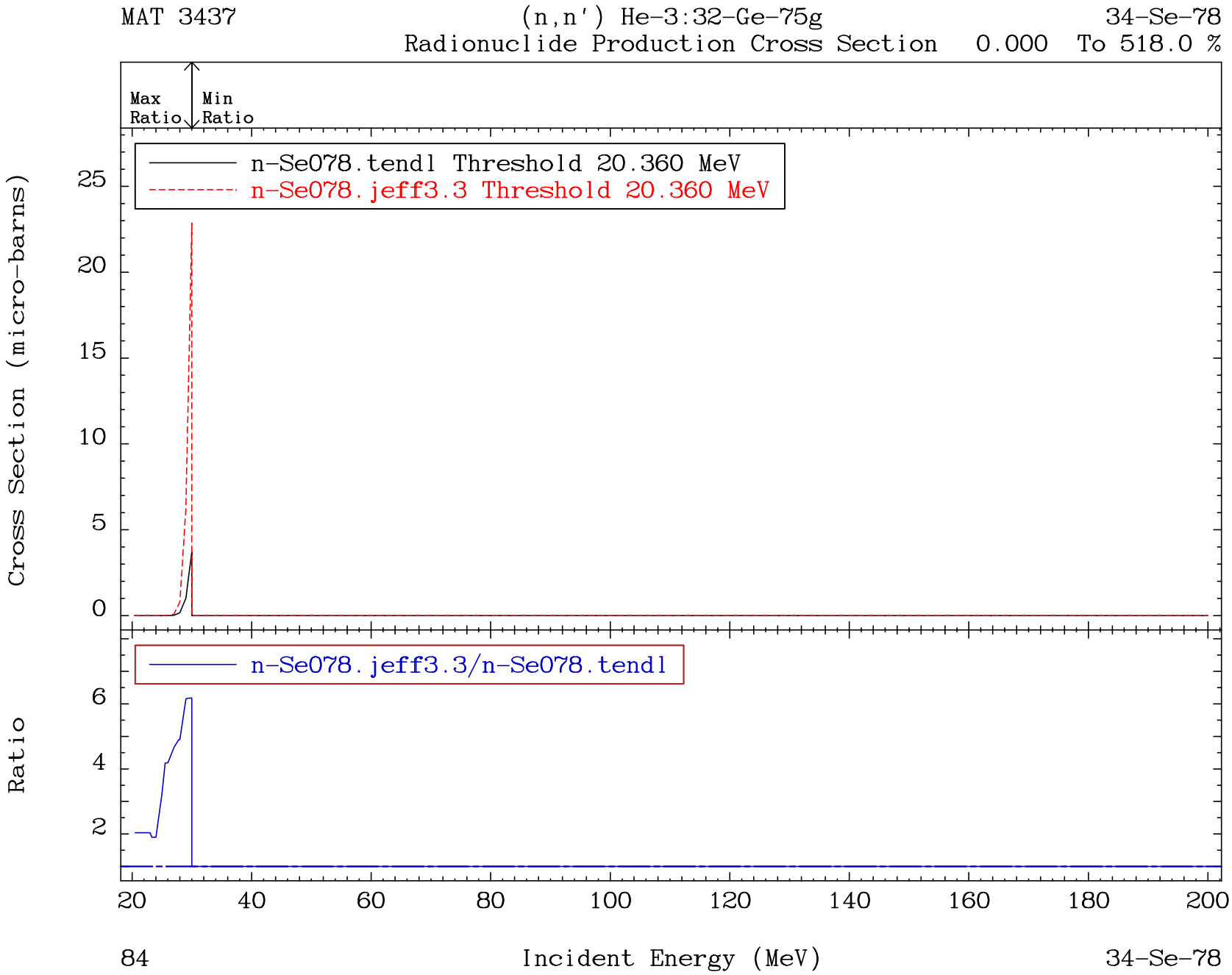

MAT 3437
Dpa disappearance (mt102 -120)
Cross Section
34-Se-78
-99.99 To 1284. %
Min Ratio
Max Ratio
n-Se078.tendl
n-Se078.jeff3.3
Cross Section (barns)
n-Se078.jeff3.3/n-Se078.tendl
Ratio
Incident Energy (eV)
79
34-Se-78

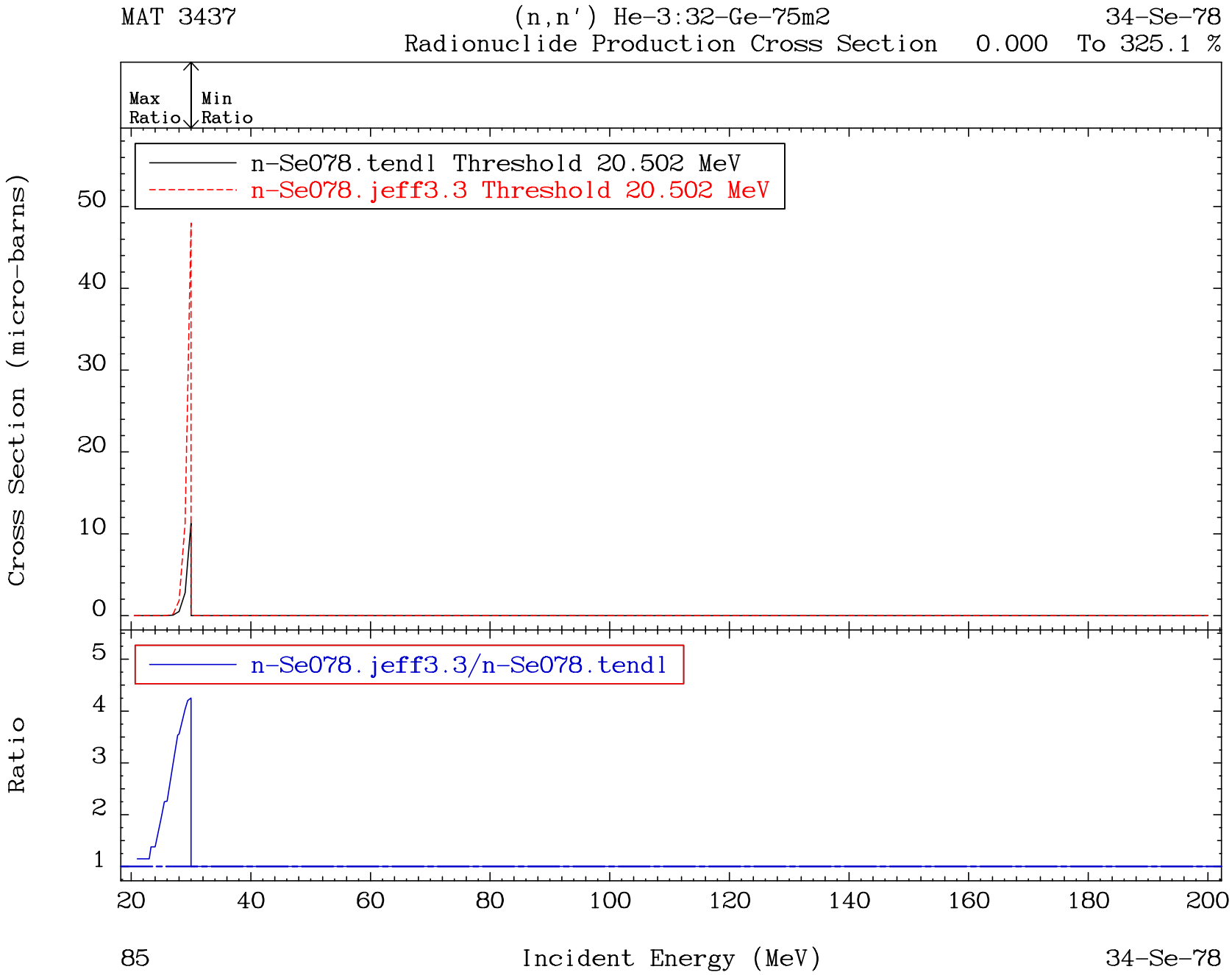

MAT 3437
(n,2n):34-Se-77g
34-Se-78
Radionuclide Production Cross Section -17.39 To 19.42 %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 10.634 MeV
n-Se078.jeff3.3 Threshold 10.634 MeV
Cross Section (milli-barns)
350
300
250
200
150
100
50
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
1.2
1.0
0.8
2
3
4
5
6
7
8
9
10^8
2
80
Incident Energy (eV)
34-Se-78

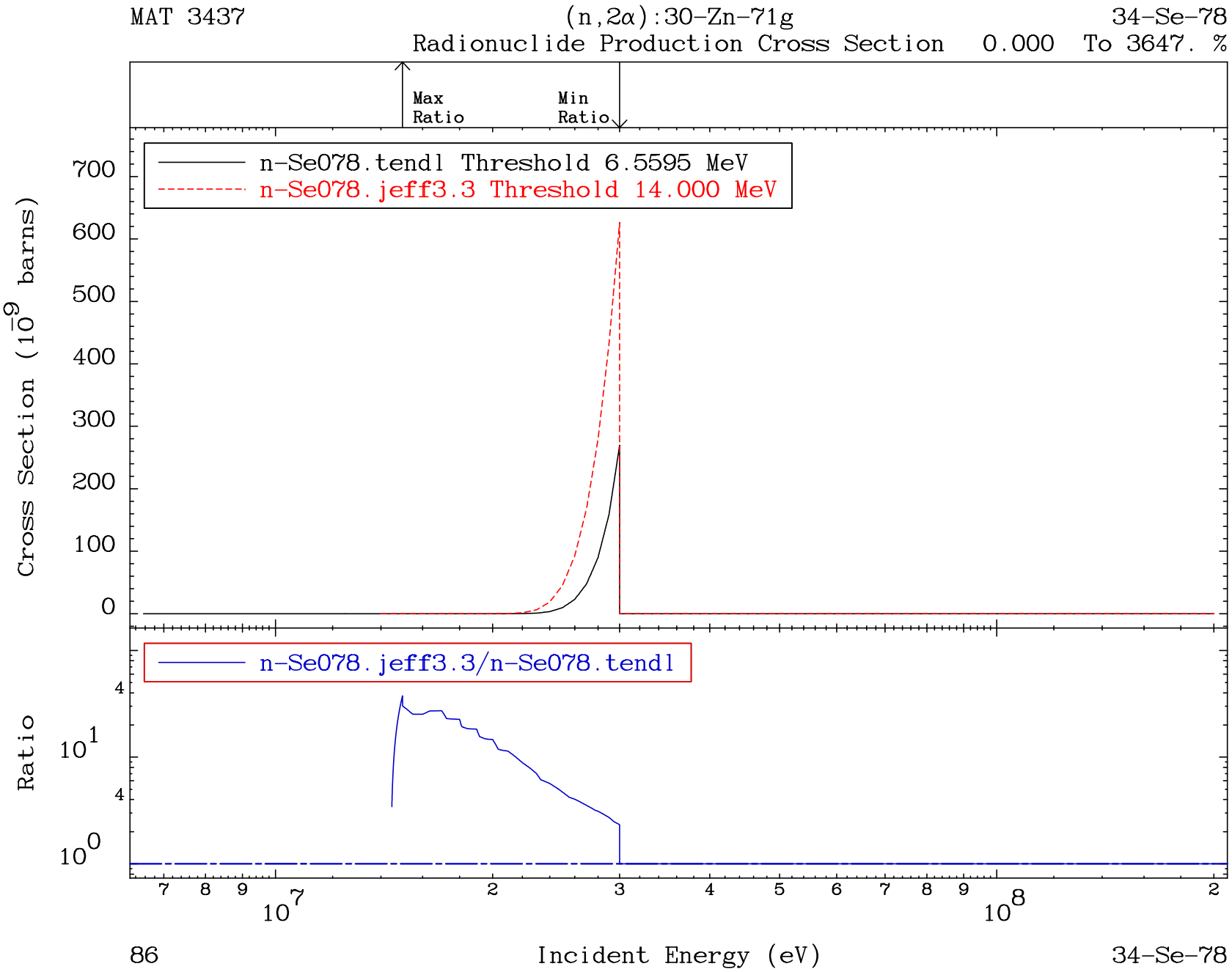

MAT 3437
(n,2n):34-Se-77m1
34-Se-78
Radionuclide Production Cross Section -20.53 To 20.07 %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 10.798 MeV
n-Se078.jeff3.3 Threshold 10.798 MeV
Cross Section (barns)
1.0
0.8
0.6
0.4
0.2
0.0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
1.2
1.0
0.8
2
3
4
5
6
7
8
9
10^8
2
81
Incident Energy (eV)
34-Se-78

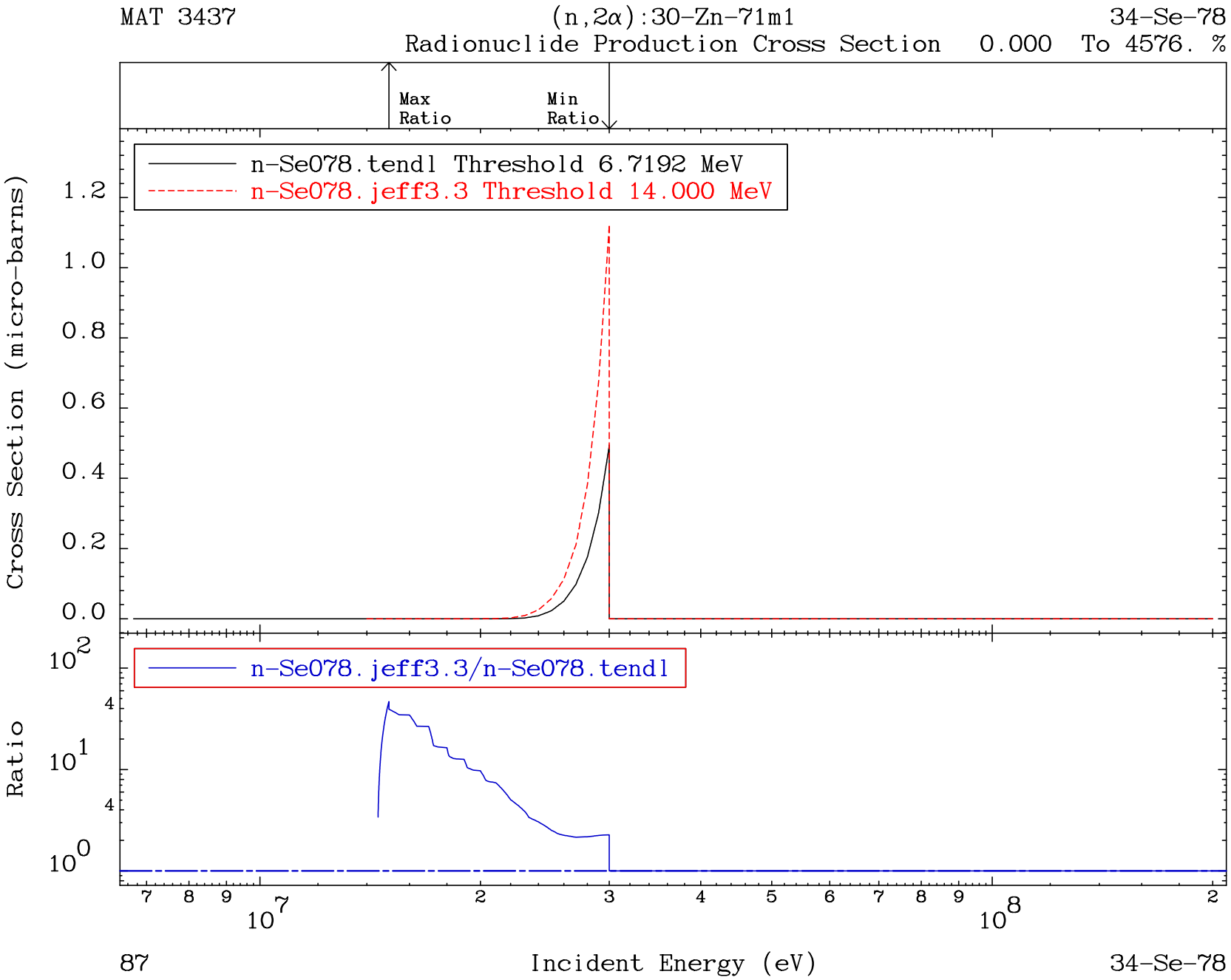

MAT 3437
(n,2n) α:32-Ge-73g
34-Se-78
Radionuclide Production Cross Section -2.752 To 4438. %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 16.435 MeV
n-Se078.jeff3.3 Threshold 16.435 MeV
Cross Section (milli-barns)
0
2
4
6
8
n-Se078.jeff3.3/n-Se078.tendl
Ratio
10^2
4
10^1
4
10^0
2
3
4
5
6
7
8
9
10^8
2
82
Incident Energy (eV)
34-Se-78

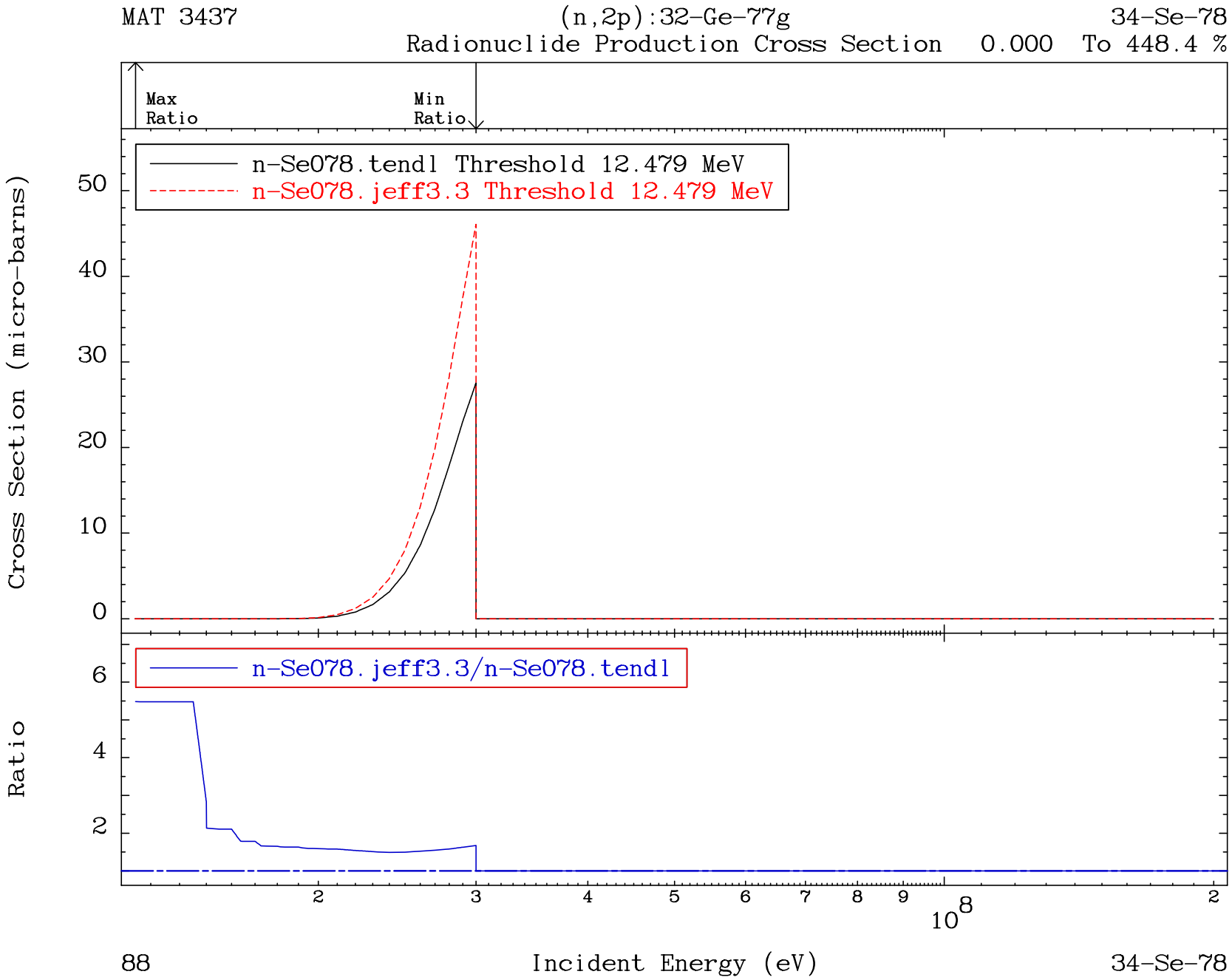

MAT 3437
(n,2n) α:32-Ge-73m2
34-Se-78
Radionuclide Production Cross Section 0.000 To 1786. %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 16.502 MeV
n-Se078.jeff3.3 Threshold 16.502 MeV
Cross Section (micro-barns)
600
500
400
300
200
100
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
4
10^1
6
4
10^0
2
3
4
5
6
7
8
9
10^8
2
83
Incident Energy (eV)
34-Se-78

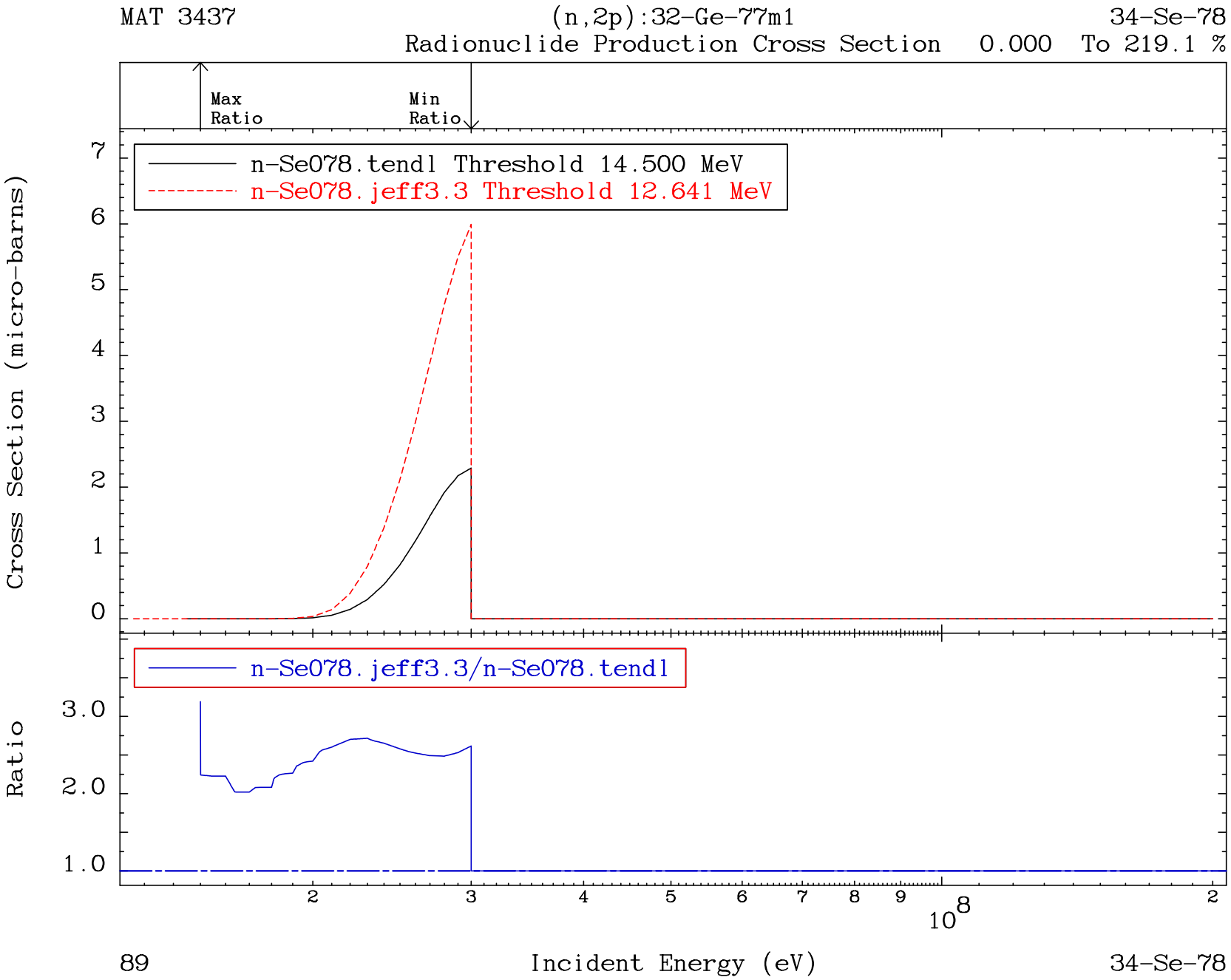

MAT 3437
(n,n') He-3:32-Ge-75g
34-Se-78
Radionuclide Production Cross Section 0.000 To 518.0 %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 20.360 MeV
n-Se078.jeff3.3 Threshold 20.360 MeV
Cross Section (micro-barns)
0
5
10
15
20
25
n-Se078.jeff3.3/n-Se078.tendl
Ratio
2
4
6
20
40
60
80
100
120
140
160
180
200
84
Incident Energy (MeV)
34-Se-78

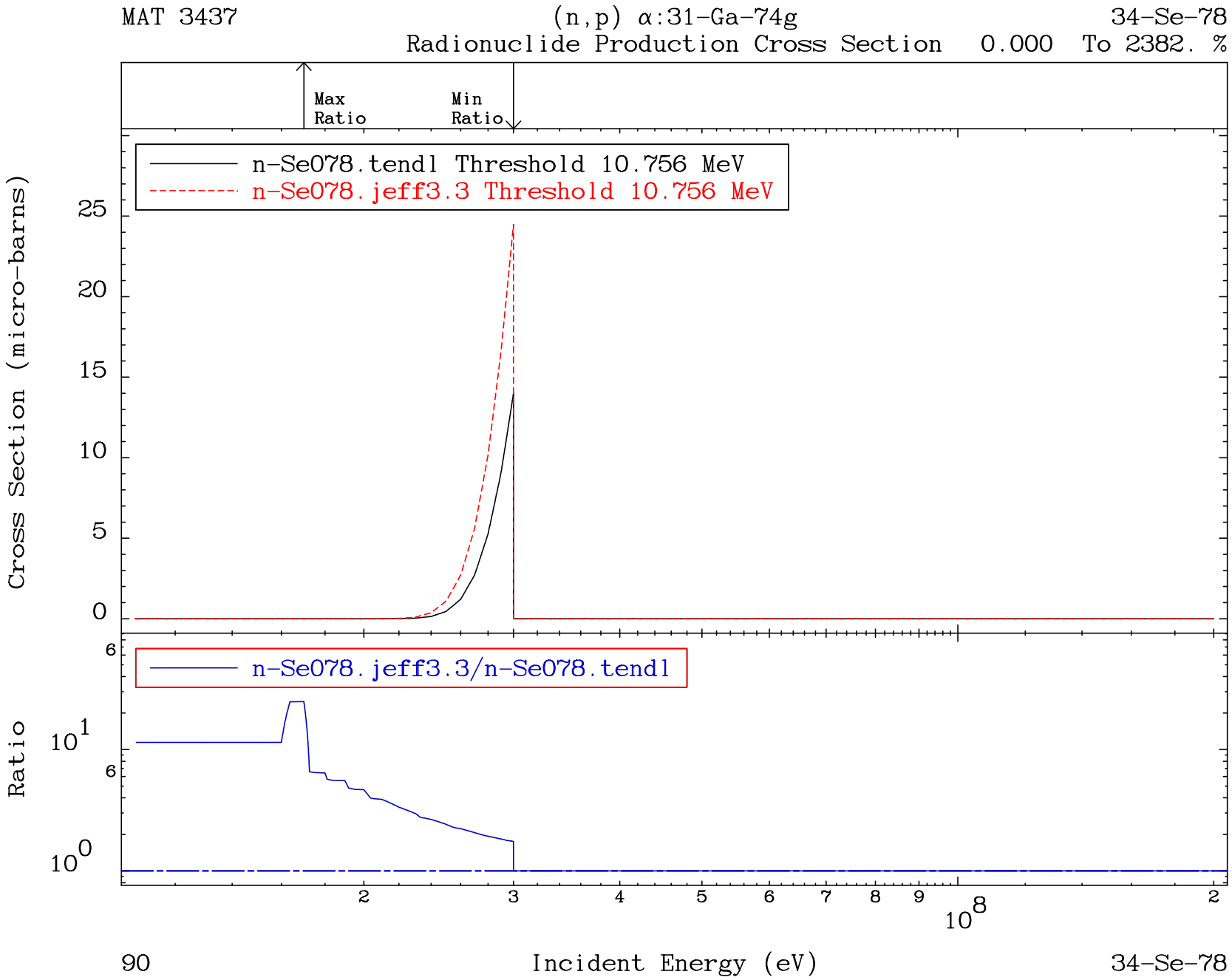

MAT 3437
(n,n') He-3:32-Ge-75m2
34-Se-78
Radionuclide Production Cross Section 0.000 To 325.1 %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 20.502 MeV
n-Se078.jeff3.3 Threshold 20.502 MeV
Cross Section (micro-barns)
0
10
20
30
40
50
n-Se078.jeff3.3/n-Se078.tendl
Ratio
1
2
3
4
5
20
40
60
80
100
120
140
160
180
200
85
Incident Energy (MeV)
34-Se-78

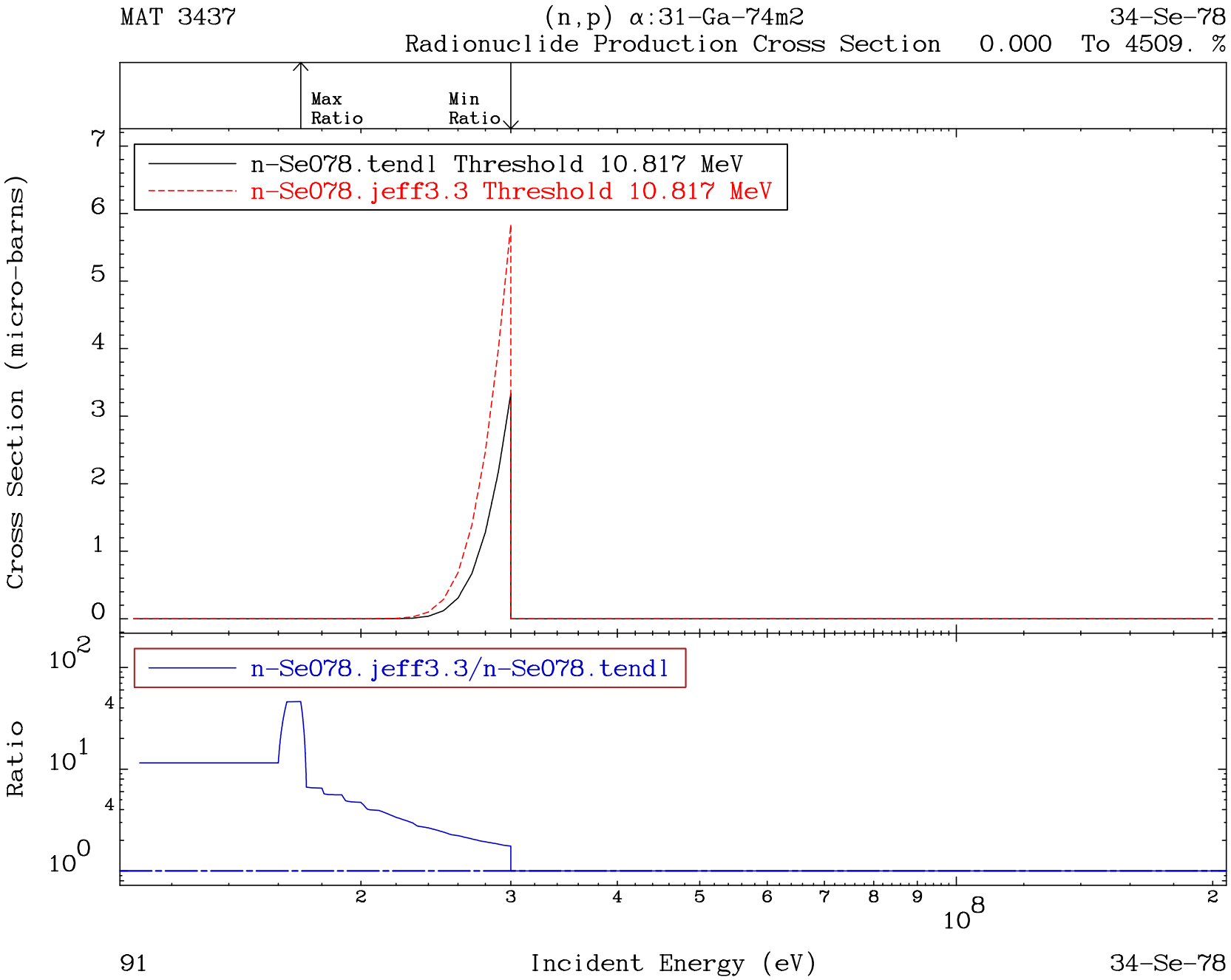

MAT 3437
(n,2α):30-Zn-71g
34-Se-78
Radionuclide Production Cross Section 0.000 To 3647. %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 6.5595 MeV
n-Se078.jeff3.3 Threshold 14.000 MeV
Cross Section (10^{-9} barns)
700
600
500
400
300
200
100
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
10^{1}
4
10^{0}
4
7 8 9 10^{7} 2 3 4 5 6 7 8 9 10^{8} 2
86
Incident Energy (eV)
34-Se-78

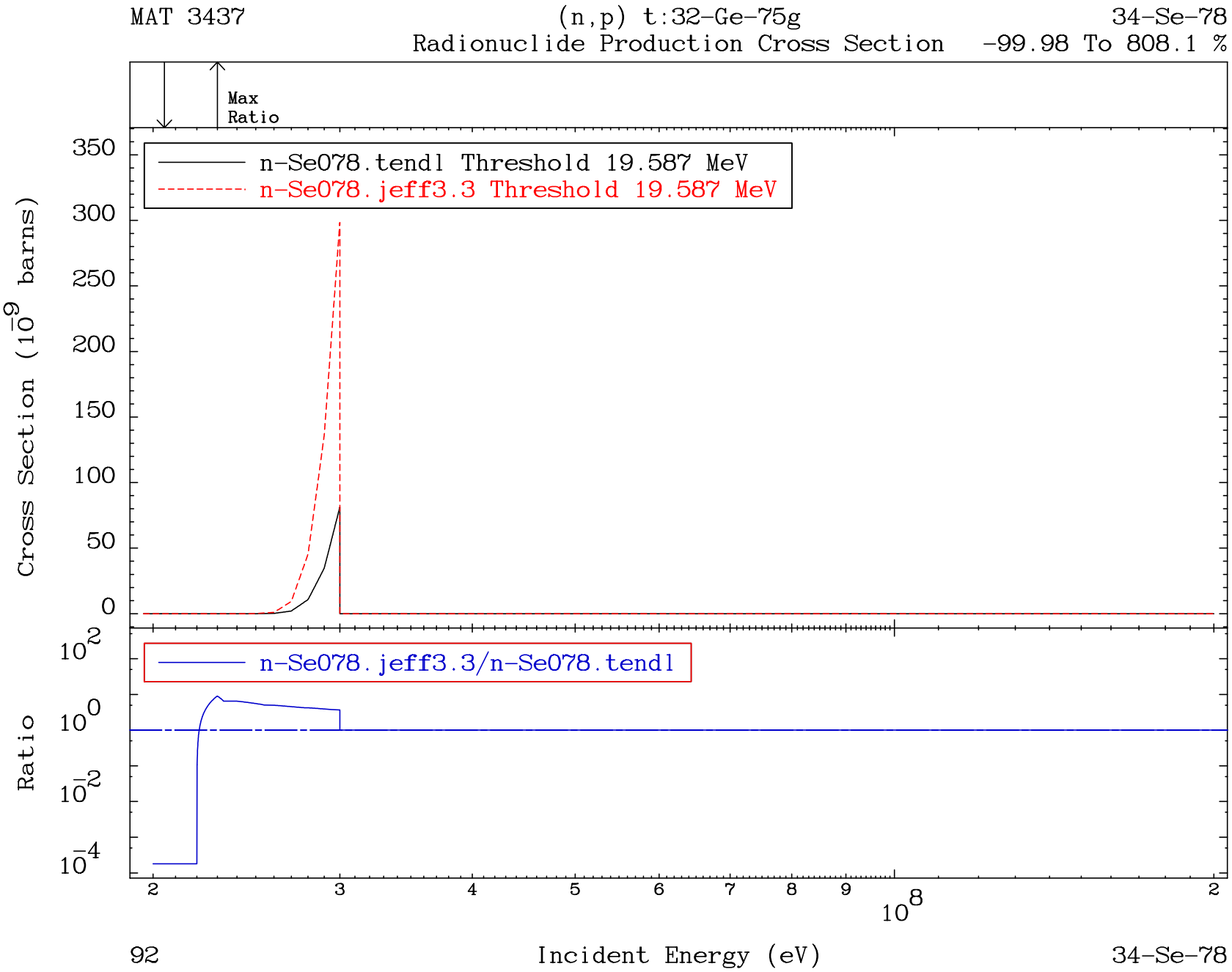

MAT 3437
(n,2α):30-Zn-71m1
34-Se-78
Radionuclide Production Cross Section 0.000 To 4576. %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 6.7192 MeV
n-Se078.jeff3.3 Threshold 14.000 MeV
Cross Section (micro-barns)
1.2
1.0
0.8
0.6
0.4
0.2
0.0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
10^2
4
10^1
4
10^0
7 8 9 10^7 2 3 4 5 6 7 8 9 10^8 2
87
Incident Energy (eV)
34-Se-78

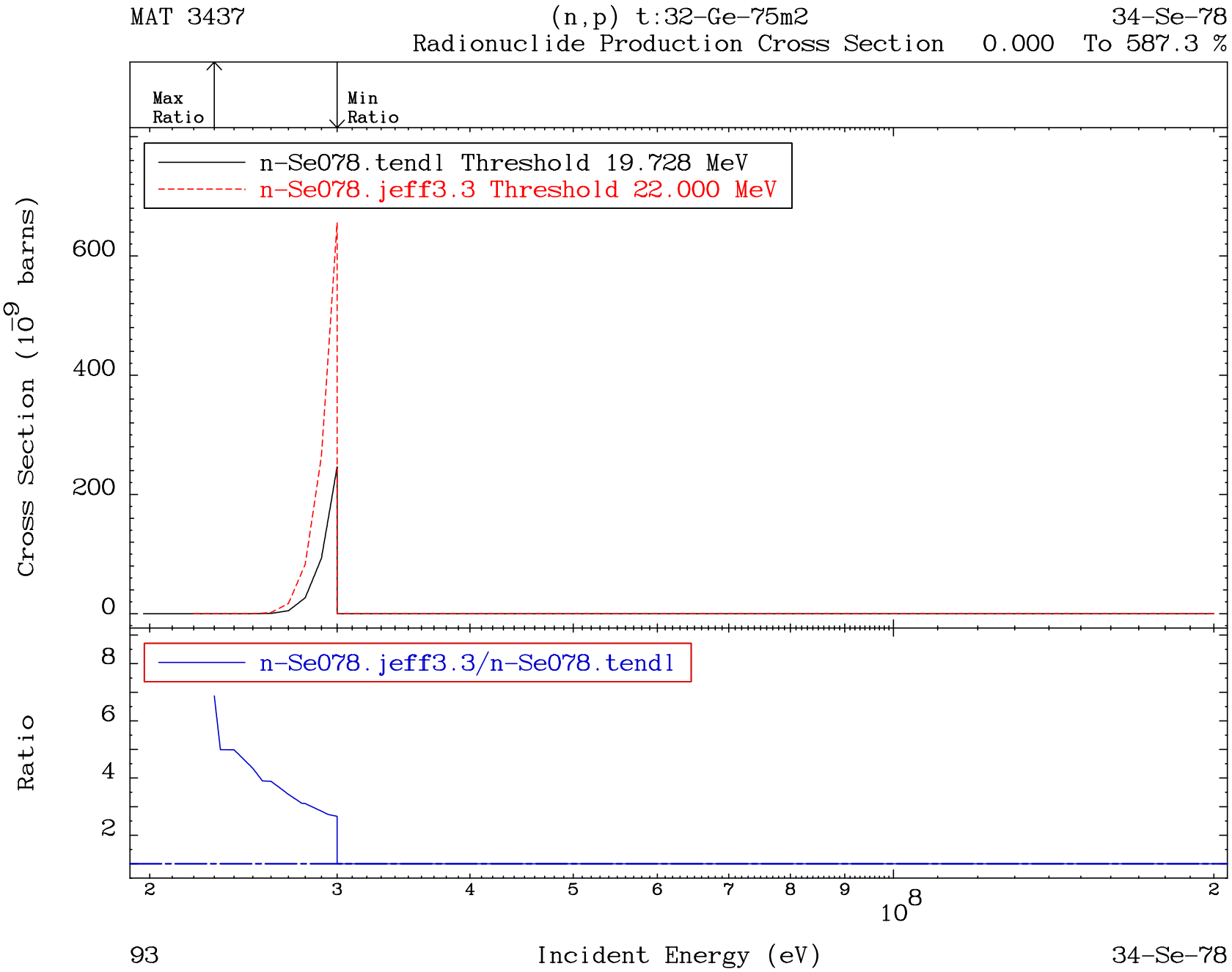

MAT 3437
(n,2p):32-Ge-77g
34-Se-78
Radionuclide Production Cross Section 0.000 To 448.4 %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 12.479 MeV
n-Se078.jeff3.3 Threshold 12.479 MeV
Cross Section (micro-barns)
50
40
30
20
10
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
6
4
2
2
3
4
5
6
7
8
9
10^8
2
88
Incident Energy (eV)
34-Se-78


MAT 3437
(n,2p):32-Ge-77m1
34-Se-78
Radionuclide Production Cross Section 0.000 To 219.1 %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 14.500 MeV
n-Se078.jeff3.3 Threshold 12.641 MeV
Cross Section (micro-barns)
0
1
2
3
4
5
6
7
n-Se078.jeff3.3/n-Se078.tendl
Ratio
1.0
2.0
3.0
2
3
4
5
6
7
8
9
10^8
2
89
Incident Energy (eV)
34-Se-78


MAT 3437
(n,p) α:31-Ga-74g
34-Se-78
Radionuclide Production Cross Section 0.000 To 2382. %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 10.756 MeV
n-Se078.jeff3.3 Threshold 10.756 MeV
Cross Section (micro-barns)
25
20
15
10
5
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
10^1
6
10^0
6
2
3
4
5
6
7
8
9
10^8
2
90
Incident Energy (eV)
34-Se-78


MAT 3437
(n,p) α:31-Ga-74m2
34-Se-78
Radionuclide Production Cross Section 0.000 To 4509. %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 10.817 MeV
n-Se078.jeff3.3 Threshold 10.817 MeV
Cross Section (micro-barns)
n-Se078.jeff3.3/n-Se078.tendl
Ratio
Incident Energy (eV)
91
34-Se-78


MAT 3437
(n,p) t:32-Ge-75g
34-Se-78
Radionuclide Production Cross Section -99.98 To 808.1 %
Max
Ratio
n-Se078.tendl Threshold 19.587 MeV
n-Se078.jeff3.3 Threshold 19.587 MeV
Cross Section (10^{-9} barns)
350
300
250
200
150
100
50
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
10^{2}
10^{0}
10^{-2}
10^{-4}
2
3
4
5
6
7
8
9
10^{8}
2
92
Incident Energy (eV)
34-Se-78


MAT 3437
(n,p) t:32-Ge-75m2
34-Se-78
Radionuclide Production Cross Section 0.000 To 587.3 %
Max Ratio
Min Ratio
n-Se078.tendl Threshold 19.728 MeV
n-Se078.jeff3.3 Threshold 22.000 MeV
Cross Section (10^{-9} barns)
600
400
200
0
n-Se078.jeff3.3/n-Se078.tendl
Ratio
8
6
4
2
2
3
4
5
6
7
8
9
10^8
2
93
Incident Energy (eV)
34-Se-78