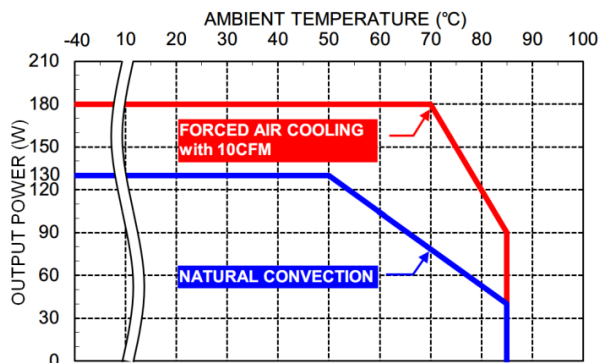


## Characteristic Curves

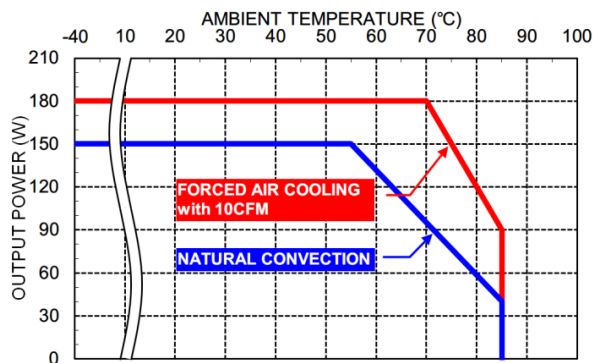
### TPI 180-112(A)-M

### TPP 180-112(A)-M

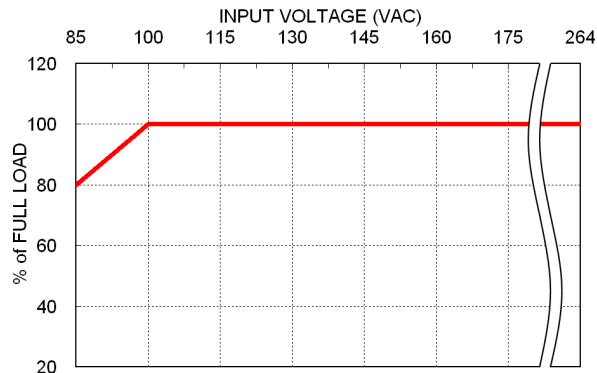
Derating Output Load versus Ambient Temperature at 115 Vin



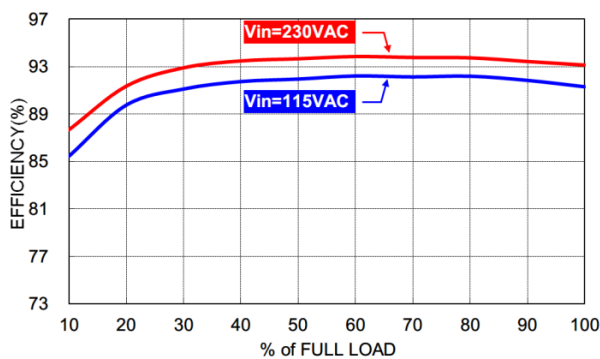
Derating Output Load versus Ambient Temperature at 230 Vin



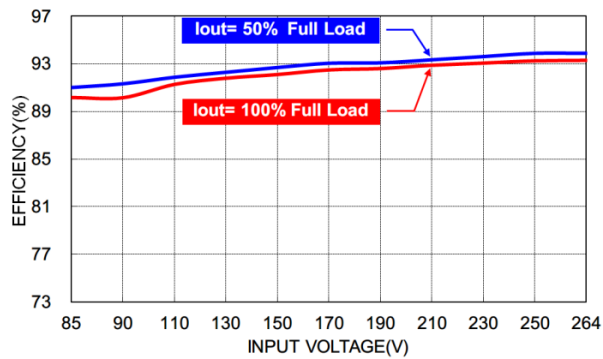
Derating Output versus Input Voltage



Efficiency versus Output Load

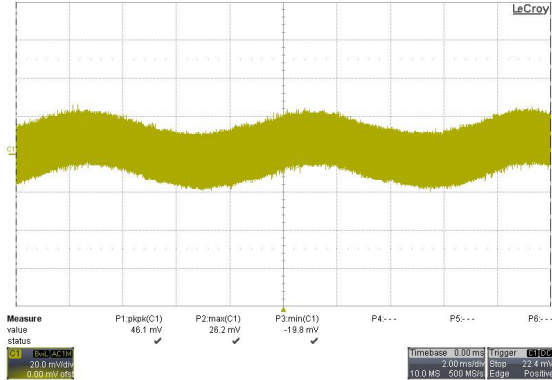


Efficiency versus Input Voltage

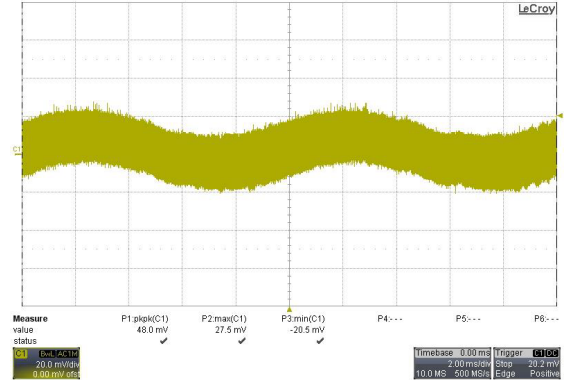


### TPI 180-112(A)-M TPP 180-112(A)-M

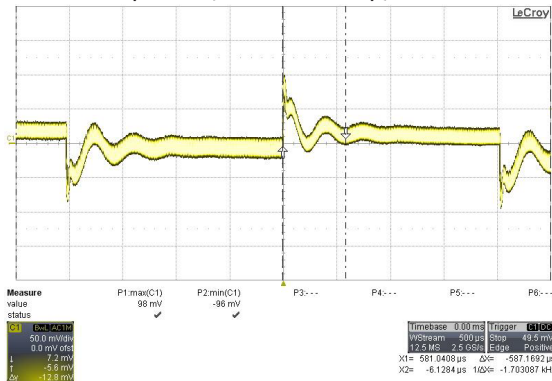
Typical Output Ripple and Noise at 115 Vin



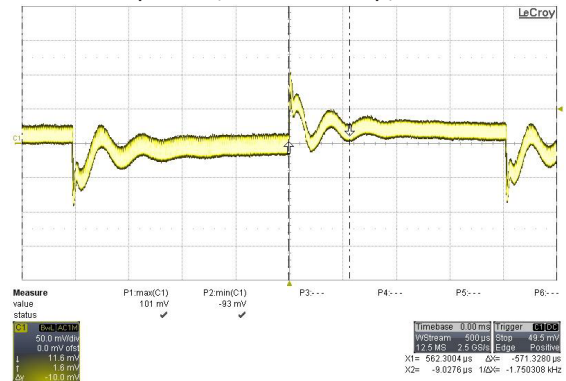
Typical Output Ripple and Noise at 230 Vin



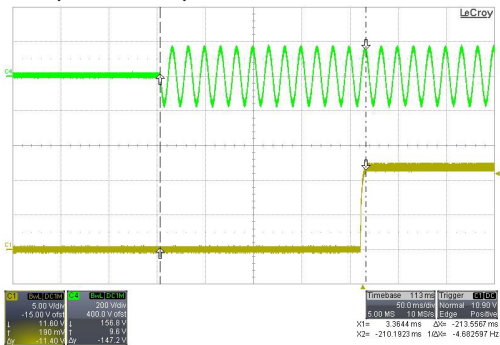
Transient Response (25% load step) at 115 Vin



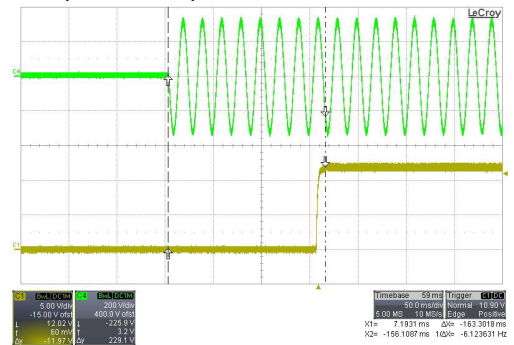
Transient Response (25% load step) at 230 Vin



Typical Input Start-Up Characteristic at 115 Vin

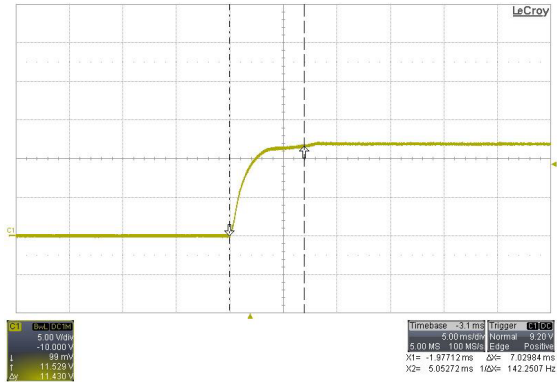


Typical Input Start-Up Characteristic at 230 Vin

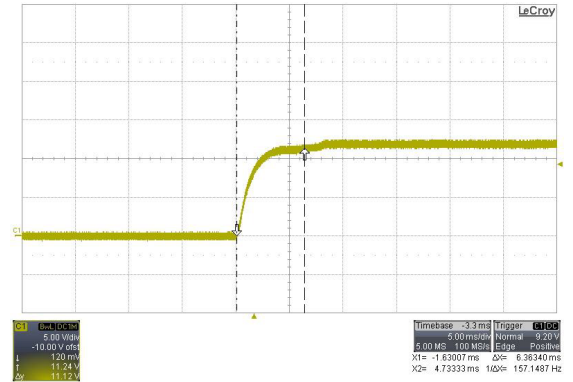


### TPI 180-112(A)-M TPP 180-112(A)-M

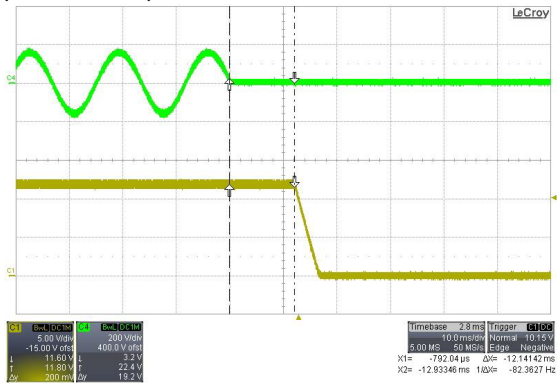
Typical Output Rise Characteristic at 115 Vin



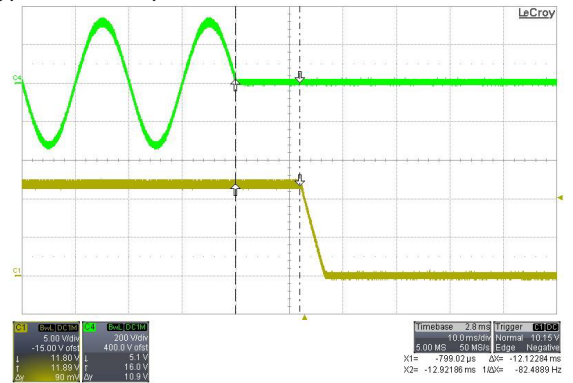
Typical Output Rise Characteristic at 230 Vin



Typical Hold-Up Characteristic at 115 Vin

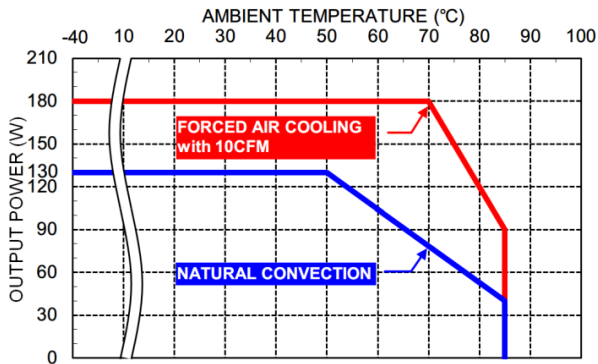


Typical Hold-Up Characteristic at 230 Vin

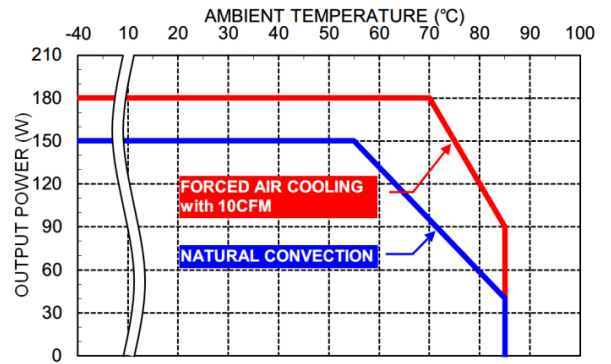


### TPI 180-115(A)-M TPP 180-115(A)-M

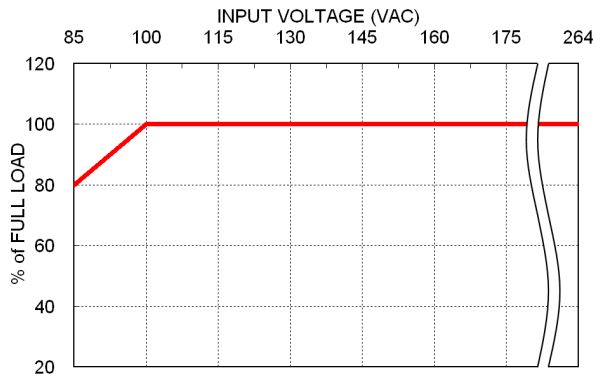
Derating Output Load versus Ambient Temperature  
at 115 Vin



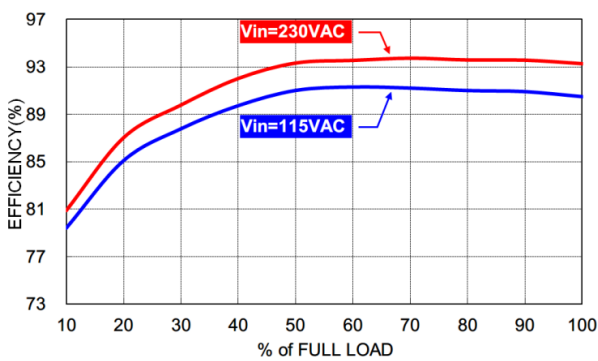
Derating Output Load versus Ambient Temperature  
at 230 Vin



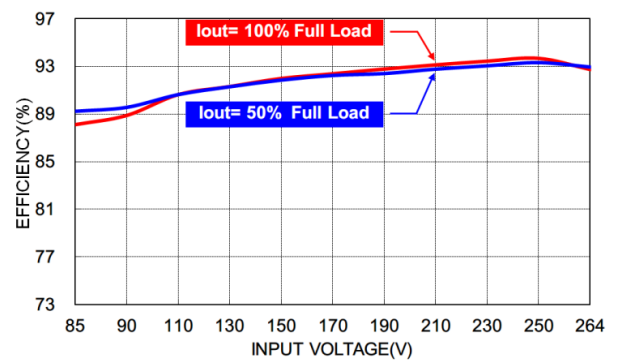
Derating Output versus Input Voltage



Efficiency versus Output Load

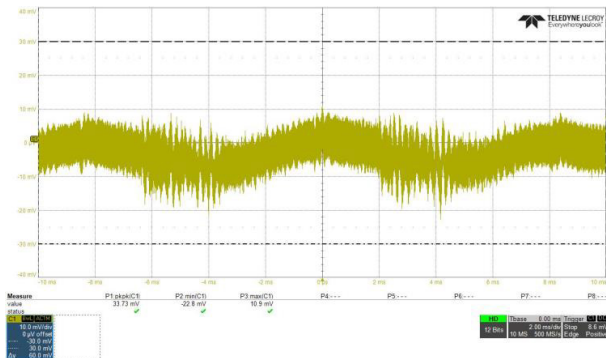


Efficiency versus Input Voltage

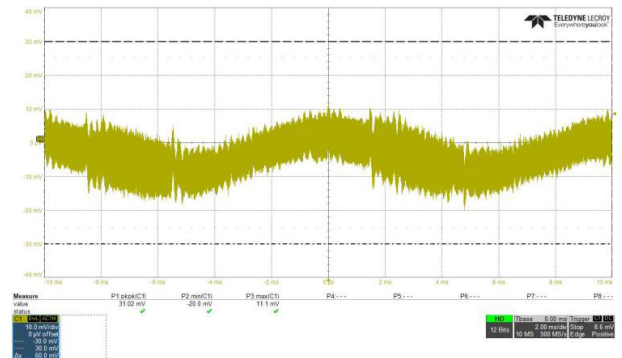


### TPI 180-115(A)-M TPP 180-115(A)-M

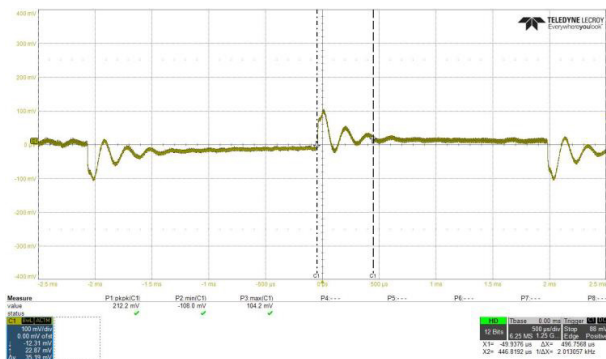
Typical Output Ripple and Noise at 115 Vin



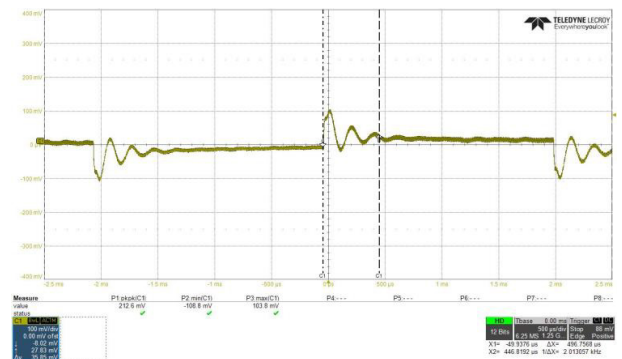
Typical Output Ripple and Noise at 230 Vin



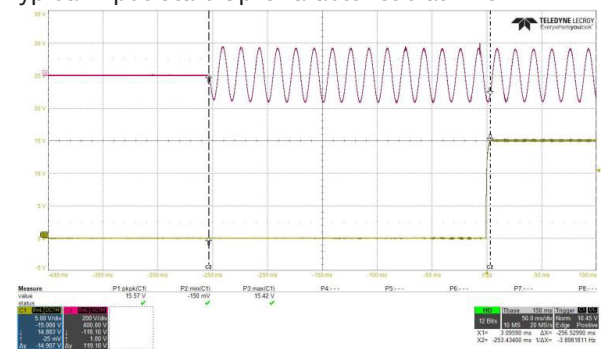
Transient Response (25% load step) at 115 Vin



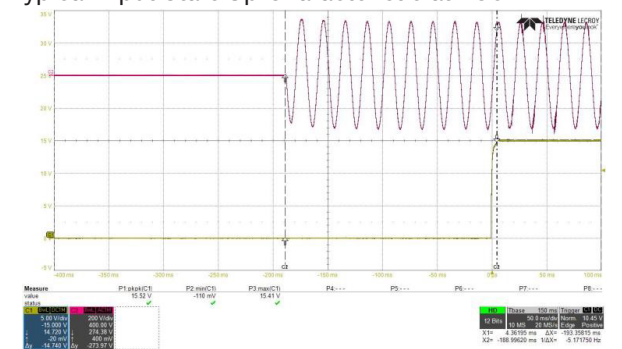
Transient Response (25% load step) at 230 Vin



Typical Input Start-Up Characteristic at 115 Vin



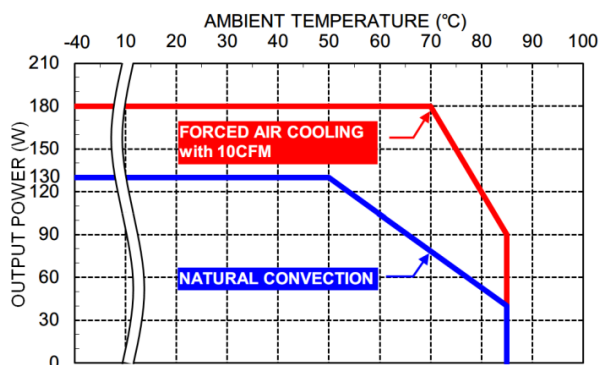
Typical Input Start-Up Characteristic at 230 Vin



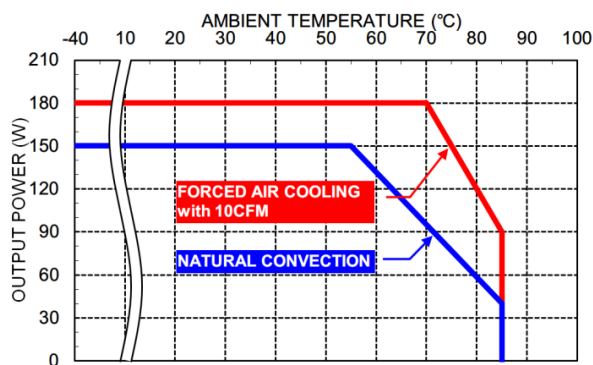


### TPI 180-124(A)-M TPP 180-124(A)-M

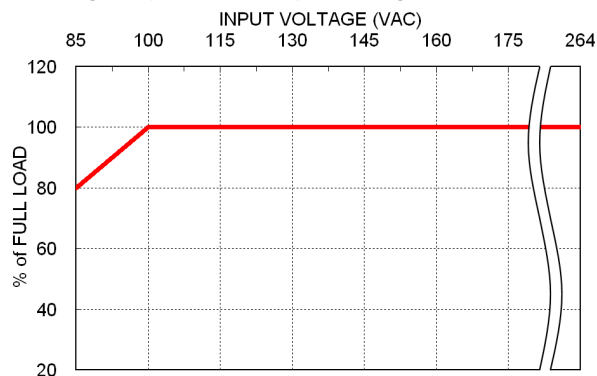
Derating Output Load versus Ambient Temperature  
at 115 Vin



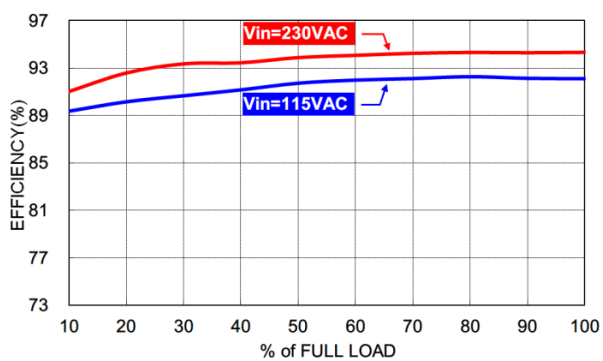
Derating Output Load versus Ambient Temperature  
at 230 Vin



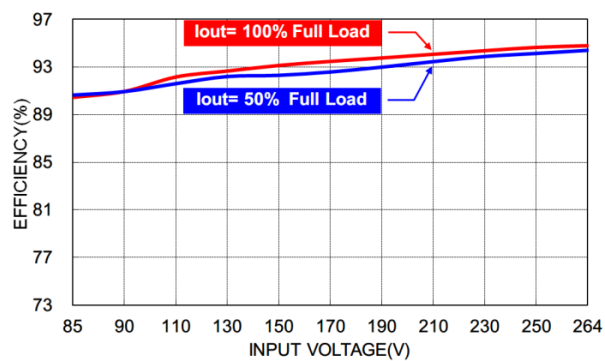
Derating Output versus Input Voltage



Efficiency versus Output Load



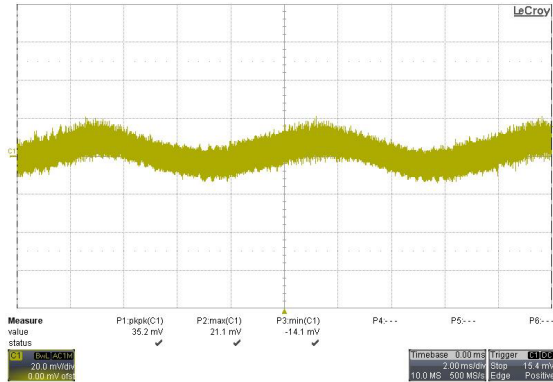
Efficiency versus Input Voltage



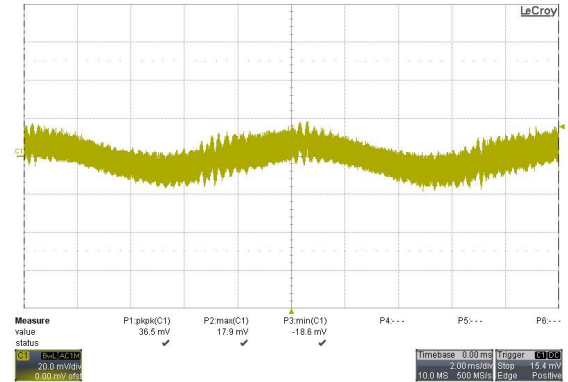


### TPI 180-124(A)-M TPP 180-124(A)-M

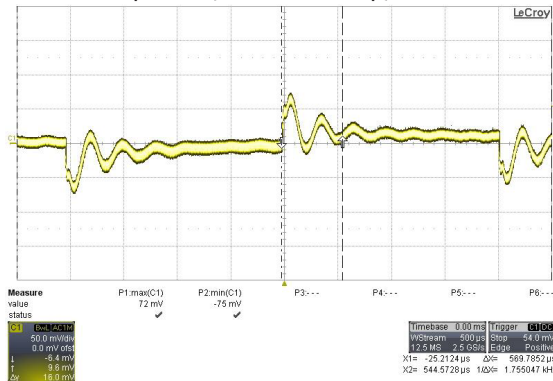
Typical Output Ripple and Noise at 115 Vin



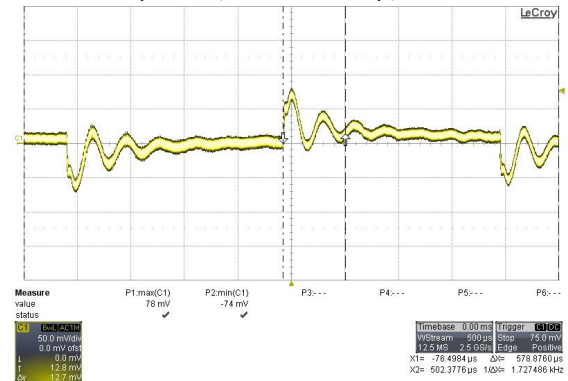
Typical Output Ripple and Noise at 230 Vin



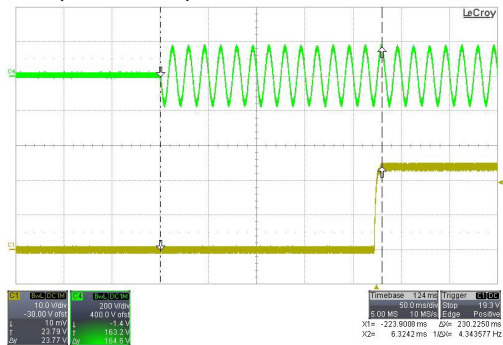
Transient Response (25% load step) at 115 Vin



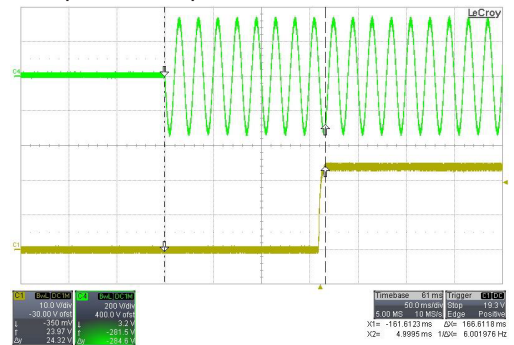
Transient Response (25% load step) at 230 Vin



Typical Input Start-Up Characteristic at 115 Vin



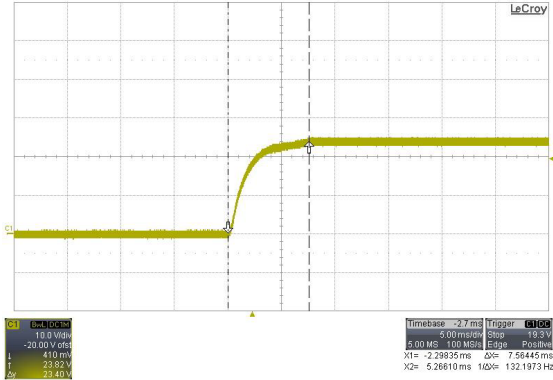
Typical Input Start-Up Characteristic at 230 Vin



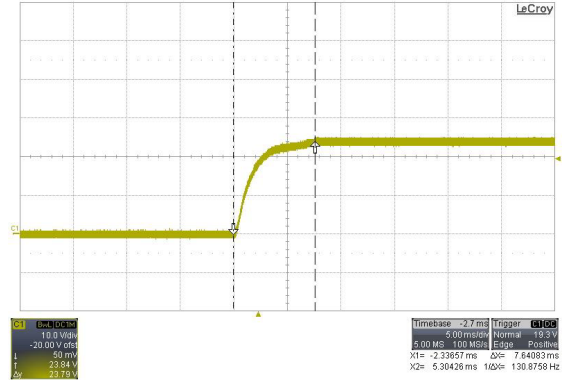


### TPI 180-124(A)-M TPP 180-124(A)-M

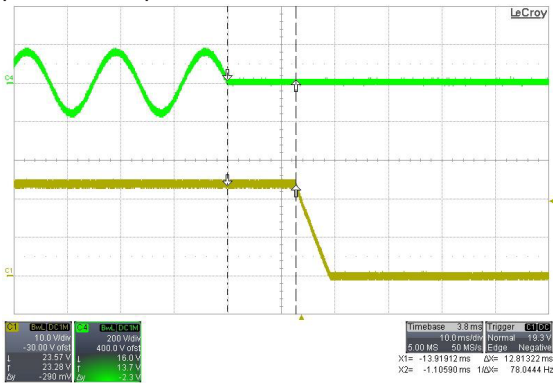
Typical Output Rise Characteristic at 115 Vin



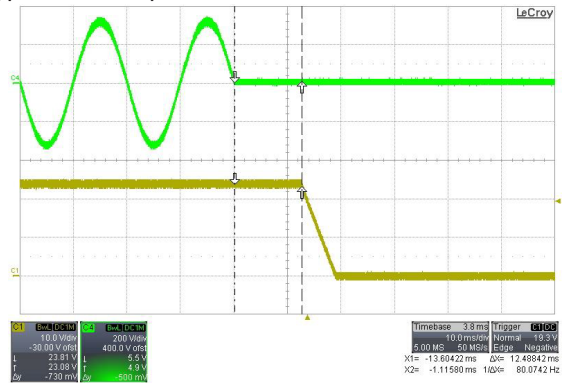
Typical Output Rise Characteristic at 230 Vin



Typical Hold-Up Characteristic at 115 Vin

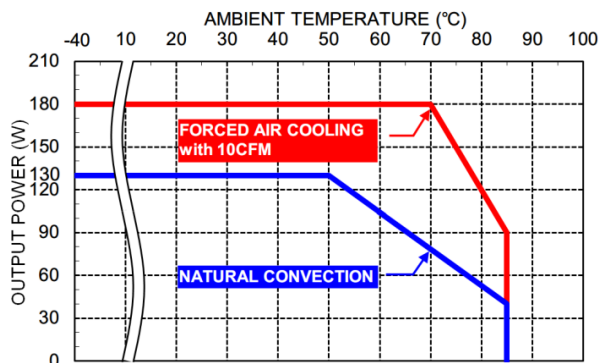


Typical Hold-Up Characteristic at 230 Vin

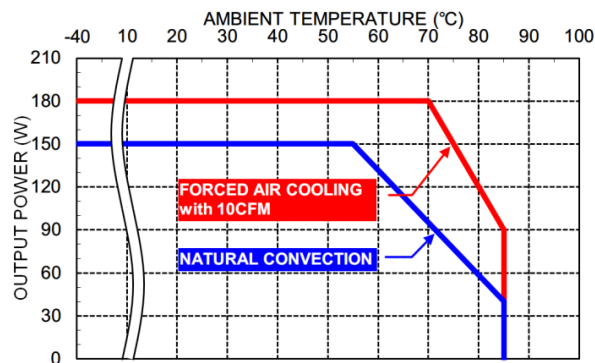


**TPI 180-136(A)-M**  
**TPP 180-136(A)-M**

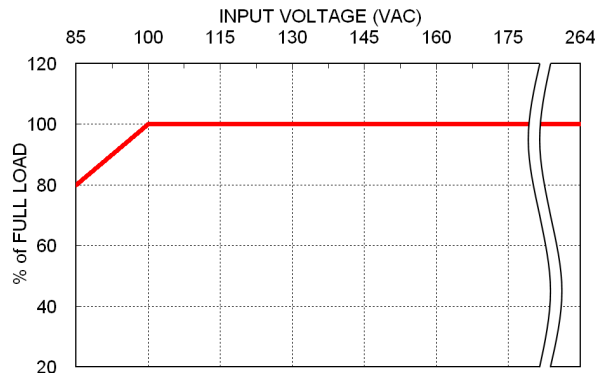
Derating Output Load versus Ambient Temperature  
 at 115 Vin



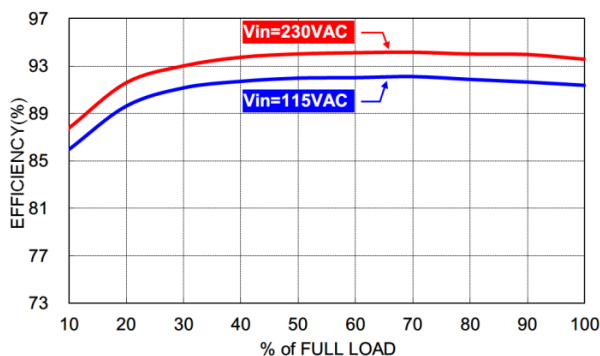
Derating Output Load versus Ambient Temperature  
 at 230 Vin



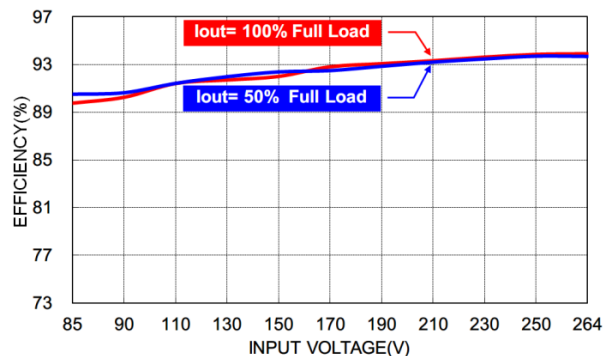
Derating Output versus Input Voltage



Efficiency versus Output Load

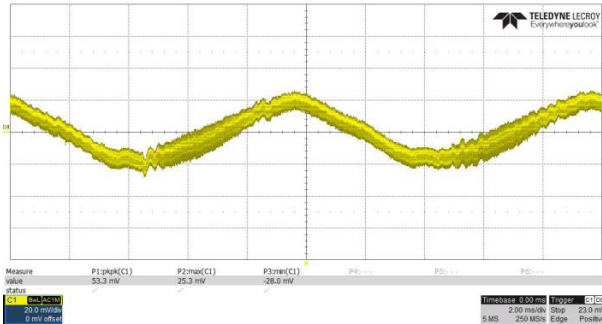


Efficiency versus Input Voltage

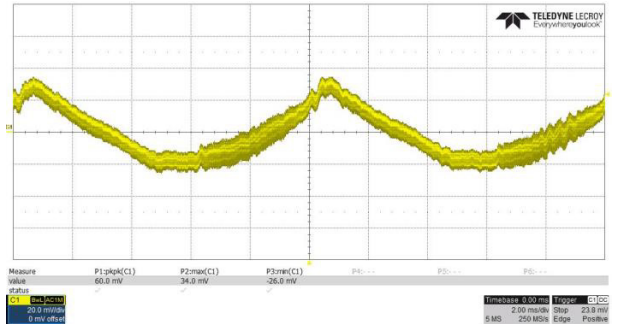


### TPI 180-136(A)-M TPP 180-136(A)-M

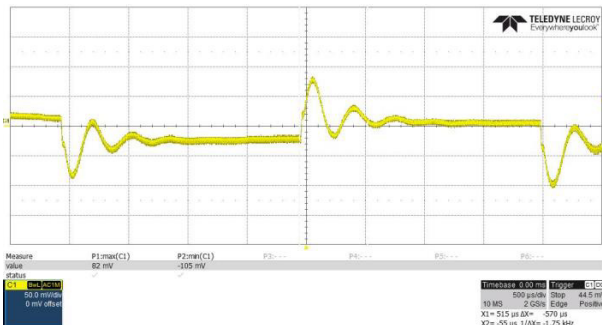
Typical Output Ripple and Noise at 115 Vin



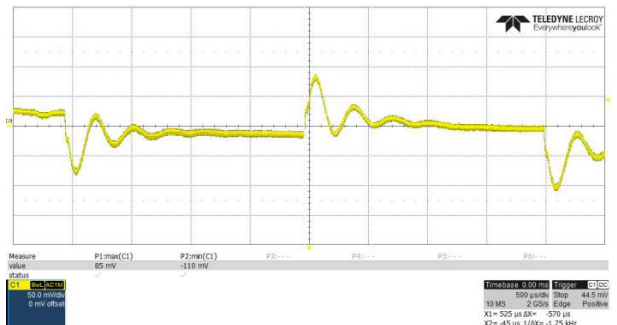
Typical Output Ripple and Noise at 230 Vin



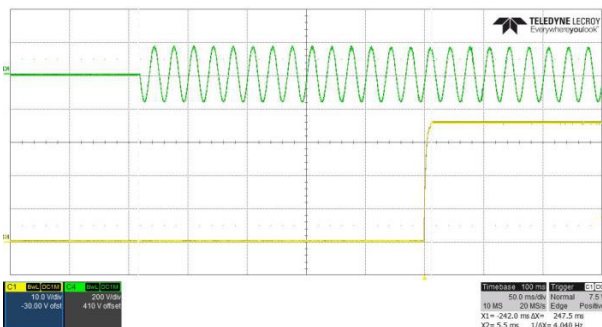
Transient Response (25% load step) at 115 Vin



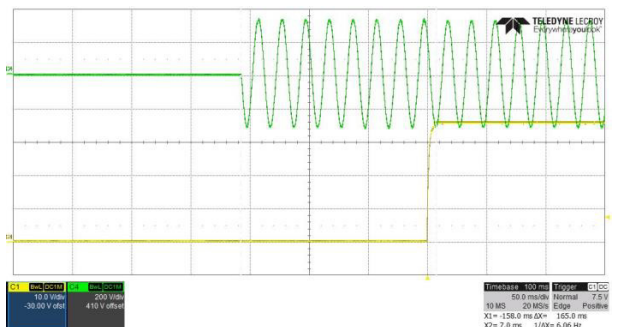
Transient Response (25% load step) at 230 Vin



Typical Input Start-Up Characteristic at 115 Vin

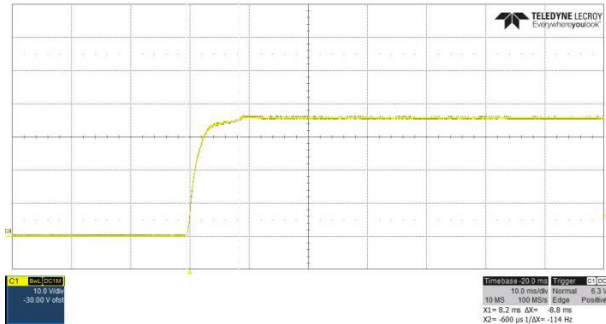


Typical Input Start-Up Characteristic at 230 Vin

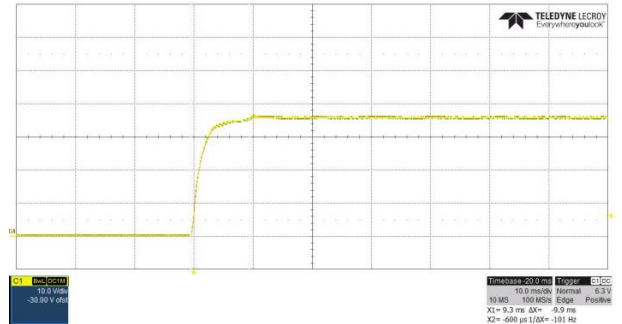


**TPI 180-136(A)-M  
TPP 180-136(A)-M**

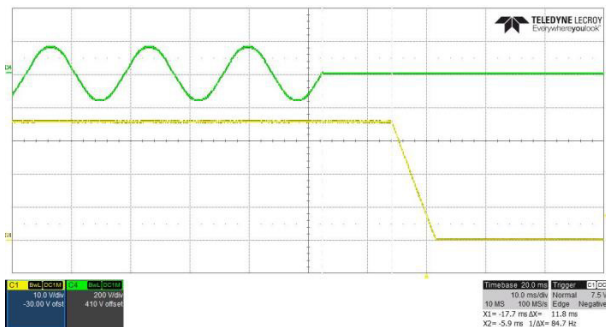
Typical Output Rise Characteristic at 115 Vin



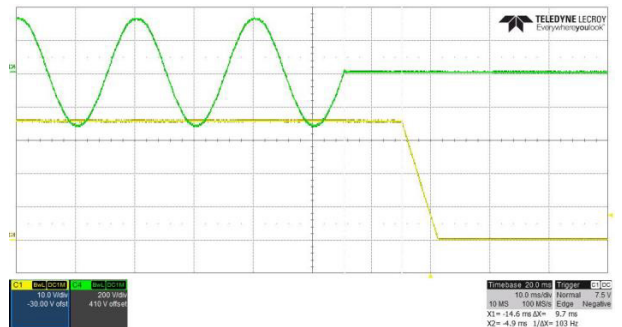
Typical Output Rise Characteristic at 230 Vin



Typical Hold-Up Characteristic at 115 Vin

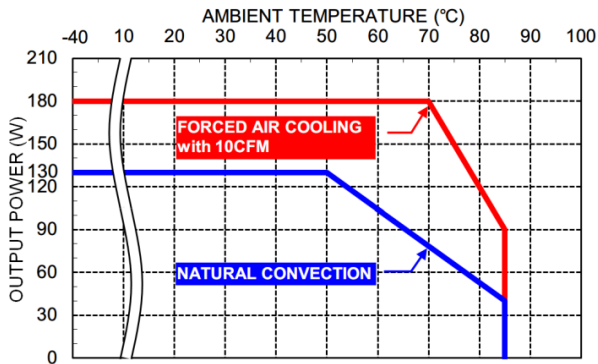


Typical Hold-Up Characteristic at 230 Vin

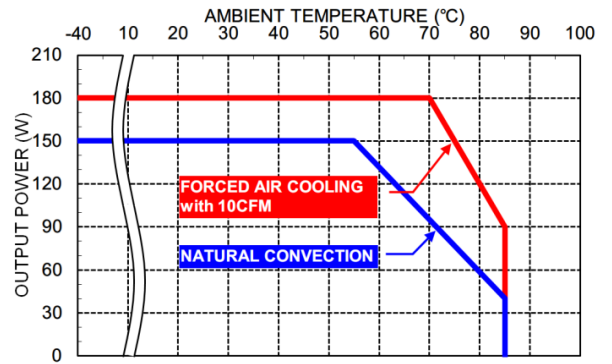


**TPI 180-148(A)-M  
TPP 180-148(A)-M**

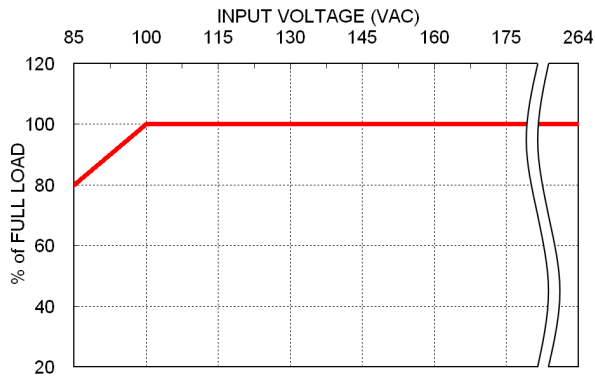
Derating Output Load versus Ambient Temperature  
at 115 Vin



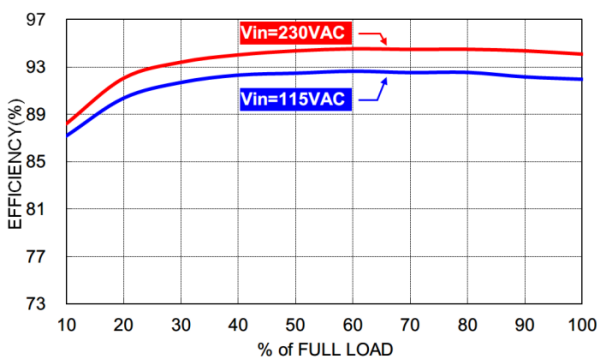
Derating Output Load versus Ambient Temperature  
at 230 Vin



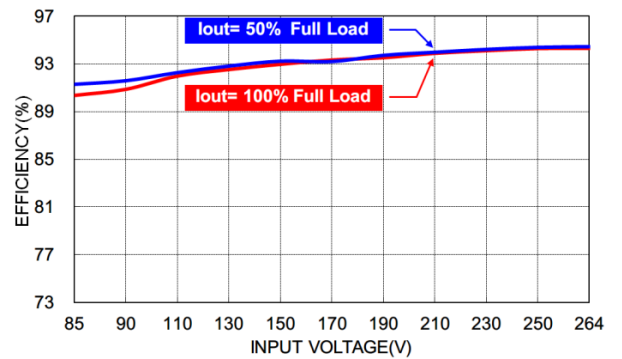
Derating Output versus Input Voltage



Efficiency versus Output Load

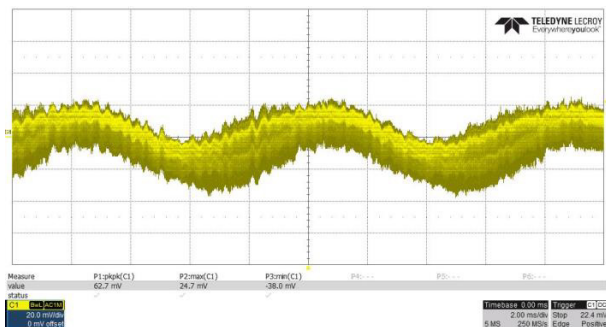


Efficiency versus Input Voltage

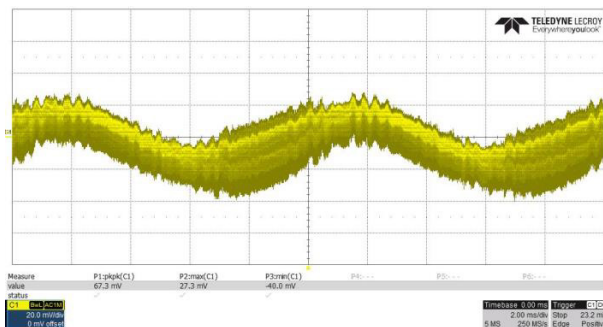


### TPI 180-148(A)-M TPP 180-148(A)-M

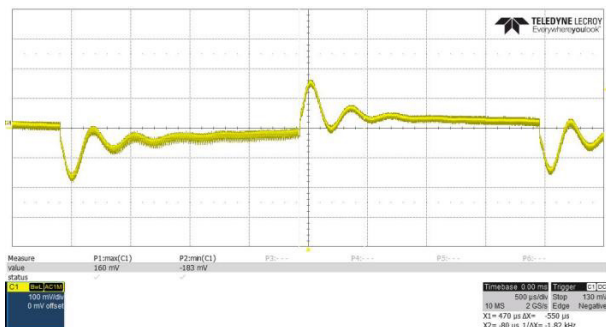
Typical Output Ripple and Noise at 115 Vin



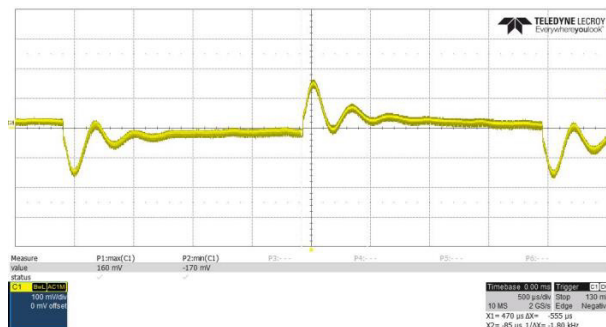
Typical Output Ripple and Noise at 230 Vin



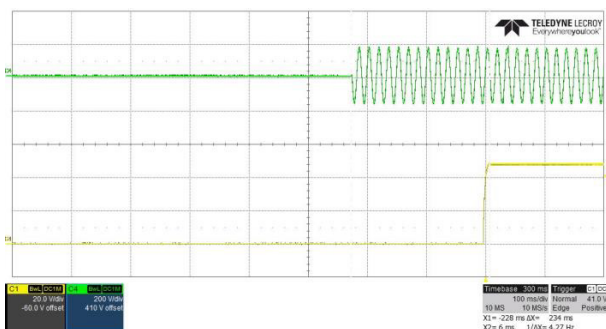
Transient Response (25% load step) at 115 Vin



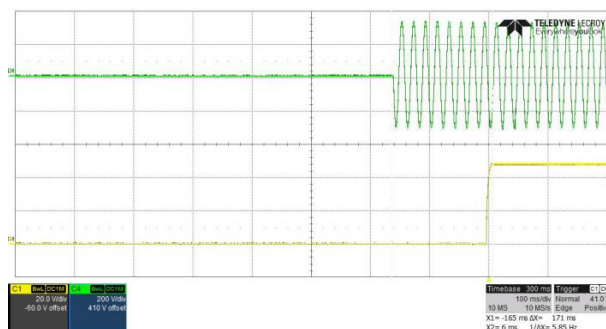
Transient Response (25% load step) at 230 Vin



Typical Input Start-Up Characteristic at 115 Vin

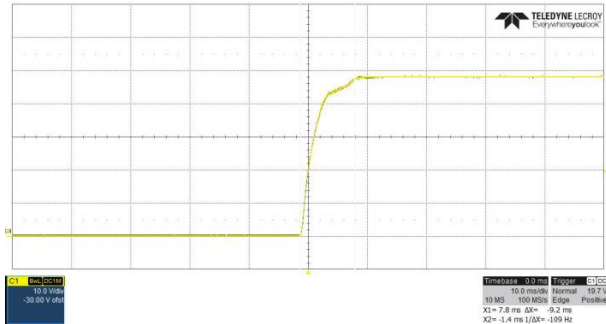


Typical Input Start-Up Characteristic at 230 Vin

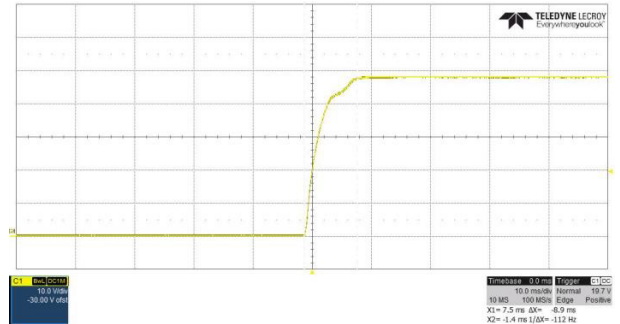


### TPI 180-148(A)-M TPP 180-148(A)-M

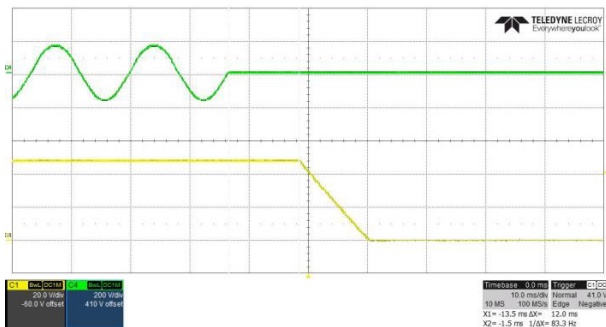
Typical Output Rise Characteristic at 115 Vin



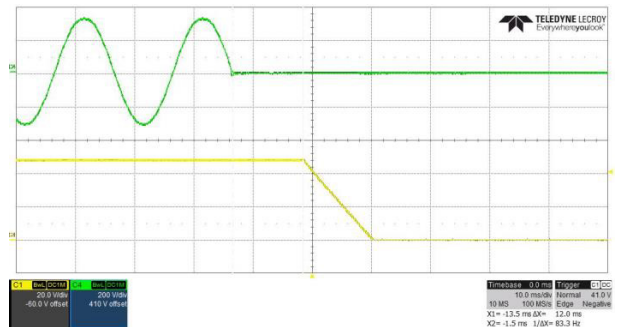
Typical Output Rise Characteristic at 230 Vin



Typical Hold-Up Characteristic at 115 Vin



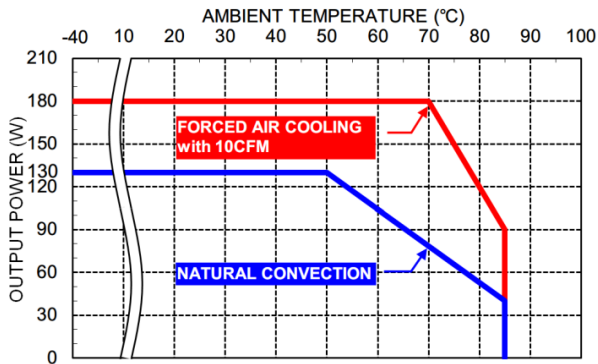
Typical Hold-Up Characteristic at 230 Vin



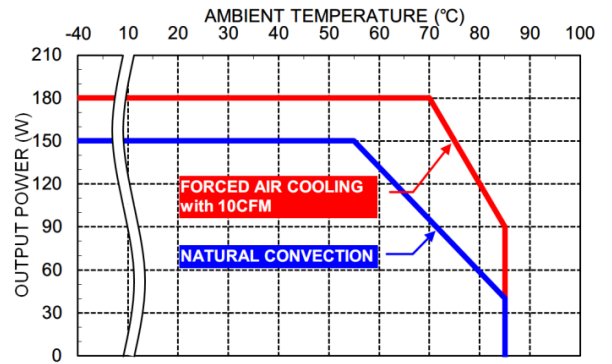


**TPI 180-153(A)-M  
TPP 180-153(A)-M**

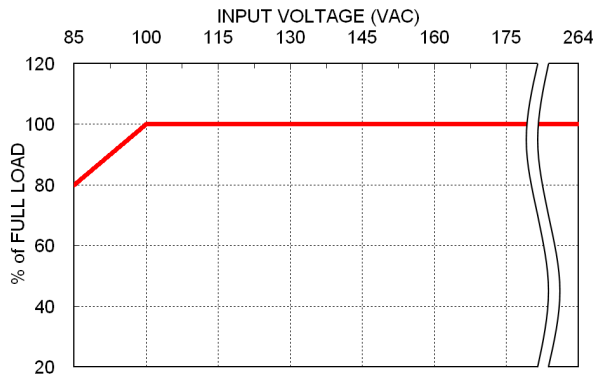
Derating Output Load versus Ambient Temperature  
at 115 Vin



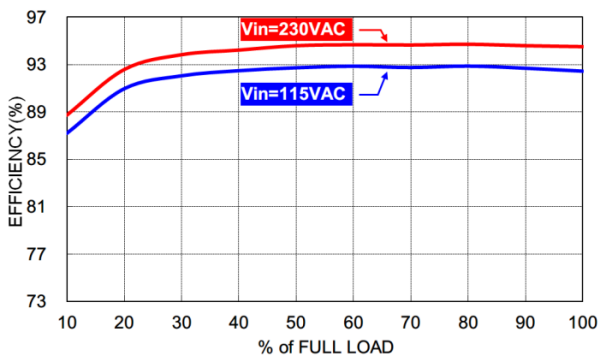
Derating Output Load versus Ambient Temperature  
at 230 Vin



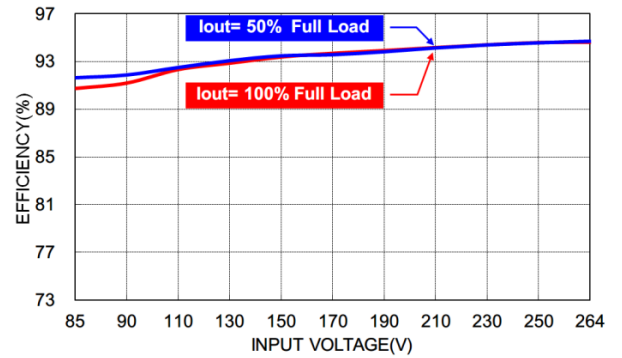
Derating Output versus Input Voltage



Efficiency versus Output Load

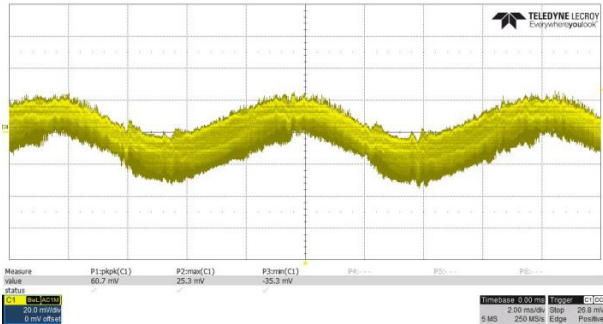


Efficiency versus Input Voltage

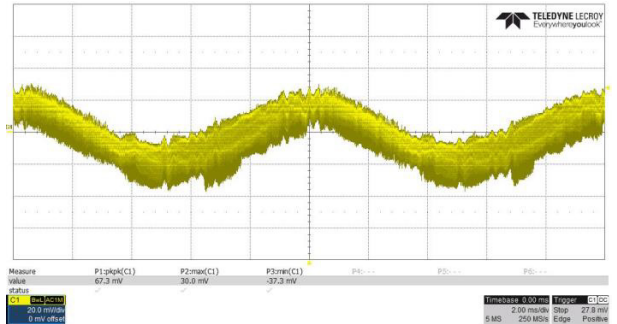


### TPI 180-153(A)-M TPP 180-153(A)-M

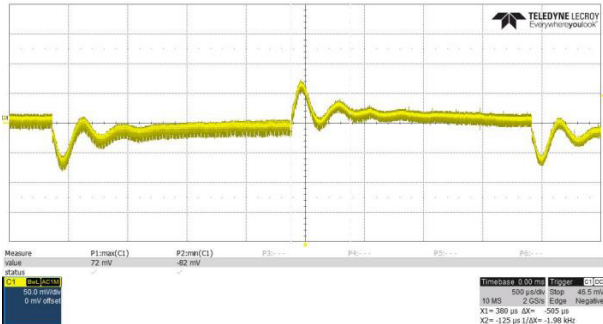
Typical Output Ripple and Noise at 115 Vin



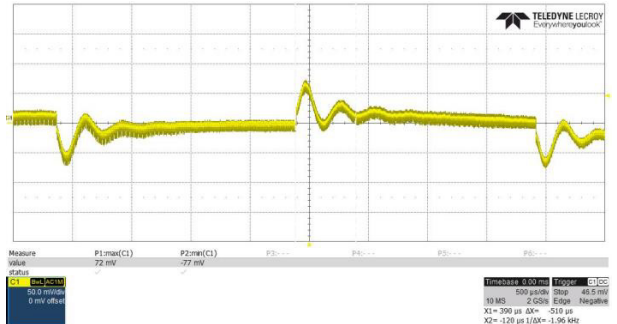
Typical Output Ripple and Noise at 230 Vin



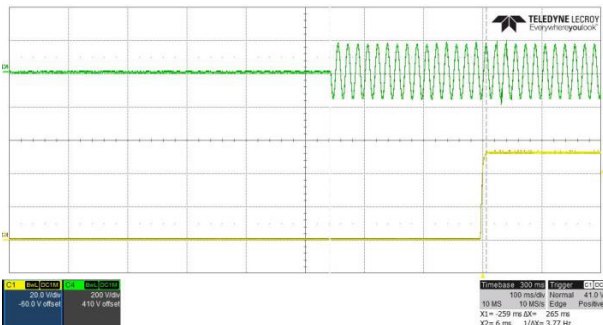
Transient Response (25% load step) at 115 Vin



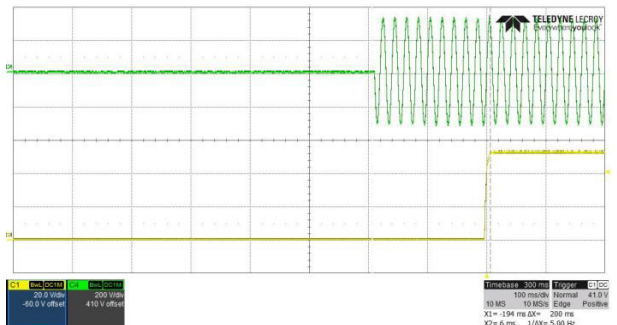
Transient Response (25% load step) at 230 Vin



Typical Input Start-Up Characteristic at 115 Vin

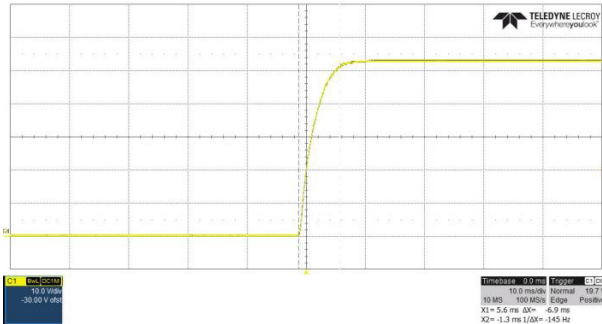


Typical Input Start-Up Characteristic at 230 Vin

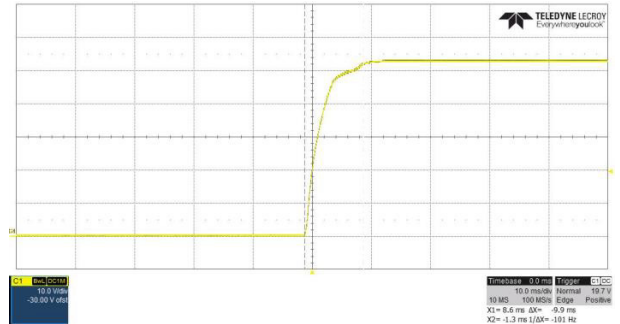


### TPI 180-153(A)-M TPP 180-153(A)-M

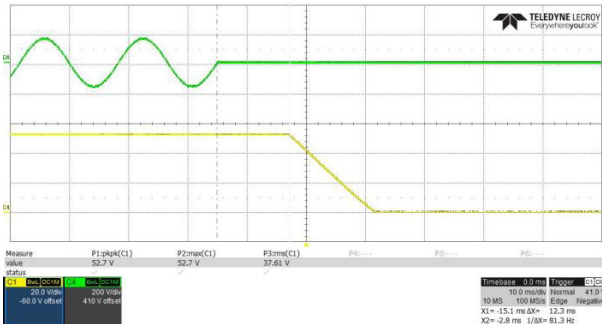
Typical Output Rise Characteristic at 115 Vin



Typical Output Rise Characteristic at 230 Vin



Typical Hold-Up Characteristic at 115 Vin



Typical Hold-Up Characteristic at 230 Vin

