



Title of Change:	Clarifying Power Down Sequence of SPS3 products (FDMF3160, FDMF3170, FDMF3172, FDMF3180) and making Thermal Characteristics table consistent with 5x6 PQFN package across the product family	
Effective date:	20 Aug 2020	
Contact information:	Contact your local ON Semiconductor Sales Office or Ravi.Savanur@onsemi.com	
Type of notification:	This Product Bulletin is for notification purposes only. ON Semiconductor will proceed with implementation of this change upon publication of this Product Bulletin.	
Change Category:	Data sheet update	
Change Sub-Category(s):	Datasheet/Product Doc change	
Sites Affected:		
ON Semiconductor Sites	External Foundry/Subcon Sites	
None	None	
Description and Purpose:		
<p>#1 Power Sequence Update – Only FDMF3170 Datasheet</p> <ul style="list-style-type: none"> The FDMF3170 datasheet on page 13 has a description of the power sequence that needs to be more specific. The below highlighted statement needs to be changed: <p>From:</p> <p>Power Sequence The FDMF3170 requires four (4) input signals to conduct normal switching operation: V_{IN}, V_{CC}/PV_{CC}, PWM, and EN. During power down, PWM must be set to tri-state prior to disabling V_{CC}. Alternately, EN must be pulled low prior to disabling V_{CC}. All other power sequences are available. The below example of a power sequence is for a reference application design:</p> <p>To:</p> <p>... the falling edge of the falling edge of ...</p> <p>#2 Power Sequence Update – Rest of the SPS3 Datasheets</p> <ul style="list-style-type: none"> The other SPS3 datasheets on page 13 has a description of the power sequence that needs to be more clear and match the change of the FDMF3170. The below highlighted statement needs to be changed: <p>From:</p> <p>Power Sequence The FDMF5875 requires four (4) input signals to conduct normal switching operation: V_{IN}, V_{CC}/PV_{CC}, PWM, and EN. All combinations of power sequences are available. The below example of a power sequence is for a reference application design:</p> <p>To:</p> <p>During power down, PWM must be set to tri-state prior to the falling edge of VCC. Alternately, EN must be pulled low prior to the falling edge of VCC. All other power sequences are available.</p> <p>#3 Power Down Sequence Image Addition All Datasheets.</p> <ul style="list-style-type: none"> After the change to the power down sequence sentence, an image will need to be put in order to make it clear for the customers. The below figure will need to be added to the datasheet: 		

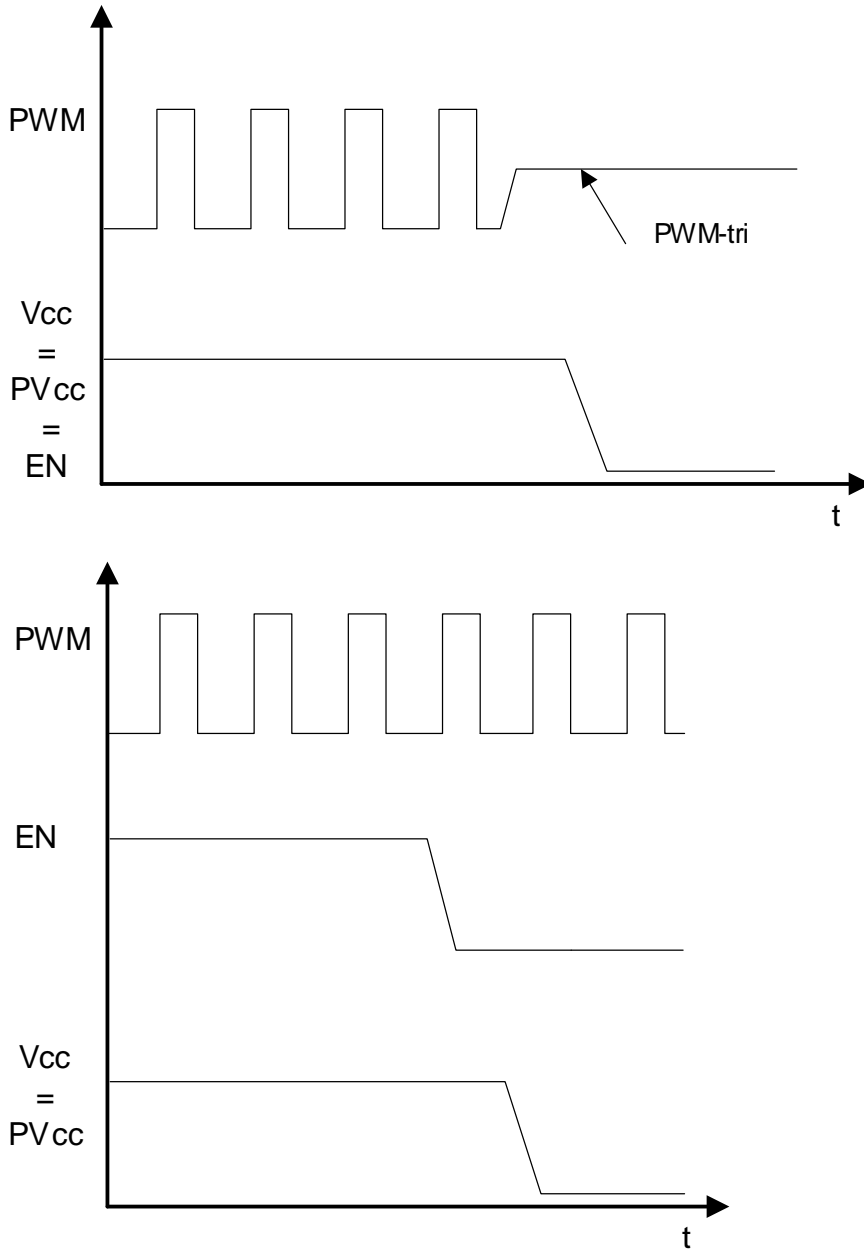


Figure X. Two Recommended Power Down Sequence Waveforms

#4 Thermal Resistance Update – All SPS3 Datasheets

- The values in the SPS3 Absolute Maximum Rating chart on page 4 do not match our latest SPS4 5x6mm package datasheets.
- Both SPS3 and SPS4 datasheets need to be consistent.
- The below highlighted statement needs to be changed:

From:

θ_{J-A}	Junction-to-Ambient Thermal Resistance	10.5	°C/W
θ_{J-PCB}	Junction-to-PCB Thermal Resistance (ON Semiconductor SPS Evaluation Board)	6.5	°C/W
T_c	Ambient Temperature Range	40	+125 °C



To:

θ_{J-A}	Junction-to-Ambient Thermal Resistance (Natural Convection, ON Semiconductor SPS Evaluation RevE Board)		7.9	°C/W
θ_{J-PCB}	Junction-to-PCB Thermal Resistance (Based on Simulation)		1.6	°C/W
θ_{J-C}	Junction-to-Case Thermal Resistance (ON Semiconductor SPS Evaluation RevE Board)		3.5	°C/W

Additionally, θ_{J-PCB} 's description needs to include: (Based on Simulation, w.r.t. PGND)

NOTE1: "The change will not impact form, fit, or function of product(s)"

List of Affected Standard Parts:

Note: Only the standard (off the shelf) part numbers are listed in the parts list. Any custom parts affected by this PCN are shown in the customer specific PCN addendum in the PCN email notification, or on the [PCN Customized Portal](#).

FDMF3160	FDMF3170	FDMF3172
FDMF3180		



Appendix A: Changed Products

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Product	Customer Part Number	Qualification Vehicle	New Part Number	Replacement Supplier
FDMF3170		NA		
FDMF3180		NA		