



Resistors Product Change Notification

PCN Number	PCN-2018-RBU12
PCN Title	PFC 0402 & 0805 PFC Process Upgrade
PCN Date	05 October 2018
Type of Change	<input type="checkbox"/> End of Life Notification <input checked="" type="checkbox"/> Material Change <input checked="" type="checkbox"/> Manufacturing Facility Change or Addition <input checked="" type="checkbox"/> Process Change <input checked="" type="checkbox"/> Datasheet Specification Change <input checked="" type="checkbox"/> Design Change <input type="checkbox"/> Other:
Manufacturing Location(s) Affected	Corpus Christi (USA)
Date of Change Implementation	<p>Phased Implementation by case size:</p> <p>(1) 0805 (Orders placed beginning week commencing 05 November 2018)</p> <p>(2) 0402 (Orders placed beginning week commencing 19 November 2018)</p> <p>Case sizes 0603, 1206, planned Q1 2019, to be addressed by separate PCN.</p> <p>Existing orders at the time of implementation will be supported by either the current our new design product.</p> <p>Product with new and old construction will be supplied until inventories are consumed</p>

Products Affected		
Product Series	Product Type(s)	Datasheet Link
PFC	PFC-W0402LF PFC-W0805LF	Commercial products covered by this PCN: http://www.ttelectronics.com/sites/default/files/resistors-datasheets/PFC.pdf Special products (tight tolerance / TCR / Sn-Pb, etc) outside scope of this PCN but previously included in the PFC datasheet, are addressed in a separate datasheet: http://www.ttelectronics.com/sites/default/files/resistors-datasheets/PFC-S.pdf

Change Detail	
Description of Change	<p>(1) No change to part number or form/fit/function. Updated product will fit the same solder pads but minor tolerance changes have been made (summarized in "Additional Information").</p> <p>(2) Termination modified to align with modern design rules and process techniques, see details below:</p> <ol style="list-style-type: none"> a. Simplified termination stack incorporating thick film conductor inks (Ag / Au) that replace sputtered precious metals in the current design

	<ul style="list-style-type: none"> b. NiCr sputtered wraparound edges c. Outer plated layers are unchanged <p>(3) Introduce state of the art trimming methods as a replacement to photolithography to achieve resistor pattern</p> <p>(4) Switch from diced to scribed ceramics</p> <p>(5) Employ electrical overload screening to 100% of product to remove non typical components from shipped product</p> <p>(6) Introduce digital marking on product size 0805</p> <p>(7) Package product on paper tape for improved pocket definition.</p> <p>(8) New Product is easily distinguished from legacy product by packaging tape (white punched paper tape instead of embossed black plastic) and top coat protection color – black instead of blue, and presence of digital marking on updated product for 0805.</p> <div style="display: flex; justify-content: space-around;">   </div> <p>(9) MOQ is 5000 pieces on all sizes. Standard packaging will be 5K per reel. 1K reel sizes will be available for quotation.</p>
<p>Reason for Change</p>	<p>Changes implemented will provide stable cost basis to support market expectations. Establish capacity increase for PFC using modern manufacturing techniques, materials, and equipment.</p>
<p>Implementation Plan</p>	<p>(1) Included product</p> <ul style="list-style-type: none"> a. Case size 0402, 0805 b. TCR Codes: <ul style="list-style-type: none"> i. -01: 100 ppm ii. -02: 50 ppm iii. -03: 25 ppm iv. -11: 15 ppm v. -12: 10 ppm c. Tolerance: <ul style="list-style-type: none"> i. -B ($\pm 0.1\%$) ii. -C ($\pm 0.25\%$) iii. -D ($\pm 0.5\%$) iv. -F ($\pm 1\%$) v. -G ($\pm 2\%$) vi. -J ($\pm 5\%$) d. R values: <ul style="list-style-type: none"> i. 0402: 15R – 30K ii. 0805: 5R0 – 267K <p>(2) Notify all potentially affected customer, notification to include 2 yr usage, PNs</p>
<p>Customer Impact</p>	<p>(1) No change to form / fit / function.</p> <p>(2) Product encapsulation color will change from blue to black; potential impact on PCB automated inspection processes.</p> <p>(3) Reel size change to 5K SPQ will reduce frequency of reel changes in PCB assembly processes.</p>

Recommendations	Change MRP Systems: <ul style="list-style-type: none"> • MOQ: 5000 pieces • Country of Origin: Taiwan
Availability of Previously Manufactured Product	Previously manufactured product will ship until inventory is exhausted.
Availability of Approval Samples	Product functions identically in for purposes of Form / Fit / Function. Sample requests will be considered individually, will be subject to product lead time.
Sales Contacts	Americas: Kevin Marzano kevin.marzano@ttelelectronics.com Asia: Janson Chuen janson.chuen@ttelelectronics.com Europe (EMEA): Peter Bauer peter.bauer@ttelelectronics.com Distribution (Global): David Burns david.burns@ttelelectronics.com http://www.ttelelectronics.com/resistors

Approval			
	Name	Title	Date
Issued by	David Winkler	Product Line Manager, Thin Film Products	25 Sept 2018
Approved by	Barry Peters	VP, Product Management & Engineering	25 Sept 2018
Approved by	David Kertes	VP, Global Sales and Marketing	26 Sept 2018
Approved by	Guy Millard	Vice President & General Manager, Resistors Business Unit	1 Oct 2018

Additional Information

Minor Modifications to dimensional tolerances: dimensional nominal values are unchanged, but some minor changes will be implemented. Dimensional tolerances are summarized below, with changed values **highlighted yellow**.

Style		L	W	H	A	B
W0402	Inches	±0.003	±0.005	±0.003	-0.004 / +0.008	±0.006
	(mm)	(±0.07)	(±0.12)	(±0.08)	(-0.1 / +0.2)	(±0.15)
W0805	Inches	±0.006	±0.007	±0.006	±0.009	±0.008
	(mm)	(±0.16)	(±0.18)	(±0.14)	(±0.23)	(±0.21)

Price sheet attached for reference