

Listing of PCNs

Introduction

This file contains PCN information for the product(s) referenced by the file name.

Note that the file may contain multiple PCNs. If this is the case, they are arranged in chronological order, so to see the most recent PCN scroll to the end.

General Note

TT Electronics reserves the right to make changes in product specification without notice or liability.
All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

BI Technologies IRC Welwyn

<http://www.ttelectronics.com/resistors>

Welwyn Change Management Contact

Name Stephen Oxley

E-mail stephen.oxley@welwyn-tt.com

Product Change Notification

Date 28th September 2009

PCN No R009

Type of Change Notification

Value range reduction

Specification Ref (Number + Version)

Product Datasheet dated 03.08

<http://www.welwyn-tt.com/pdf/datasheet/MFR.PDF>

Key Characteristics of the Change

Reduction in MFR4 ohmic value range

Customer (to be completed by Sales)

Description of Change (Product Characteristics affected)

Upper ohmic value limit of MFR4 will be reduced from 10M to 1M0.

Reason

Rationalisation of film resistor range.

Verification

N/A

Change Active from September 2009

Customer Impact of Change and Recommended Action:

Qualify alternative product (see supplementary information.)

Last Time Buy orders on withdrawn products will be accepted until **30th November 2009**

Product Affected & Welwyn Order Codes

Order Codes	Type	Description	QTY
MFR4-xMxl e.g. MFR4-4M7FI	MFR Series	Metal film resistors	All

Approved By: (Print) **Stephen Oxley**

Sign: _____

Authorised By: (Print) **Barry Peters**

Sign: _____

Title: (Print) **Snr. Applications Engineer**

Date: 28th November 2009

Title: (Print) **Resistor BU Director**

Date: 28th November 2009

Supplementary Information

The closest alternative type is high voltage metal film resistor MH25.

<http://www.welwyn-tt.com/pdf/datasheet/MH.PDF>

This matches MFR4 in body size. It exceeds the rating of MFR4 (rated voltages are in the range 500V (1M0) to 1600V (10M) for MH25, compared to 350V for MFR4). The coating material of MH25 is grey flameproof cement, instead of blue lacquer.

Resistors Product Change Notification

PCN Number	PCN-2016-RBU17
PCN Title	CECC Approved SnPb MFR 4 & 5 EOL
PCN Date	11 th October 2016
Type of Change	<input checked="" type="checkbox"/> End of Life Notification <input type="checkbox"/> Manufacturing Facility Change or Addition <input type="checkbox"/> Datasheet Specification Change <input type="checkbox"/> Other: <input type="checkbox"/> Material Change <input type="checkbox"/> Process Change <input type="checkbox"/> Design Change
Manufacturing Location(s) Affected	TT electronics Welwyn, UK
Date of Change Implementation	10 th December 2016

Products Affected		
Product Series	Product Type(s)	Datasheet Link
MFR Series – Metal Film Resistors	All CECC approved SnPb MFR 4 & 5	http://www.ttelectronicsresistors.com/datasheets/mfr.pdf
Change Detail		
Description of Change	From May 2017, TT electronics will be manufacturing MFR series product in Mexicali, Mexico. CECC approved MFR4 & 5 parts, with Tin/Lead terminations, will be EOL from 1st May 2017. Note: Tin/Lead coated product is still available without CECC Approval This does not impact RoHs Compliant CECC approved parts	
Reason for Change	MFR4 & 5 parts, with Tin/Lead terminations, will not gain CECC approval to process in the country of Mexico.	
Implementation Plan	TT electronics will notify, via PCN-2016-RBU17, all active MFR 4&5 customers on October 11, 2016. The last time buy date for CECC approved, SnPb MFR 4&5 product is December 10, 2016. TT electronics will build last time orders at their Welwyn facility through the end of April 2017. The last production day of CECC approved MFR 4&5 SnPb product at TT electronics Welwyn will be Friday April 28, 2017.	

Customer Impact	TT electronics will notify customers via PCN-2016-RBU17. Last time buy orders must be placed by December 10 th 2016
Recommendations	NA
Availability of Previously Manufactured Product	NA
Availability of Approval Samples	NA
Sales Contacts	Americas: Mike Graham mike.graham@ttelelectronics.com Asia: Janson Chuen janson.chuen@ttelelectronics.com Europe (EMEA): Klaus Zwerschina klaus.zwerschina@ttelelectronics.com http://www.ttelelectronicsresistors.com/sales.php

Approval			
	Name	Title	Date
Issued by	David Peters	Product Line Manager	11/10/2016
Approved by	Barry Peters	VP R&D	11/10/2016
Approved by	Klaus Zwerschina	Global Sales Director	11/10/2016

Additional Information

NA

Resistors Product Change Notification

PCN Number	PCN-2018-RBU02
PCN Title	End Of Life Notification – Leaded MFR & MFR4P Series
PCN Date	01/05/2018
Type of Change	<input checked="" type="checkbox"/> End of Life Notification <input type="checkbox"/> Material Change <input type="checkbox"/> Manufacturing Facility Change or Addition <input type="checkbox"/> Process Change <input type="checkbox"/> Datasheet Specification Change <input type="checkbox"/> Design Change <input type="checkbox"/> Other:
Manufacturing Location(s) Affected	Mexicali, Mexico & Bedlington, UK
Date of Change Implementation	May 2018

Products Affected		
Product Series	Product Type(s)	Datasheet Link
MFR	MFR4 PB & HL	http://www.ttelectronics.com/sites/default/files/resistors-datasheets/MFR.pdf
	MFR5 PB & HL	http://www.ttelectronics.com/sites/default/files/resistors-datasheets/MFR.pdf
MFR4P	MFR4P	http://www.ttelectronics.com/sites/default/files/resistors-datasheets/MFR4P.pdf

Change Detail	
Description of Change	TT Electronics is declaring the above products and all customer specific variants as EOL. NOTE* This EOL does not impact commercial or professional grade Pb free parts. (part numbers ending "C" or "I")
Reason for Change	Due to declining sales and decreased market demand, these products are no longer economically viable to manufacture
Implementation Plan	Parts are EOL with no last time buy available. TT Electronics no longer have the capability to manufacture these parts
Customer Impact	Parts are EOL with no last time buy available. Pb Free alternatives are still available

Recommendations	N/A
Availability of Previously Manufactured Product	No previously manufactured product is available
Availability of Approval Samples	N/A
Sales Contacts	<p>Americas OEM: Kevin Marzano Kevin.marzano@ttelectronics.com</p> <p>Europe (EMEA): Peter Bauer Peter.bauer@ttelectronics.com</p> <p>Asia OEM & Distribution: Janson Chuen janson.chuen@ttelectronics.com</p> <p>Americas Distribution: Jason Gildea Jason.gildea@ttelectronics.com</p> <p>Europe (EMEA) Distribution: Claudia Patzak-Kruger Claudia.patzak@ttelectronics.com</p> <p>http://www.ttelectronicsresistors.com/sales.php</p>

Approval			
	Name	Title	Date
Issued by	David Peters	Product Line Manager	01/05/2018
Approved by	Barry Peters	VP Product Management and Engineering	01/05/2018

Resistors Product Change Notification

PCN Number	PCN-2025-RBU02
PCN Title	Removal of EN/IECQ-CECC from some CR, MFR & RC Types
PCN Date	28 th February 2025
Type of Change	<input type="checkbox"/> End of Life Notification <input type="checkbox"/> Manufacturing Facility Change or Addition <input checked="" type="checkbox"/> Datasheet Specification Change <input type="checkbox"/> Other: <input type="checkbox"/> Material Change <input type="checkbox"/> Process Change <input type="checkbox"/> Design Change
Manufacturing Location(s) Affected	TT Electronics Bedlington - Welwyn (UK)
Date of Change Implementation	1 st of March 2025

Products Affected	
TT Series	Datasheet Link
RC-65 RC-70 MFR5 CR2010 CR2512	https://www.ttelectronics.com/TTElectronics/media/ProductFiles/Datasheet/RC.pdf https://www.ttelectronics.com/TTElectronics/media/ProductFiles/Datasheet/MFR.pdf https://www.ttelectronics.com/TTElectronics/media/ProductFiles/Datasheet/CR.pdf

Change Detail	
Description of Change	TT Electronics is removing the option of EN or IECQ-CECC release from the products listed in APPENDIX A. The products are still available with commercial release. Please note that products with commercial release are in no way different from those which have been supplied with EN or IECQ-CECC release. Furthermore, there will be no change at all to any of the products, the processes, or the locations of manufacture.
Reason for Change	The demand for EN or IECQ-CECC release on the affected products is too low to justify the continued maintenance of this option.
Implementation Plan	N/A
Customer Impact	<p>In most cases the requirement for EN or IECQ-CECC release is not reflected in our MPN, so no MPN changes are required as a result of this PCN. The one exception is IECQ-CECC40101-804 (RC series), where the part number adopts the suffix 804. Any RC65 part numbers with the suffix 804 will be obsolete. The commercial released alternatives in this case are, for example:</p> <ul style="list-style-type: none"> RC65Y-31K6B-804 (Pb-free terminations) may be replaced by RC65Y-31K6BI RC65Y-31K6BPB-804 (SnPb terminations) may be replaced by RC65Y-31K6BPB.
Recommendations	
Availability of Previously Manufactured Product	N/A

Availability of Approval Samples	N/A
Sales Contacts	Americas: Greg Hawkins greg.hawkins@ttelectronics.com Europe: Simon Webb simon.webb@ttelectronics.com Asia: Praveen Kumar Praveen.Kumar@ttelectronics.com

Approvals			
	Name	Title	Date
Issued by	Mario Garsi	Product Line Manager	21 st February 2025
Approved by	Klaus Zwerschina	VP Sales	21 st February 2025

Appendix A

<u>Product Series</u>	<u>Product Type</u>	<u>Standards to which Release is no longer offered</u>
<u>RC</u>	RC65	EN140101-806, IECQ-CECC40101-004, IECQ-CECC40101-804
	RC70	IECQ-CECC40101-004, IECQ-CECC40101-804
<u>MFR</u>	MFR5	IECQ-CECC40101-019, IECQ-CECC40101-803
<u>CR</u>	CR2010	IECQ-CECC40401-008
	CR2512	IECQ-CECC40401-008

Note also that EN or IECQ-CECC release is still available for the following product types which are in the same series as those listed above: RC55, MFR4, CR0805 and CR1206.

Appendix B

RC Series

-Former Data Sheet Release:

The requirements of the following standards are met or exceeded by the corresponding RC series products above.

EN140101-806 Requirements		B	C
Power rating @70°C	W	0.4	0.5
Qualified resistance range	ohms	56R – 820K	56R – 1M0
Limiting element voltage	V	300	500
Isolation voltage	V	500	750
TCR ¹	ppm/°C	10, 15, 25, 50	
Resistance tolerance	%	0.1, 0.25, 0.5, 1	

IECQ-CECC 40101-004 Requirements		H	J	K	K	L
Power rating @70°C	W	0.063	0.125	0.25		0.5
Qualified resistance range	ohms	1R0 – 1M0		10R – 1M0		
Limiting element voltage	V	200		250		350
Isolation voltage	V	280		350		500
TCR ¹	ppm/°C	15, 25, 50, 100				
Resistance tolerance	%	0.05, 0.1, 0.25, 0.5, 1				

IECQ-CECC 40101-804 Requirements		A	B	B	C
Power rating @70°C	W	0.125	0.25		0.5
Qualified resistance range	ohms	1R0 – 1M0		10R – 1M0	
Limiting element voltage	V	200	250		350
Isolation voltage	V	280	350		500
TCR ¹	ppm/°C	15, 25, 50			
Resistance tolerance	%	0.1, 0.25, 0.5, 1			

Note 1: In these standards TCRs are not specified for values <5R0, and for values ≥5R0 and <10R the TCR limit is 2 x the stated figure.

-New Data Sheet Release:

The requirements of the following standards are met or exceeded by the corresponding RC series products above.

EN140101-806 Requirements		B	
Required power rating @70°C	W	0.4	
Qualified resistance range	ohms	56R – 820K	
Required limiting element voltage	V	300	
Required isolation voltage	V	500	
Required TCR ¹	ppm/°C	10, 15, 25, 50	
Required resistance tolerance	%	0.1, 0.25, 0.5, 1	

IECQ-CECC 40101-004 Requirements		H	J	K
Required power rating @70°C	W	0.063	0.125	0.25
Qualified resistance range	ohms	1R0 – 1M0		
Required limiting element voltage	V	200	250	
Required isolation voltage	V	280	350	
Required TCR ¹	ppm/°C	15, 25, 50, 100		
Required resistance tolerance	%	0.05, 0.1, 0.25, 0.5, 1		

IECQ-CECC 40101-804 Requirements		A	B
Required power rating @70°C	W	0.125	0.25
Qualified resistance range	ohms	1R0 – 1M0	
Required limiting element voltage	V	200	250
Required isolation voltage	V	280	350
Required TCR ¹	ppm/°C	15, 25, 50	
Required resistance tolerance	%	0.1, 0.25, 0.5, 1	

Note 1: In these standards TCRs are not specified for values <5R0, and for values ≥5R0 and <10R the TCR limit is 2 x the stated figure.

MFR Series

-Former Data Sheet Release:

IECQ-CECC 40101 - 019 Requirements		FZ	FX	EZ	EX
Power rating at 70°C	watts	0.25	0.25	0.5	0.5
Resistance range	ohms	1 to 1M	1 to 1M	10 to 1M0	10 to 1M
Limiting element voltage	volts	250	250	350	350
TCR	ppm/°C	100	250	100	250
		5.1 to 9.1 : 200	5.1 to 9.1 : 500		
Resistance tolerance	%	1	1	1	1

IECQ-CECC 40101 - 803 Requirements		BC	BK	CC	CK
Power rating at 70°C	watts	0.125	0.125	0.25	0.25
Resistance range	ohms	10 to 1M	10 to 1M	10 to 1M	10 to 1M
Limiting element voltage	volts	200	200	250	250
TCR	ppm/°C	50	100	50	100
Resistance tolerance	%	0.5, 1	0.5, 1	0.5, 1	0.5, 1

These tables indicate the CECC specification requirements, and these are met or exceeded by the corresponding MFR series products.

-New Data Sheet Release:

The requirements of the following standards are met or exceeded by the corresponding MFR series products above.

IECQ-CECC 40101-019 Requirements		FZ	FX
Required power rating @ 70°C	W	0.25	
Qualified resistance range	ohms	1R0 – 1M0	
Required limiting element voltage	V	250	
Required TCR	ppm/°C	≥5R1 - ≤9R1: 200, >9R1: 100	≥5R1 - ≤9R1: 500, >9R1: 250
Required resistance tolerance	%	1	

IECQ-CECC 40101-803 Requirements		BC	BK
Required power rating @ 70°C	W	0.125	
Qualified resistance range	ohms	10R – 1M0	
Required limiting element voltage	V	200	
Required TCR	ppm/°C	50	100
Required resistance tolerance	%	0.5, 1	

CR Series

-Former Data Sheet Release:

The requirements of the following standards are met or exceeded by the corresponding CR products above.

EN140401-802 Requirements		RR2012M		RR3216M		
Power rating at 70°C	W	0.125		0.25		
Resistance range	Ω	1R5 – 10M		1R5 – 10M		
Limiting element voltage	V	150		200		
TCR -55 to +125°C	ppm/°C	<10R: 200, 10R-1M0: 100, >1M0: 200				
Resistance tolerance	%	<10R: 5, 10R-1M0: 1, 2, 5, >1M0: 5				
Ambient temperature range	°C	-55 to +125				
IECQ-CECC 40401-004 Requirements		CR0805		CR1206		
Power rating at 70°C	W	0.125		0.25		
Resistance range	Ω	1R0 – 10M		1R0 – 10M		
Limiting element voltage	V	100		200		
TCR -55 to +125°C	ppm/°C	<10R: 200, 10R-1M0: 100, >1M0: 200				
Resistance tolerance	%	1, 2, 5				
Ambient temperature range	°C	-55 to +125				
IECQ-CECC 40401-008 Requirements		CR0603 ¹	CR0805	CR1206	CR2010	CR2512
Power rating at 70°C	W	0.1	0.125	0.25	0.5	1
Resistance range	Ω	1R0 – 10M		1R0 – 10M	1R0 – 1M0	
Limiting element voltage	V	75	100	200	400	500
TCR -55 to +155°C	ppm/°C	<10R: 200, 10R-1M0: 100, >1M0: 250				
Resistance tolerance	%	0.5, 1, 2, 5	0.1, 0.25, 0.5, 1, 2, 5	0.25, 0.5, 1, 2, 5		
Ambient temperature range	°C	-55 to +155				
Note 1: CR0603 meets the requirements of IECQ-CECC 40401-008. Certification pending.						
IECQ-CECC 40401-003 Requirements		CR0805		CR1206		
Power rating at 70°C	W	0.063		0.125		
Resistance range	Ω	1R0 – 3M0		1R0 – 5M0		
Limiting element voltage	V	100		200		
TCR -55 to +125°C	ppm/°C	<5R0: 500, 5R0-10R: 350, 10R-3M0: 100, >3M0: 250				
Resistance tolerance	%	0.5, 1, 2, 5				
Ambient temperature range	°C	-55 to +125				

-New Data Sheet Release:

The requirements of the following standards are met or exceeded by the corresponding CR products above.

EN140401-802 Requirements		RR2012M		RR3216M	
Required power rating at 70°C	W	0.125		0.25	
Qualified resistance range	Ω	1R5 – 10M		1R5 – 10M	
Required limiting element voltage	V	150		200	
Required TCR -55 to +125°C	ppm/°C	<10R: 200, 10R-1M0: 100, >1M0: 200			
Required resistance tolerance	%	<10R: 5, 10R-1M0: 1, 2, 5, >1M0: 5			
Required ambient temperature range	°C	-55 to +125			
IECQ-CECC 40401-004 Requirements		CR0805		CR1206	
Required power rating at 70°C	W	0.125		0.25	
Qualified resistance range	Ω	1R0 – 10M		1R0 – 10M	
Required limiting element voltage	V	100		200	
Required TCR -55 to +125°C	ppm/°C	<10R: 200, 10R-1M0: 100, >1M0: 200			
Required resistance tolerance	%	1, 2, 5			
Required ambient temperature range	°C	-55 to +125			
IECQ-CECC 40401-008 Requirements		CR0805		CR1206	
Required power rating at 70°C	W	0.125		0.25	
Qualified resistance range	Ω	1R0 – 10M		1R0 – 10M	
Required limiting element voltage	V	100		200	
Required TCR -55 to +155°C	ppm/°C	<10R: 200, 10R-1M0: 100, >1M0: 250			
Required resistance tolerance	%	0.1, 0.25, 0.5, 1, 2, 5			
Required ambient temperature range	°C	-55 to +155			
IECQ-CECC 40401-003 Requirements		CR0805		CR1206	
Required power rating at 70°C	W	0.063		0.125	
Qualified resistance range	Ω	1R0 – 3M0		1R0 – 5M0	
Required limiting element voltage	V	100		200	
Required TCR -55 to +125°C	ppm/°C	<5R0: 500, 5R0-10R: 350, 10R-3M0: 100, >3M0: 250			
Required resistance tolerance	%	0.5, 1, 2, 5			
Required ambient temperature range	°C	-55 to +125			