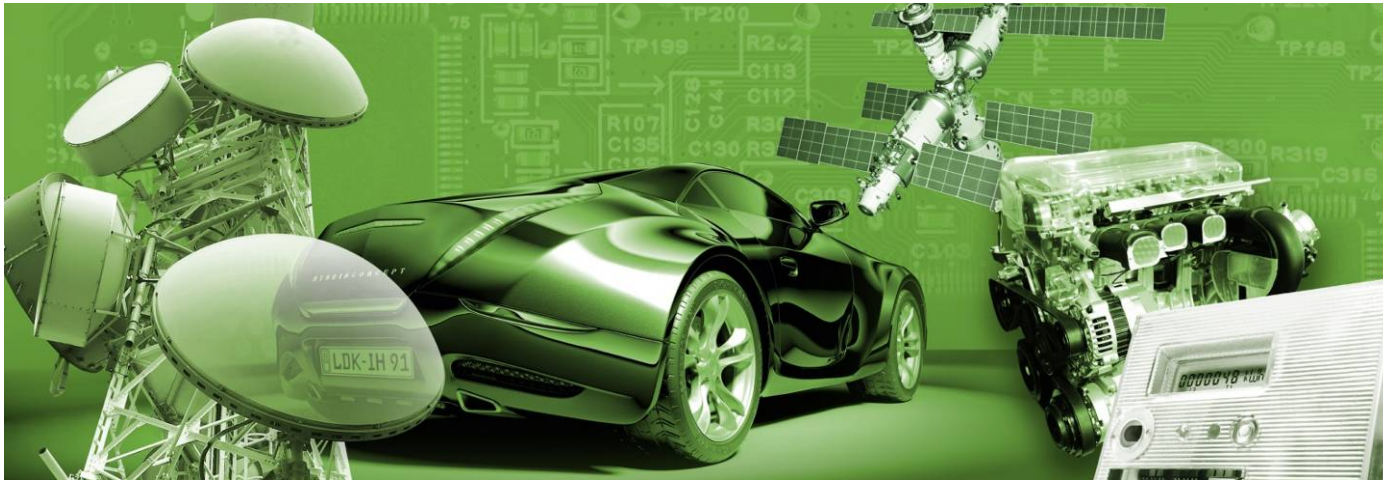


# ESCCON 2019 – Isabellenhütte Heusler GmbH & Co. KG



# ESCCON 2019

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ISABELLENHÜTTE HEUSLER GMBH & CO. KG

## Isabellenhütte Heusler GmbH & Co. KG

The company is one of the world's leading manufacturers of precision alloys for temperature measurement and a well known manufacturer of passive components for the automotive, electrical and electronics industry.

Our precision measurement systems set the industry benchmark for current, voltage and temperature measurement in cars and trucks, hybrid and electric vehicles, as well as in renewable energy generating systems.

The crucial factor for our success as technology leader is the concentration of a wide range of production steps and proprietary technologies in-house.

Our unique value chain and the continuous improvement of processes are the basis of our outstanding technical and innovative capability.

### **Innovation by tradition**

## ESA Certificate



europaean space agency  
agence spatiale européenne

### Certificate of Qualification No. 285E

This is to certify that ISABELLENHÜTTE HEUSLER GmbH & Co. KG, Germany has been qualified by ESA for the supply of Resistors, Fixed, Chip, Metal Foil, Based on Types SMV-PW and SM\*-PT for use in ESA space programmes, according to ESCC Generic Specification 4001 and associated Detail Specifications 4001/027 and 4001/028 as recommended by the Space Components Steering Board.

This certificate is valid until July 2020.

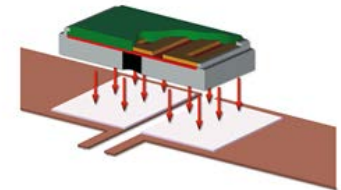
A handwritten signature in black ink, appearing to be 'F. H. O.'.

Head of the Product Assurance  
and Safety Department

Date  
14 December 2018

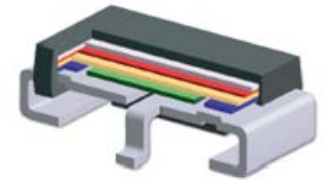
## ESCC Detail Specification 4001/027

Variant	01	04
Type / rated Power	SMP-PW / 1.0W	SMP-PW / 1.0W
Size	2010	2010
Resistance values	0.01Ω - 1.0Ω	0.005Ω - 0.009Ω
Tolerance	0.5%; 1.0%	0.5%; 1.0%
TC-limits:		
-55°C to +22°C	-100; +0 ppm/K	-140; +0 ppm/K
+22°C to +170°C	±60 ppm/K	±100 ppm/K
+22°C to +60°C	±50 ppm/K	±100 ppm/K
Part number (ex.)		
acc. ESCC	ESCC400102701R10F	
Isabellenhuette	SMP-R100-1.0-PW	



## ESCC Detail Specification 4001/028

<b>Variant</b>	02
<b>Type / rated Power</b>	SMV-PW / 3.0W
<b>Size</b>	4723
<b>Resistance values</b>	0.0022Ω - 1.0Ω
<b>Tolerance</b>	0.5%; 1.0%
<b>TC-limits:</b>	
<b>-55°C to +22°C</b>	-110; +0 ppm/K
<b>+22°C to +170°C</b>	±60 ppm/K
<b>+22°C to +60°C</b>	±50 ppm/K (R<0.01Ω); ±30 ppm/K (R≥0.01Ω)
<b>Part number (ex.)</b>	
<b>acc. ESCC</b>	ESCC400102802R005F
<b>Isabellenhuetten</b>	SMV-R005-1.0-PW

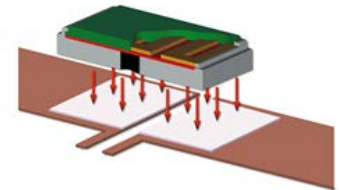


## Introduction of ESCC-Components Traffic Light System

- Quick information about PW-components availability
- Available on IH-website resp. frequently sent by email to affected accounts
- Traffic Light System detailing the expected lead-time of each component of the QPL:
  - Qualified components on stock, completion within 8 weeks as of receipt of order
  - No stock of qualified components, but ESCC transformation and qualification started; completion within 10 – 14 weeks as of receipt of order
  - No stock of qualified components, no stock of standard components to be used for ESCC transformation; completion within 26 – 28 weeks as of receipt of order

## ESCC Detail Specification 4001/027 – new variant?

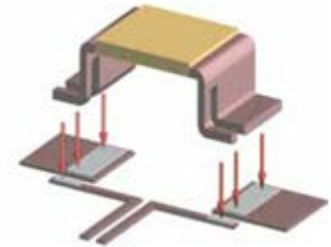
<b>Variant</b>	0x
<b>Type / rated Power</b>	SMK-PW / 0.5W
<b>Size</b>	1206
<b>Resistance values</b>	0.01Ω - 0.5Ω + Jumper
<b>Tolerance</b>	1.0%
<b>TC-limits:</b>	
<b>-55°C to +22°C</b>	ongoing lab study
<b>+22°C to +170°C</b>	ongoing lab study
<b>+22°C to +60°C</b>	ongoing lab study
<b>Part number (ex.)</b>	
<b>acc. ESCC</b>	ESCC40010270xR020F
<b>Isabellenhuetten</b>	SMK-R020-1.0-PW





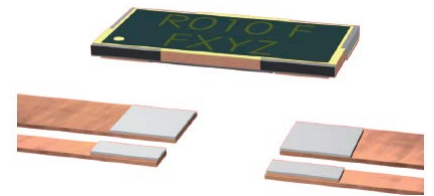
## ESCC Detail Specification 4001/0xx – new subgroup?

<b>Variant</b>	0x
<b>Type / rated Power</b>	BVR-PW / 2.0 - 4.0W
<b>Size</b>	4026
<b>Resistance values</b>	0.001Ω - 0.003Ω + Jumper
<b>Tolerance</b>	0.5%; 1.0%
<b>TC-limits:</b>	
<b>-55°C to +22°C</b>	ongoing lab study
<b>+22°C to +170°C</b>	ongoing lab study
<b>+22°C to +60°C</b>	ongoing lab study
<b>Part number (ex.)</b>	
<b>acc. ESCC</b>	ESCC40010xx0xR001F
<b>Isabellenhuetten</b>	BVR-I-R001-1.0-PW



## ESCC Detail Specification Nr. 4001/0xx – new subgroup for HDI-components?

<b>Variant</b>	0x
<b>Type / rated Power</b>	GMP-PW / 1.0W
<b>Size</b>	2010
<b>Resistance values</b>	0.01 $\Omega$ / 0.025 $\Omega$ / 0.08 $\Omega$
<b>Tolerance</b>	1.0%; 5.0%
<b>TC-limits:</b>	
<b>-55°C to +22°C</b>	ongoing lab study
<b>+22°C to +170°C</b>	ongoing lab study
<b>+22°C to +60°C</b>	ongoing lab study
<b>Part number (ex.)</b>	
<b>acc. ESCC</b>	ESCC40010xx0xR01F
<b>Isabellenhuetten</b>	GMP-R010-1.0-E



## Usage in Newspace

- In general, all Isabellenhütte SMT-components can be used in Newspace applications
- As representatives of the ISA-Plan®-Technology the component family SMx is specified within the ESCC. Derived from this technology further component families VMx and VLx can be recommended for Newspace applications
- ISA-Weld®-Technology components can be found in Space applications on customized level only at the moment. In Newspace all SMT- and busbar components can be considered for corresponding designs
- As a rule of thumb the resistance value  $0.005\Omega$  provides you with directions to choose the correct ISA-technology: lower resistance values can be better addressed by ISA-Weld®-components, higher values are better off with ISA-Plan®-components
- Standard level of qualification is AEC-Q200 for standard components

## ISA-Space community & point of contacts



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- ISA-Space community features like quarterly newsletters, product training sessions (web-based), ISA-Space community events, etc...

**Thanks for your attention!**

ISABELLENHÜTTE HEUSLER GMBH & CO. KG