

**Features**

- metal glaze on high quality ceramic
- protective overglaze
- SnPb contacts on Ni barrier layer
- excellent stability at different environmental conditions
- high volume product suitable for commercial and special applications

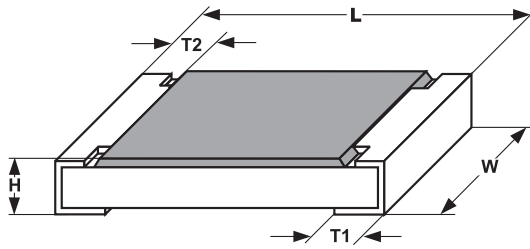
**General Parameters**

Type	Size		P (W) at 70°C		Limiting Element Voltage VPmax	TCR ppm/K	Tolerance %	Resistance Range Ω	E-Series
	inch	metric	CECC 40401-802	EIA-575					
D10 CRCW0402	0402	1005	0,063		50	50	0,5 / 1	100R – 1M0	24 + 96
						100	0,5 / 1	10R – 4M7	24 + 96
						100	1	1R0 – 9R1	24
						200	5	1R0 – 10M	24
Zero-Ohm-Resistor : R <sub>max</sub> = 20mW						I <sub>max</sub> = 1A			
D11 CRCW0603	0603	1608	0,1	0,0625	75	50	0,5 / 1	100R – 10M	24 + 96
						100	0,5	10R – 10M	24 + 96
						100	1	1R0 – 10M	24 + 96
						200	5	1R0 – 10M	24
Zero-Ohm-Resistor : R <sub>max</sub> = 20mW						I <sub>max</sub> = 1,5A			
D12 CRCW0805	0805	2012	0,125	0,1	150	50	0,5 / 1	100R – 10M	24 + 96
						100	0,5	10R – 10M	24 + 96
						100	1	1R0 – 10M	24 + 96
						200	5	1R0 – 10M	24
Zero-Ohm-Resistor : R <sub>max</sub> = 20mW						I <sub>max</sub> = 2A			
D25 CRCW1206	1206	3216	0,25	0,125	200	50	0,5 / 1	100R – 10M	24 + 96
						100	0,5	10R – 10M	24 + 96
						100	1	1R0 – 10M	24 + 96
						200	5	1R0 – 10M	24
Zero-Ohm-Resistor : R <sub>max</sub> = 20mW						I <sub>max</sub> = 2,5A			
CRCW1210	1210	3225	0,33*)	0,25	200	100	1	1R0 – 1M0	24 + 96
						200	5	1R0 – 1M0	24
Zero-Ohm-Resistor : R <sub>max</sub> = 20mW						I <sub>max</sub> = 2,5A			
CRCW1218	1218	3246	1,0*)		200	50	0,5 / 1	100R – 2M2	24 + 96
						100	1	1R0 – 2M2	24 + 96
						200	5	1R0 – 2M2	24
Zero-Ohm-Resistor : R <sub>max</sub> = 20mW						I <sub>max</sub> = 4A			
CRCW2010	2010	5025	0,5*)	0,5	400	50	0,5 / 1	100R – 10M	24 + 96
						100	0,5	10R – 10M	24 + 96
						100	1	1R0 – 10M	24 + 96
						200	5	1R0 – 10M	24
Zero-Ohm-Resistor : R <sub>max</sub> = 20mW						I <sub>max</sub> = 3A			
CRCW2512	2512	6332	1,0*)	1,0	500	50	0,5 / 1	100R – 10M	24 + 96
						100	0,5	10R – 10M	24 + 96
						100	1	1R0 – 10M	24 + 96
						200	5	1R0 – 10M	24
Zero-Ohm-Resistor : R <sub>max</sub> = 20mW						I <sub>max</sub> = 4A			

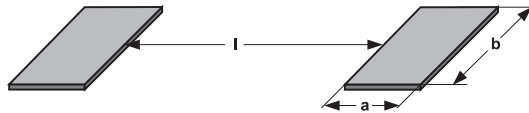
• ask for further value range  
• Power rating depends on the max. temperature at the solder point , the component placement density and the substrate material

• special terminations for conductive adhesive attachment on request  
• marking: see page 72  
• packaging: see pages 73-75

\*) size not specified in CECC



Size		Dimensions ( mm )				
inch	metric	L	W	H	T1	T2
0402	1005	1,0±0,05	0,5±0,05	0,35±0,05	0,25 <sup>+0,05</sup> <sub>-0,10</sub>	0,2±0,1
0603	1608	1,55 <sup>+0,10</sup> <sub>-0,05</sub>	0,85±0,1	0,45±0,05	0,3±0,2	0,3±0,2
0805	2012	2,0 <sup>+0,20</sup> <sub>-0,10</sub>	1,25±0,15	0,45±0,05	0,3 <sup>+0,20</sup> <sub>-0,10</sub>	0,3±0,2
1206	3216	3,2 <sup>+0,10</sup> <sub>-0,20</sub>	1,6±0,15	0,55±0,05	0,45±0,2	0,4±0,2
1210	3225	3,2±0,2	2,5±0,2	0,55±0,05	0,45±0,2	0,4±0,2
1218	3246	3,2 <sup>+0,10</sup> <sub>-0,20</sub>	4,6±0,15	0,55±0,05	0,45±0,2	0,4±0,2
2010	5025	5,0±0,15	2,5±0,15	0,60±0,05	0,6±0,2	0,6±0,2
2512	6332	6,3±0,2	3,15±0,15	0,60±0,05	0,6±0,2	0,6±0,2



Size		Solder Pad Dimensions (mm)					
		Reflow Soldering			Wave Soldering		
inch	metric	a	b	l	a	b	l
0402	1005	0,4	0,6	0,5			
0603	1608	0,5	0,9	1,0	0,9	0,9	1,0
0805	2012	0,7	1,3	1,2	0,9	1,3	1,3
1206	3216	0,9	1,7	2,0	1,1	1,7	2,3
1210	3225	0,9	2,5	2,0	1,1	2,5	2,2
1218	3246	1,05	4,9	1,9	1,25	4,8	1,9
2010	5025	1,0	2,5	3,9	1,2	2,5	3,9
2512	6332	1,0	3,2	5,2	1,2	3,2	5,2

### Technical Characteristics

Parameter	Unit	D10	D11		D12		D25		CRCW1210	CRCW1218	CRCW2010	CRCW2512
		CRCW0402	CRCW0603	CRCW0805	CRCW1206	CRCW1210	CRCW1218					
Rated Dissipation at 70 °C (CECC 40401   EIA 575)	W	0,063	0,1	0,063	0,125	0,1	0,25	0,125	0,33	1,0	0,5	1,0
Limiting Element Voltage <sup>2)</sup>	V <sub>≧</sub>	50	75	150	200	200	200	200	200	200	400	500
Insulation Voltage (1 min)	V <sub>peak</sub>	> 75	> 100	> 200	> 300	> 300	> 300	> 300	> 300	> 300	> 300	> 300
Thermal Resistance	K/W	≤ 870 <sup>1)</sup>	≤ 550 <sup>1)</sup>	≤ 440 <sup>1)</sup>	≤ 220 <sup>1)</sup>	3)	3)	3)	3)	3)	3)	3)
Insulation Resistance	Ω	> 10 <sup>9</sup>										
Category Temperature Range	°C	-55 / +125 (+155)										
Failure Rate	h <sup>-1</sup>	0,3 · 10 <sup>-9</sup>										
Weight / 1000pcs	g	0,65	2	5,5	10	16	29,5	25,5	40,5			

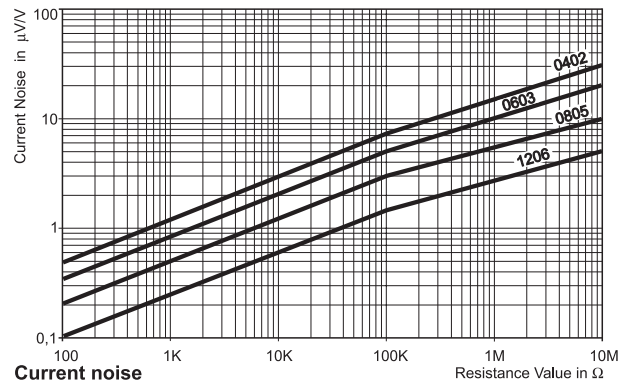
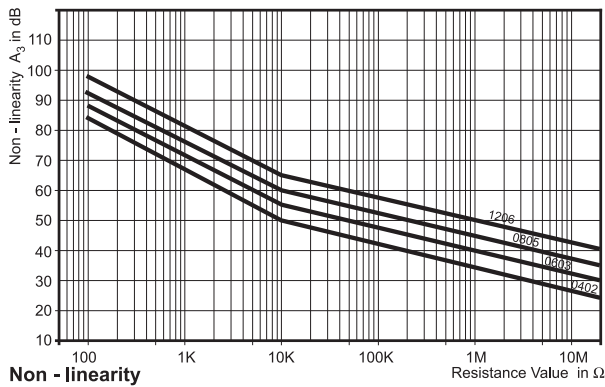
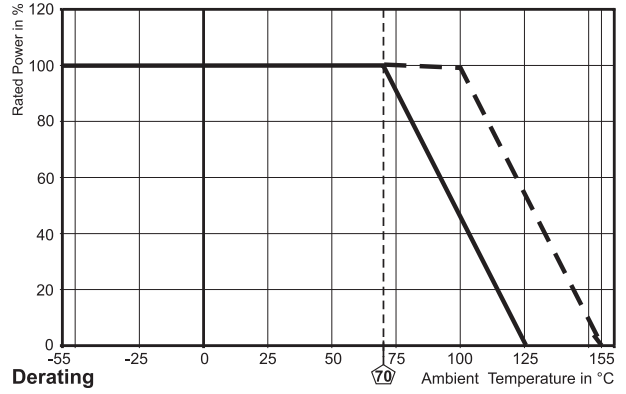
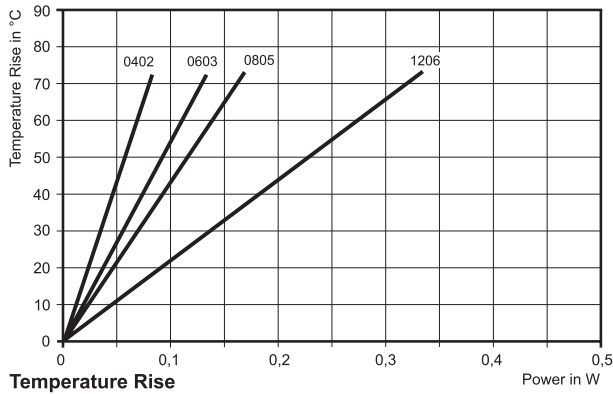
<sup>1)</sup> measuring conditions in acc. to CECC 40401

<sup>2)</sup> Rated voltage:  $\sqrt{P \cdot R}$

<sup>3)</sup> depending on solder pad dimensions

### Ordering Information

<b>D11 – CRCW0603</b>	<b>100</b>	<b>562R</b>	<b>1%</b>	<b>PN</b>
Style	TC ppm / K	Resistance Value Ω	Tolerance ± %	Packaging PN-Papertape 20000 pcs



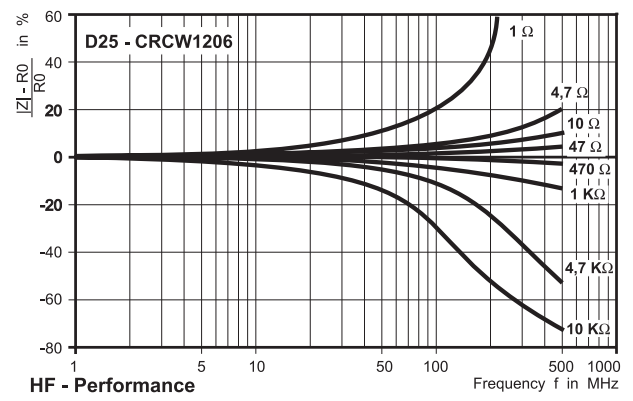
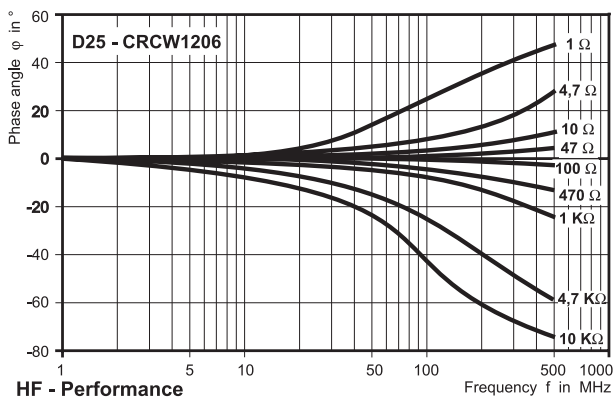
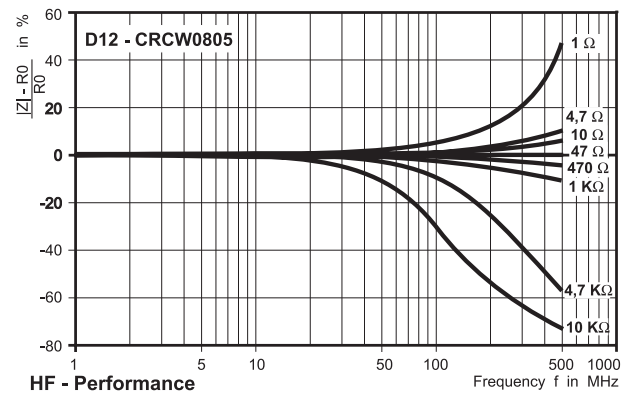
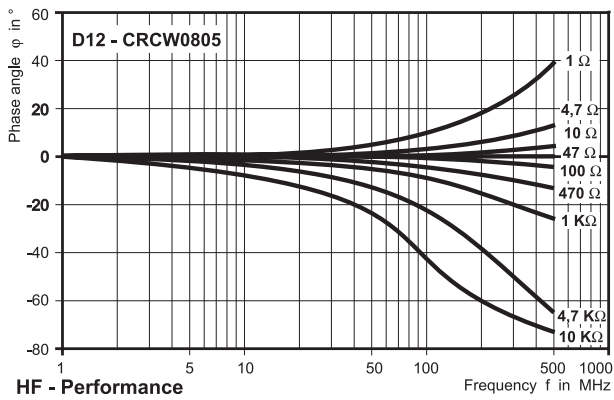
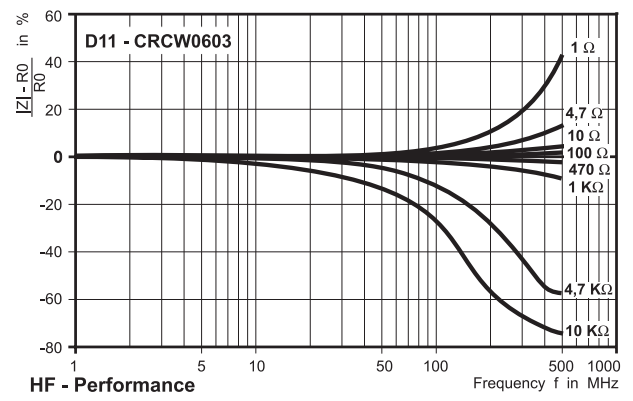
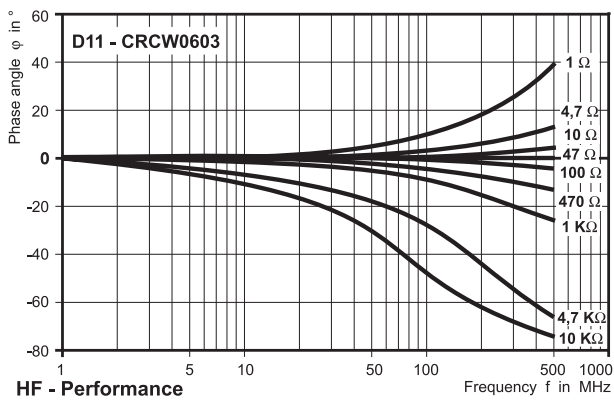
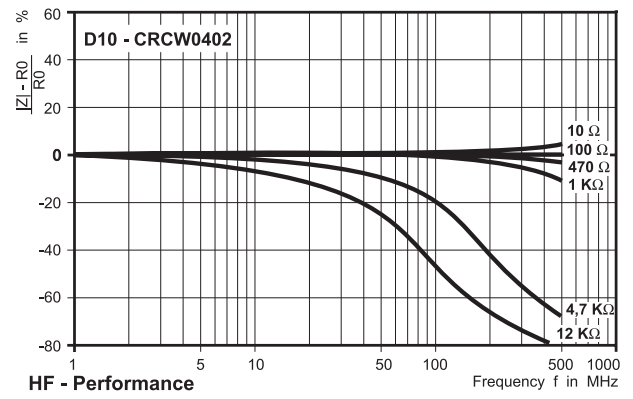
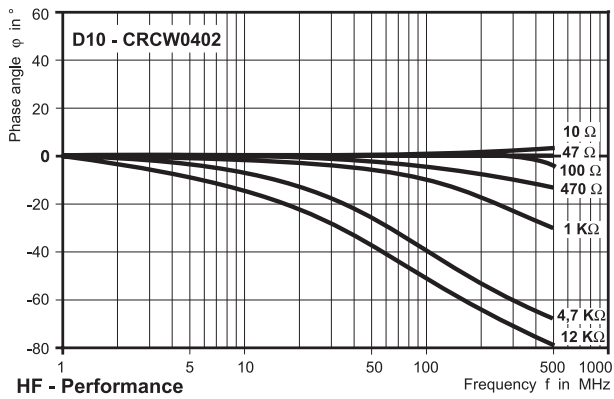
**Packaging**

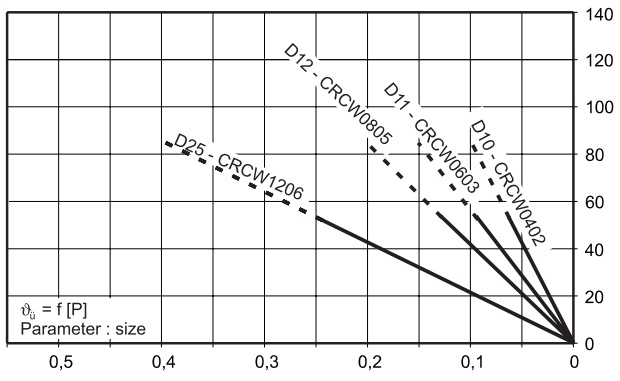
Type	Reel				Bulk		
	Tapewidth	Diameter	Pieces/Reel	Packaging Code		Bulk Feeding Magazine Pieces / Magazine	
				Paper	Blister	Pieces	Code
D10 CRCW0402	8mm Papertape	180mm / 7" 330mm / 13"	10000 50000	P0 PZ		50000 <sup>2)</sup>	MZ
D11 CRCW0603	8mm Paper-/ Blisertape <sup>1)</sup>	180mm / 7" 255mm / 10" 330mm / 13"	5000 10000 20000	P5 P0 PN	B5 BN	25000	MU
D12 CRCW0805	8mm Paper-/ Blisertape <sup>1)</sup>	180mm / 7" 255mm / 10" 330mm / 13"	5000 10000 20000	P5 P0 PN	B5 BN	10000	MO
D25 CRCW1206	8mm Paper-/ Blisertape <sup>1)</sup>	180mm / 7" 255mm / 10" 330mm / 13"	5000 10000 20000	P5 P0 PN	B5 BN		
CRCW1210	8mm Paper-/Blisertape <sup>1)</sup>	180mm / 7" 330mm / 13"	5000 20000	P5 PN	B5 BN		
CRCW1218	12mm Blisertape	180mm / 7"	4000		B4		
CRCW2010	12mm Blisertape	180mm / 7"	4000		B4		
CRCW2512	12mm Blisertape	180mm / 7"	2000 4000		B2 B4		

<sup>1)</sup> only in combination with 180mm / 7" and 330mm / 13" plastic reel

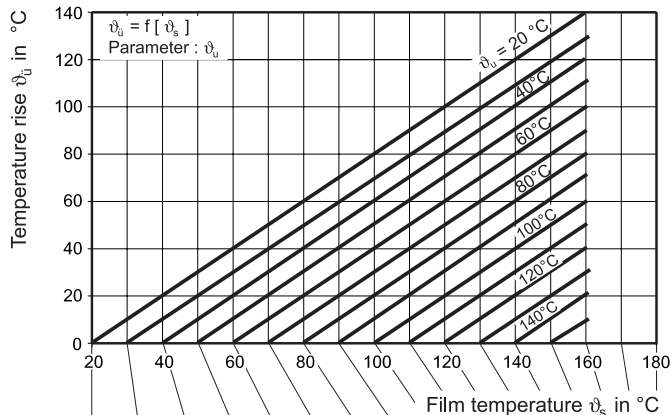
<sup>2)</sup> on request,

further information about packaging: see pages 73-75

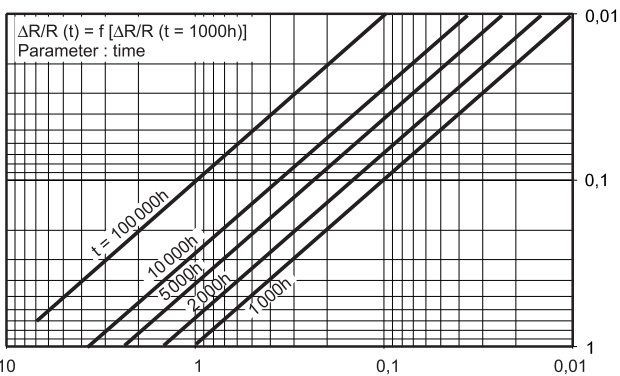




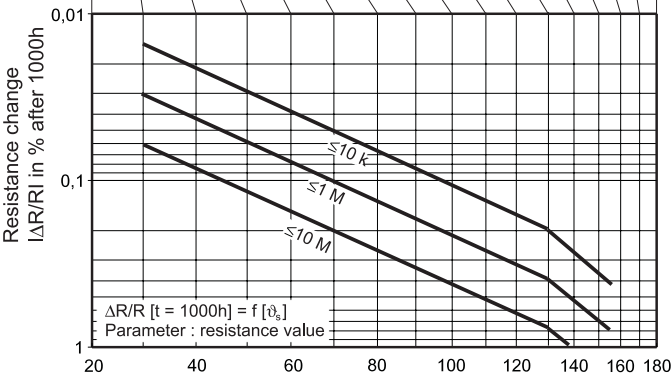
Load in W



Film temperature  $\vartheta_s$  in °C

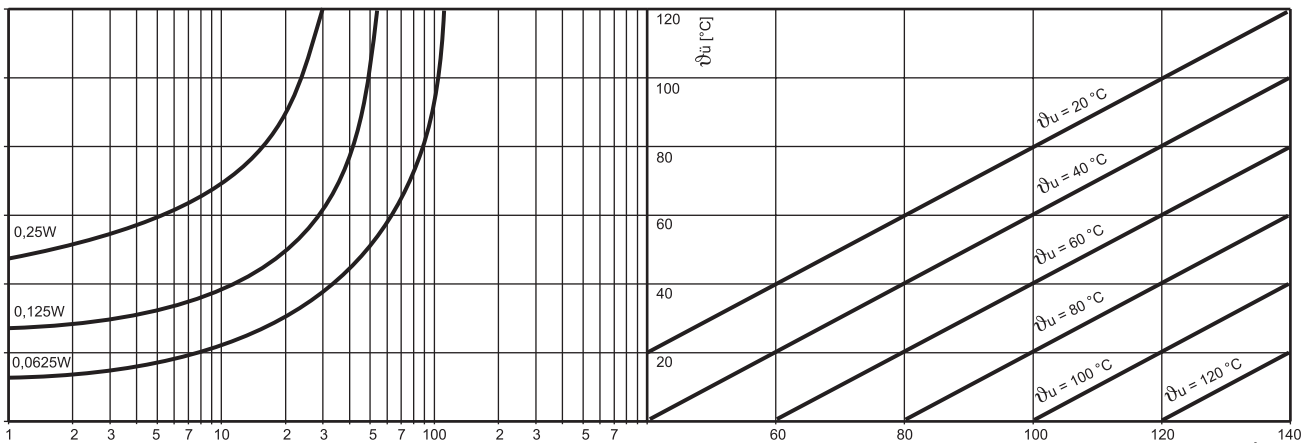


Resistance change  $\Delta R/R$  in %

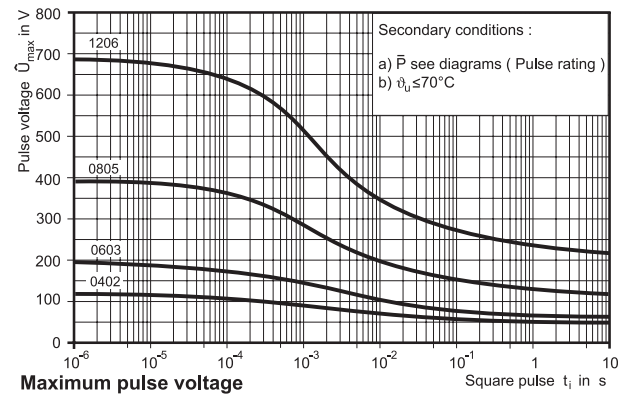
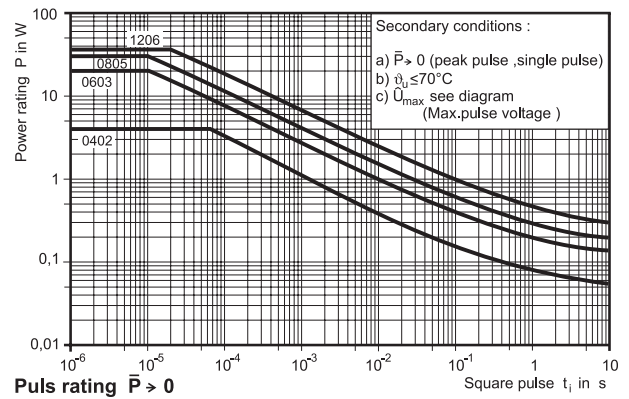
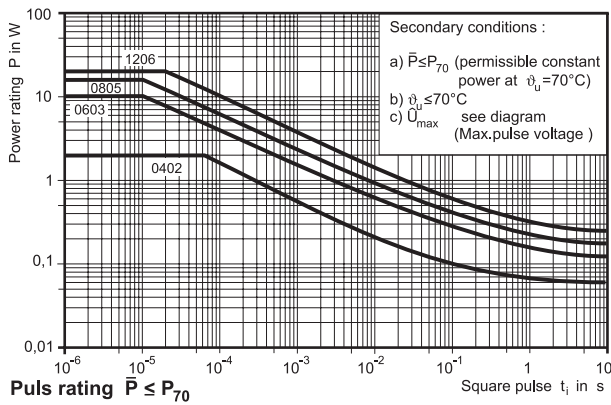


Film temperature  $\vartheta_s$  in °C

Stability nomogram typical values ( for handling see general explanations )



Power rating as a function of packaging density (guideline)



**Performance**

Test	Conditions of Test	Test Results %		
		0402 0603	0805 1206 1210	1218 2010 2512
Endurance Test at 70°C	IEC 60115-1 4.25.1 1000h at 70°C	≤ ± 1	≤ ± 0,5	≤ ± 1,0
Endurance at UCT	IEC 60115-1 4.25.3 1000h at 125 °C without load	≤ ± 1	≤ ± 0,5	≤ ± 1,0
Overload Test	IEC 60115-1 4.13 Short time overload	≤ ± 0,5	≤ ± 0,25	≤ ± 0,5
Thermal Shock	IEC 60115-1 4.19 IEC 60068-2-14 rapid change between upper and lower category temperature	≤ ± 0,5	≤ ± 0,25	≤ ± 0,5
Damp Heat Steady State	IEC 60115-1 4.24 IEC 60068-2-3 56 days at 40°C and 93% relative humidity	≤ ± 1,0	≤ ± 0,5	≤ ± 1,0
Resistance to Soldering Heat	IEC 60115-1 4.18 IEC 600 68-2-20 10 seconds at 260°C solder bath temperature	≤ ± 0,5	≤ ± 0,25	≤ ± 0,5

**Applicable Specifications**

- CECC40000 / 40400 / 40401-004,-006,-007,-802
- EN140400 / IEC 60115 – 1