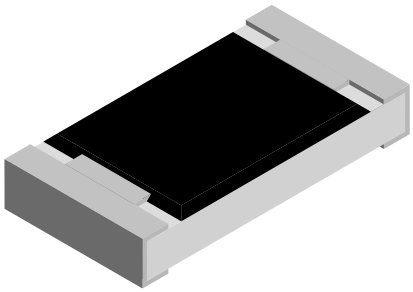
Thick Film Resistor/Capacitor Chip, Surface Mount



FEATURES

- Single component reduces board space and component counts
- Choice of dielectric characteristics X7R or Y5U
- Wrap around termination
- Thick film resistor/capacitor element
- Inner electrode protection
- Flow and reflow solderable
- Automatic placement capability, standard size

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	SIZE		RESISTOR CHARACTERISTICS				CAPACITOR CHARACTERISTICS				
	INCH	METRIC	POWER RATING $P_{70\,°C}$ W	TEMPERATURE COEFFICIENT ± ppm/°C	RES. TOL. ± %	RES. RANGE Ω	DIELECTRIC	TEMPERATURE COEFFICIENT %	CAP. TOL. ± %	CAP. VOLTAGE V_{DC}	CAP. RANGE pF
CRCC1206	1206	3216	0.125	200	5	10 to 1M	X7R	± 15	20	50	10 to 270
CRCC1206	1206	3216	0.125	200	5	10 to 1M	Y5U	+ 22, - 56	20	50	270 to 1800

RESISTOR
- Operating temperature range: - 55 °C to + 125 °C
- Technology: Thick film

CAPACITOR
- Operating temperature range: X7R - 55 °C to + 125 °C
  Y5U - 30 °C to + 85 °C
- Maximum dissipation factor: 2.5 %

Notes
- Packaging: See appropriate catalog or web page.
- Power rating depends on the maximum temperature at the solder point, the component placement density and the substrate material.

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	RESISTOR	X7R CAPACITOR	Y5U CAPACITOR
Rated dissipation at 70 °C	W	0.125	-	-
Capacitor voltage rating	V	-	50	50
Dielectric withstanding voltage (5 s, 50 mA Charge)	V_{DC}	-	125	125
Category temperature range	°C	- 55/+ 125	- 55/+ 125	- 30/+ 85
Insulation resistance	Ω	> 10^{10}	> 10^{10}	> 10^{10}
Weight/1000 pieces	g	0.65	2	5.5

GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: CRCC1206472J220MTF (preferred part numbering format)

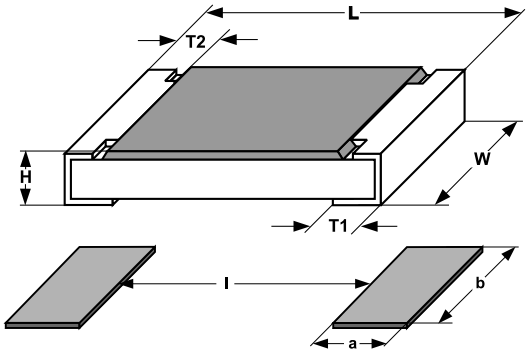
C	R	C	C	1	2	0	6	4	7	2	J	2	2	0	M	T	F

GLOBAL MODEL	RESISTANCE VALUE	RES. TOLERANCE	CAPACITANCE VALUE (pF)	CAP. TOLERANCE	PACKAGING
CRCC1206	2 digit significant figure, followed by a multiplier **100** = 10 Ω **683** = 68 kΩ **105** = 1.0 MΩ	**F** = ± 1 % **G** = ± 2 % **J** = ± 5 %	2 digit significant figure, followed by a multiplier **100** = 10 pF **271** = 270 pF **182** = 1800 pF	**K** = ± 10 % **M** = ± 20 %	**EA** = Lead (Pb)-free, T/R (4000 pieces) **TF** = Tin/Lead, T/R (4000 pieces)

Historical Part Number Example: CRCC1206472J220MR02 (will continue to be accepted)

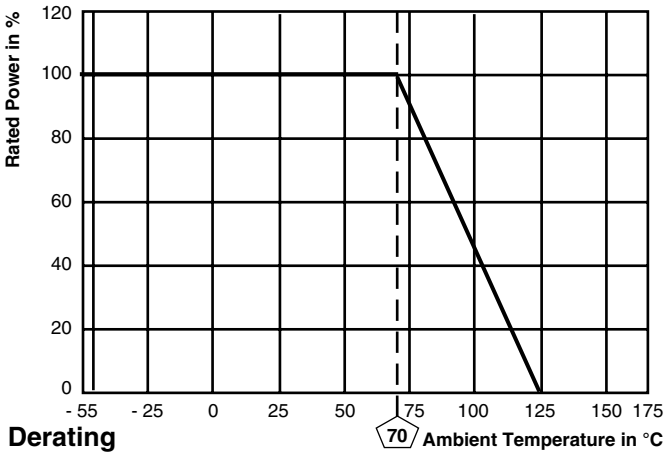
CRCC1206	472	J	220	M	R02
MODEL	RESISTANCE VALUE	RES. TOLERANCE	CAPACITANCE VALUE	CAP. TOLERANCE	PACKAGING

DIMENSIONS



SIZE		DIMENSIONS in millimeters				
INCH	METRIC	L	W	H	T1	T2
1206	3216	3.2 ± 0.15	1.6 ± 0.15	0.55 ± 0.15	0.5 ± 0.25	0.5 ± 0.25

SIZE		SOLDER PAD DIMENSIONS in millimeters					
		REFLOW SOLDERING			WAVE SOLDERING		
INCH	METRIC	a	b	l	a	b	l
1206	3216	0.9	1.7	2.0	1.1	1.7	2.2



SCHEMATIC

PERFORMANCE

TEST	CONDITIONS OF TEST	TEST RESULTS (TYPICAL TEST LOTS)	
		R	C
Endurance test at 70 °C MIL-Std-202 method 108	1000 h at 70 °C, 1.5 h “ON”, 0.5 h “OFF”	± (5 % + 2 Ω)	± 20 %
Dielectric withstanding voltage MIL-Std-202 method 301	125 V_{DC}, 5 s, 50 mA charge	No physical damage	
Thermal shock MIL-Std-202 method 107	100 cycles, - 55 °C to + 125 °C	± (5 % + 2 Ω)	± 20 %
Moisture MIL-Std-202 method 106	Omit steps 7A and B	± (5 % + 2 Ω)	± 20 %
Resistance to soldering heat EIA 575	10 s at 260 °C solder bath temperature	± (5 % + 2 Ω)	± 20 %
High temperature exposure EIA 575	125 °C for 100 h	± (5 % + 2 Ω)	± 20 %
Low temperature operation EIA 575	1 h at - 55 °C then 45 min at 50 V	± (5 % + 2 Ω)	± 20 %
Solderability and leaching EIA 575 3.12	Condition C	95 % coverage	

APPLICABLE SPECIFICATIONS

- IPC standards
- EIA 575

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