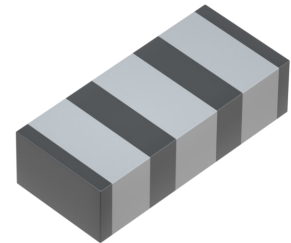


SMD CERAMIC RESONATORS

FEATURES

- + High reliability for low cost
- + Small dimensions and low profile
- + Wide frequency range
- + Excellent clock signal generator
- + Excellent values for frequency and aging stability
- + Product version with integrated capacitor available



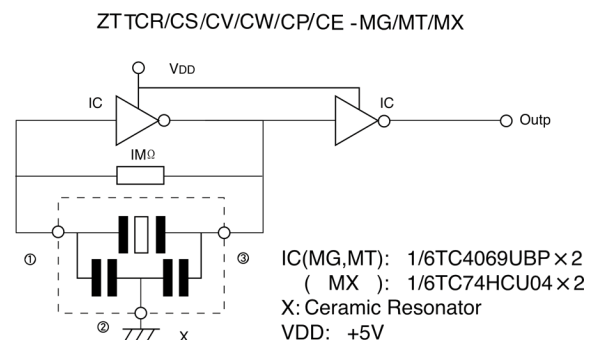
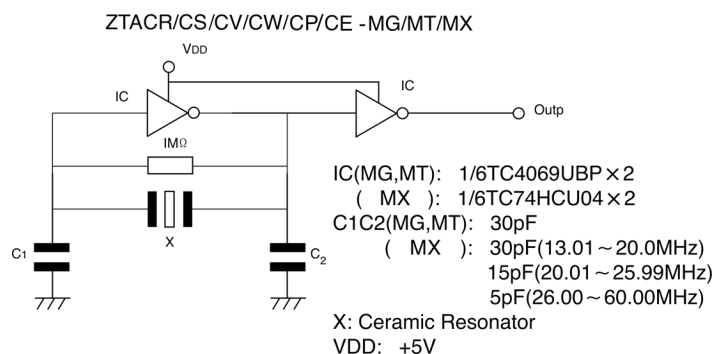
PB FREE / ROHS-2 2011/65/EU COMPLIANT

GENERAL DATA

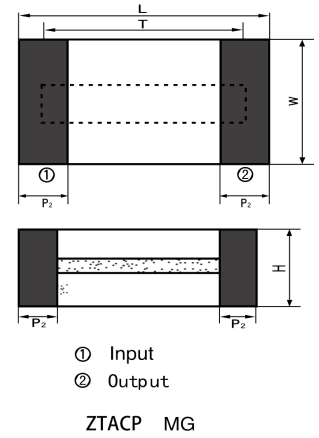
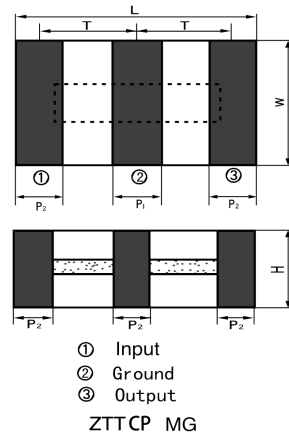
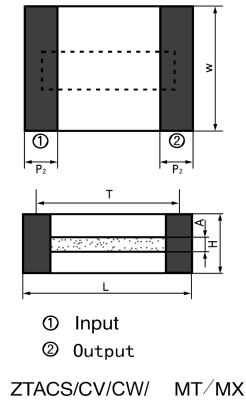
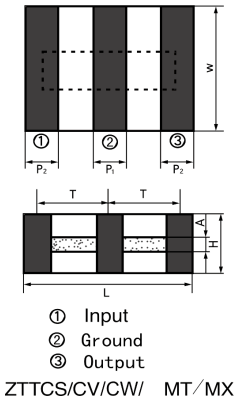
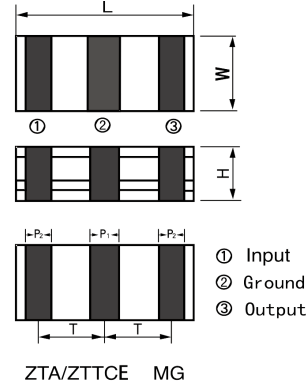
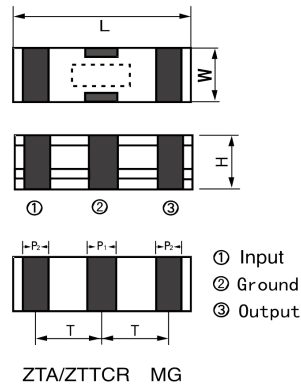
PART NUMBER	BUILD-IN CAPACITOR	FREQUENCY RANGE	FREQUENCY ACCURACY	STABILITY OVER TEMPERATURE	OPERATING TEMPERATURE	AGING FOR 10 YEARS
ZTACR-MG ZTTCR-MG	no yes	4.00 - 8.00 MHz	±0.5% at 25°C	±0.3% over -25/+85°C	-25/+85°C	±0.3%
ZTACE-MG ZTCE-MG	no yes	8.00 - 12.00 MHz	±0.5% at 25°C	±0.3% over -25/+85°C	-25/+85°C	±0.3%
ZTACS-MT ZTTC5-MT	no yes	6.00 - 13.00 MHz	±0.5% at 25°C	±0.4% over -25/+85°C	-25/+85°C	±0.3%
ZTACV-MT ZTTCV-MT	no yes	8.00 - 13.0 MHz	±0.5% at 25°C	±0.4% over -25/+85°C	-25/+85°C	±0.3%
ZTACS-MX ZTTC5-MX	no yes	13.01 - 60.0 MHz	±0.5% at 25°C	±0.3% over -25/+85°C	-25/+85°C	±0.3%
ZTACV-MX ZTTCV-MX	no yes	16.00 - 60.0 MHz	±0.5% at 25°C	±0.3% over -25/+85°C	-25/+85°C	±0.3%
ZTACW-MX ZTTCW-MX	no yes	20.00 - 60.0 MHz	±0.5% at 25°C	±0.3% over -25/+85°C	-25/+85°C	±0.3%
ZTACP-MG ZTTCP-MG	no yes	2.00 - 12.0 MHz	±0.5% at 25°C	±0.3% over -25/+85°C	-25/+85°C	±0.3%

OTHER PARAMETERS ARE AVAILABLE ON REQUEST / CREATE HERE YOUR SPECIFICATION

TEST CIRCUIT FOR MOS IC



DIMENSIONS

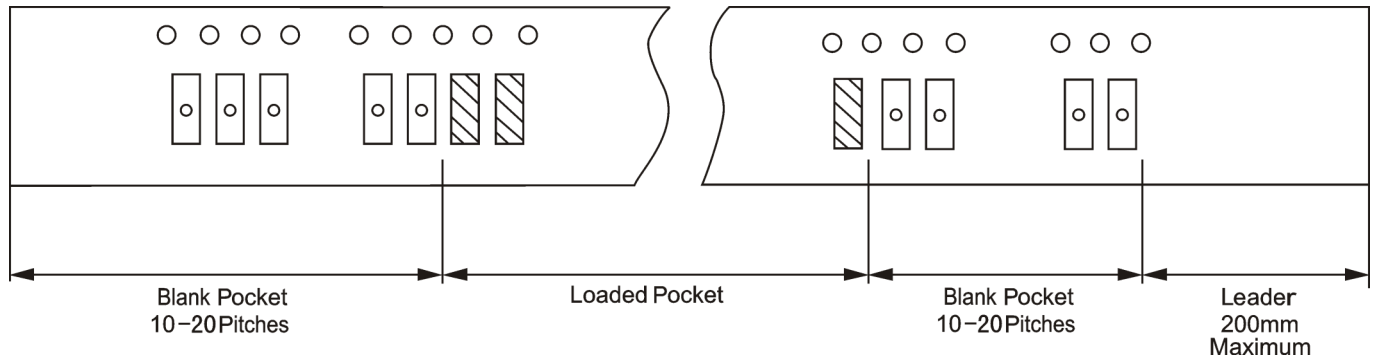


PART NUMBER	L	W	H	P1	P2	T
ZTACR-MG ZTTCR-MG	4.5±0.2	2.0±0.2	1.2max	0.8±0.2	0.8±0.2	1.5±0.2
ZTACE-MG ZTTCE-MG	3.2±0.2	1.3±0.2	1.0max	0.4±0.2	0.4±0.2	1.2±0.2
ZTACS-MT/MX ZTTCS-MT/MX	4.7±0.2	4.1±0.2	(1.2+A)±0.2	1.0±0.2	0.8±0.2	3.9±0.2 1.95±0.2
ZTACV-MT/MX ZTTCV-MT/MX	3.7±0.2	3.1±0.2	(1.0+A)±0.2	0.9±0.2	0.7±0.2	3.0±0.2 1.5±0.2
ZTACW-MX ZTTCW-MX	2.5±0.2	2.0±0.2	1.2max	0.5±0.2	0.4±0.2	2.0±0.2 1.0±0.2
ZTACP-MG ZTTCP-MG	6.0±0.2	3.0±0.2	1.8±0.2 1.5±0.2 1.7±0.2	1.2±0.2	1.2±0.2	5.0±0.2 2.5±0.2

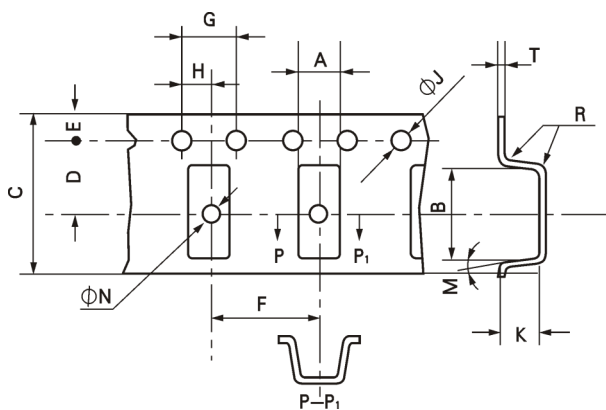
Note:

A stands for thickness of the ceramic element, which varies with the frequency. The range of the thickness difference is 0.1 to 0.7 mm. No middle terminal for ZTA series.

PACKING APPROACH

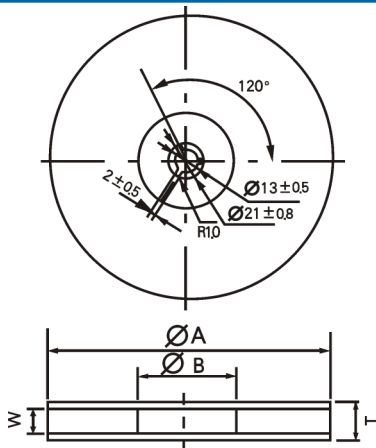


TAPE SIZE



Part Number	Size Code		A	B	C	D	E	F	G	H	ØJ	ØN	M	R	K	T
	Tolerance		±0.2	±0.2	±0.3	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	max	max	±0.2	±0.1
ZTACR ZTTCR	MG MG		2.2	4.7	12.0	5.5	1.75	4.0	4.0	2.0	1.6	1.6	3°	0.3	1.3	0.3
ZTACE ZITCE	MG MG		1.5	3.4	8.0	3.5	1.75	4.0	4.0	2.0	1.6	1.1	3°	0.3	1.3	0.25
ZTACS ZITCS	MT/MX MT/MX		5.0	4.4	12.0	5.5	1.75	8.0	4.0	2.0	1.5	1.6	10°	0.3	1.8	0.3
ZTACV ZITCV	MT/MX MT/MX		3.4	4.0	12.0	5.5	1.75	8.0	4.0	2.0	1.5	1.6	10°	0.3	1.3	0.3
ZTACW ZITCW	MX MX		2.3	2.8	8.0	3.5	1.75	4.0	4.0	2.0	1.6	1.1	3°	0.3	1.3	0.25
ZTACP ZITCP	MG MG		3.4	6.4	16.0	7.5	1.75	8.0	4.0	2.0	1.5	1.6	10°	0.3	1.8	0.3

REEL SPECIFICATION

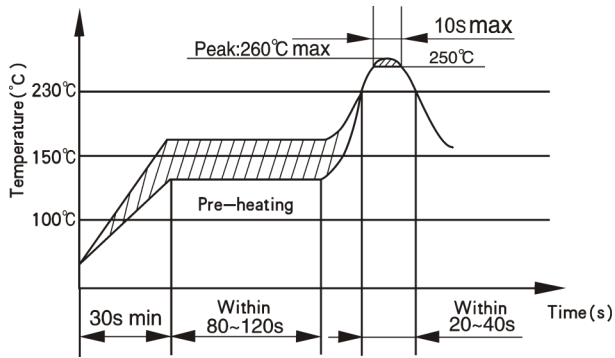


ØA	ØB	W	T	Pieces per reel	Carrier tape size
179 ± 2	60 typ	8.4min	14.0max	3000 typ	8
179 ± 2	60 typ	12.4min	19.4max	3000 typ	12
179 ± 2	60 typ	12.4min	19.4max	1000 typ	12
179 ± 2	60 typ	16.4min	22.4max	1000 typ	16
330 ± 3	80 min	12.4min	19.4max	4000 typ	12
330 ± 3	80 min	16.4min	22.4max	4000 typ	16

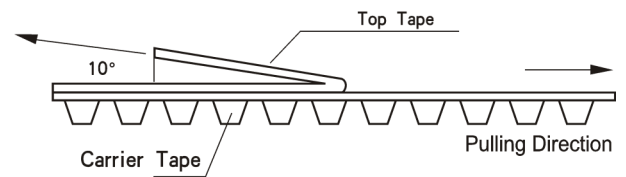
typ -- (Typical Value)

RECOMMENDED REFLOW SOLDERING CONDITIONS

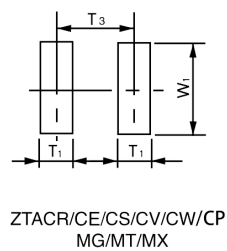
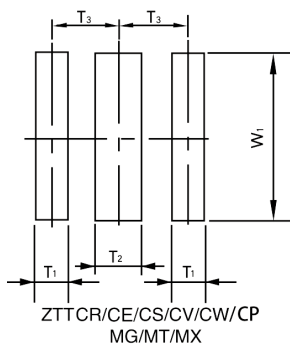
TEST CONDITIONS OF PEELING STRENGTH



0.196~0.686N
 Peeling Strength

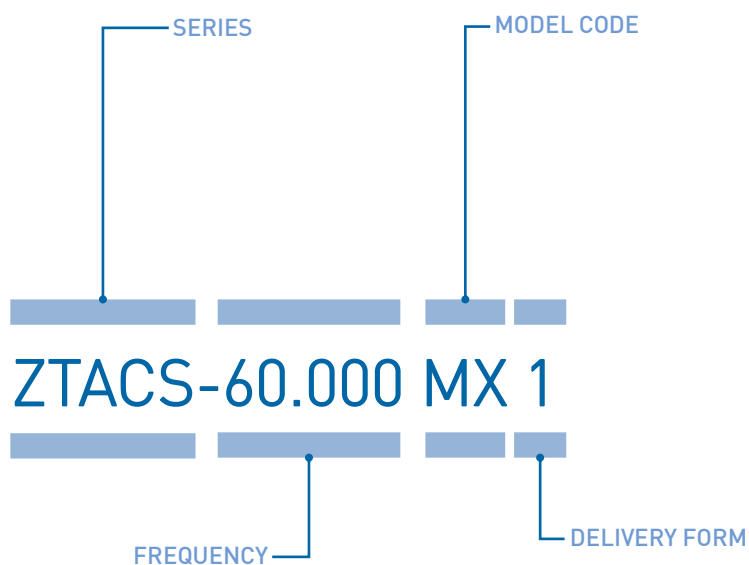


RECOMMENDED LAND PATTERN



Part Number	Size Code	Size (mm)			
		T ₁	T ₂	T ₃	W ₁
ZTACP ZTTCP	MG MG	1.5±0.3	1.7±0.3	5.0±0.3 2.5±0.3	4.0±0.3
ZTACR ZITCR	MG MG	0.8±0.2	0.8±0.2	3.0±0.2 1.5±0.2	2.6±0.2
ZTACE ZTTCE	MG MG	0.4±0.2	0.4±0.2	1.2±0.2	2.0±0.2
ZTACS ZTTCS	MT/MX MT/MX	0.8±0.2	1.3±0.2	3.9±0.2 1.95±0.2	5.1±0.2
ZTACV ZTTCV	MT/MX MT/MX	0.7±0.2	1.0±0.2	3.0±0.2 1.5±0.2	4.1±0.2
ZTACW ZTTCW	MX MX	0.5±0.2	0.5±0.2	2.0±0.2 1.0±0.2	2.6±0.2

ORDERING INFORMATION



DELIVERY FORM

OPTIONS:

ZTA/ZTTCC	=4.000 pcs per reel
ZTA/ZTTCR	=3.000 pcs per reel
ZTA/ZTTCE	=3.000 pcs per reel
ZTA/ZTTCS	=1.000 pcs per reel
ZTA/ZTTCV	=1.000 pcs per reel
ZTA/ZTTCW	=3.000 pcs per reel
ZTA/ZTTCP	=4.000 pcs per reel
ZTA/ZTT CZ	=3.000 pcs per reel

EXAMPLE: ZTACS-60.000 MX 1

PLEASE INDICATE YOUR REQUIRED PARAMETERS



PREMIUM QUALITY BY PETERMANN-TECHNIK



OUR COMPANY IS CERTIFIED ACCORDING TO ISO 9001:2015 IN OCTOBER 2016 BY THE DMSZ CERTIFIKATION GMBH AND CERTIFIED ACCORDING TO 14001:2015 IN MARCH 2018 BY SEQ-CERT.

THIS IS FOR YOU TO ENSURE THAT THE PRINCIPLES OF QUALITY MANAGEMENT ARE FULLY IMPLEMENTED IN OUR QUALITY MANAGEMENT SYSTEM AND QUALITY CONTROL METHODS ALSO DOMINATE OUR QUALITY STANDARDS.