PETERMANN TECHNIK
Excellence in clocking
ISO 9001:2008

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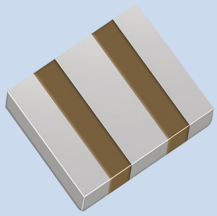


SMD CERAMIC RESONATORS

FEATURES

RoHS-2 2011/65/EU compliant

- High reliability for low cost
- Small dimensions and low profile
- Wide frequency range
- Excellent clock signal generator

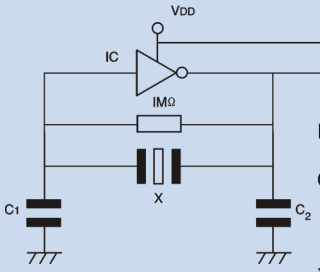
GENERAL DATA

Part Number	Bild-in Capacitor	Frequency Range	Frequency Accuracy	Stability over Temperature	Operating Temperature	Aging For 10 Years
ZTACC-MG ZTTCC-MG	no yes	2.00 - 8.00 MHz	±0.5% at 25°C	±0.3% over -25/+85°C	-25/+85°C	±0.3%
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 ZTTCE-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 ZTTCS-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 ZTTCS-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%
ZTACZ-MX ZTTCZ-MX	no yes	24.00 - 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

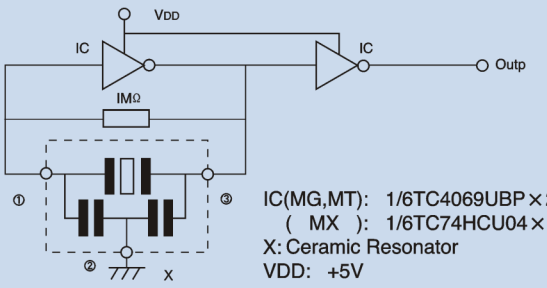
TEST CIRCUIT FOR MOS IC

ZTACC/CR/CS/CV/CW/CZ/CP/CE - MG/MT/MX



IC(MG,MT): 1/6TC4069UBP×2
(MX): 1/6TC74HCU04×2
C1C2(MG,MT): 30pF
(MX): 30pF(13.01～20.0MHz)
15pF(20.01～25.99MHz)
5pF(26.00～60.00MHz)
X: Ceramic Resonator
VDD: +5V

ZTTCC/CR/CE/CS/CV/CW/CZ/CP - MG/MT/MX



IC(MG,MT): 1/6TC4069UBP×2
(MX): 1/6TC74HCU04×2
X: Ceramic Resonator
VDD: +5V

CRYSTALS

OSCILLATORS

CERAMIC RESONATORS

Premium Quality by PETERMANN-TECHNIK

CERAMIC FILTERS

SAW COMPONENTS

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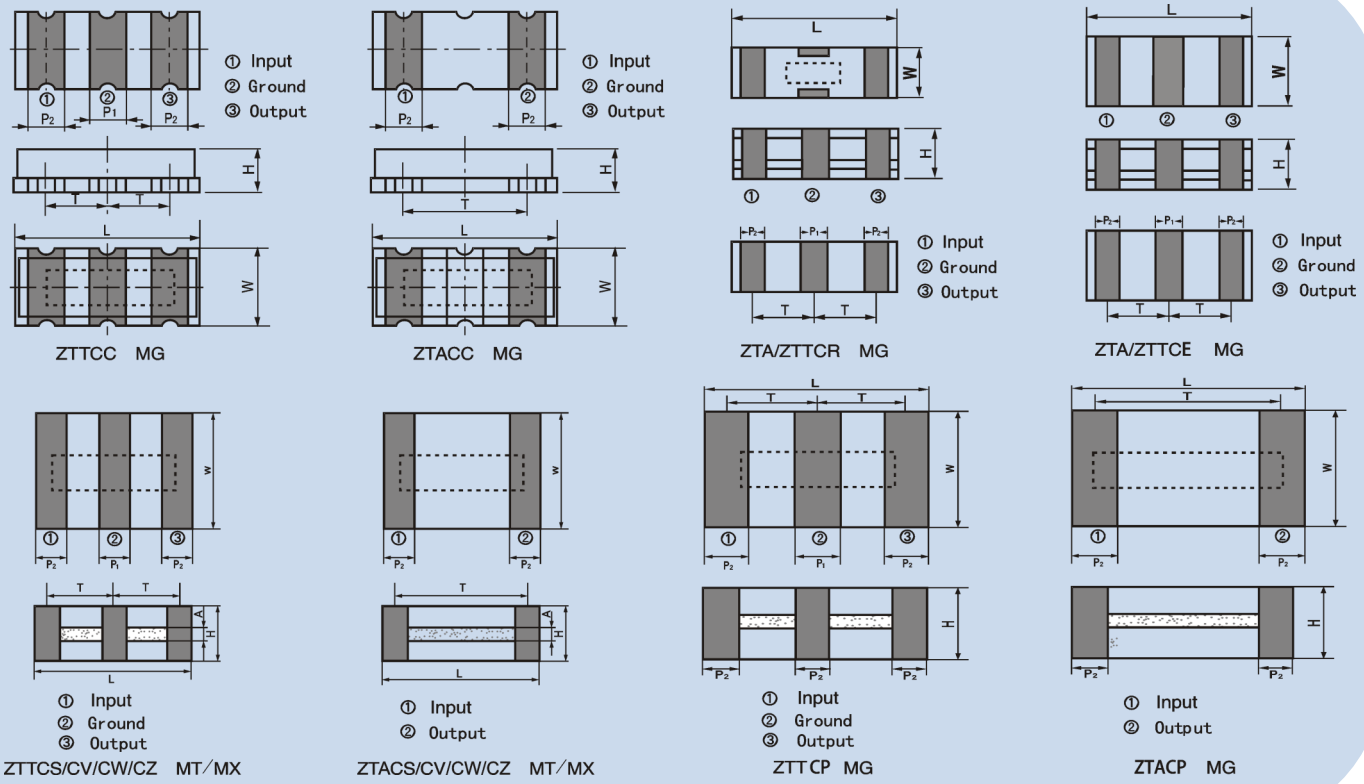
DIMENSIONS



Part Number	L	W	H	P1	P2	T
ZTACC-MG ZTTCC-MG	7.4±0.2	3.4±0.2	1.8±0.2	1.2±0.2	1.2±0.2	5.0±0.2 2.5±0.2
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
ZTACZ-MX ZTTCZ-MX	2.2±0.2	1.8±0.2	1.2max	0.4±0.2	0.5±0.2	1.7±0.2 0.85±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.

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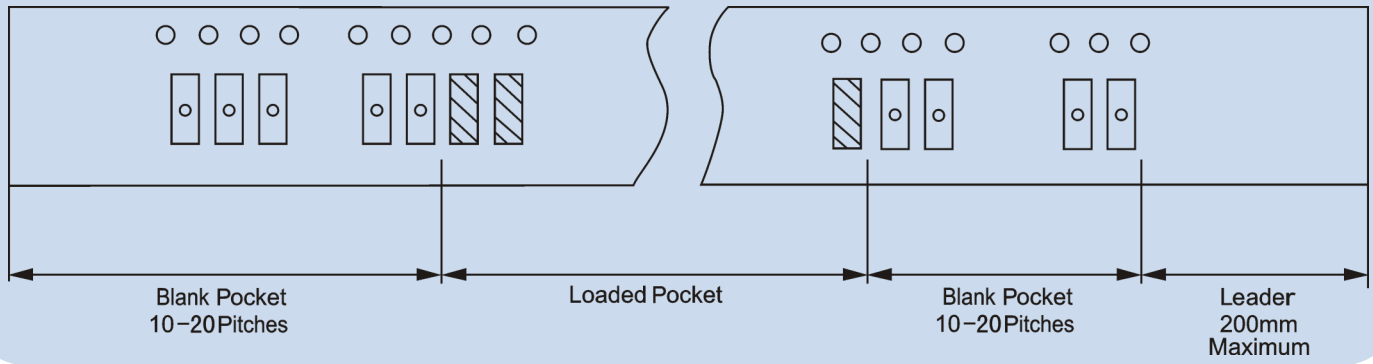
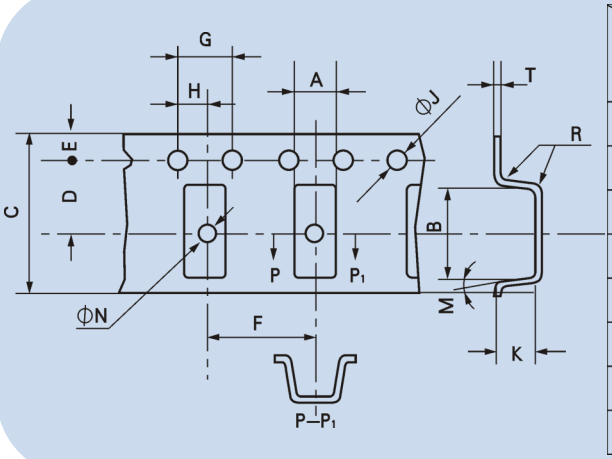
PACKING APPROACH

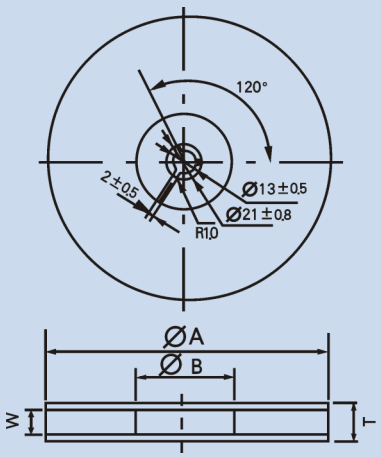


TAPE SIZE



Part Number \ Size Code / Tolerance	A ±0.2	B ±0.2	C ±0.3	D ±0.1	E ±0.1	F ±0.1	G ±0.1	H ±0.1	ØJ ±0.1	ØN ±0.1	M max	R max	K ±0.2	T ±0.1
ZTACC MG ZTTCC MG	3.8	7.8	16.0	7.5	1.75	8.0	4.0	2.0	1.5	1.6	10°	0.3	2.1	0.3
ZTACR MG ZTTCR 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 MG ZTTCE 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 MT/MX ZTTCS 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 MT/MX ZTTCV 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 MX ZTTCW 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
ZTACZ MX ZTTCZ MX	2.1	2.5	8.0	3.5	1.75	4.0	4.0	2.0	1.6	1.1	3°	0.3	1.3	0.25
ZTACP MG ZTTCP 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)

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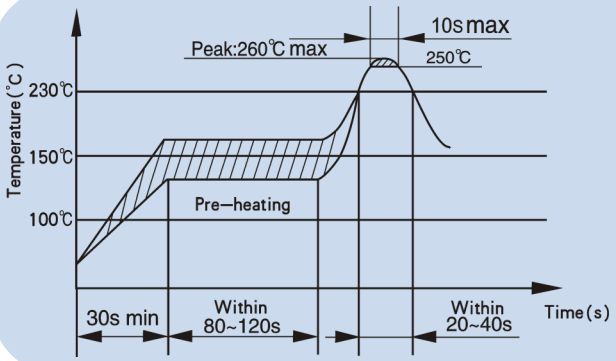
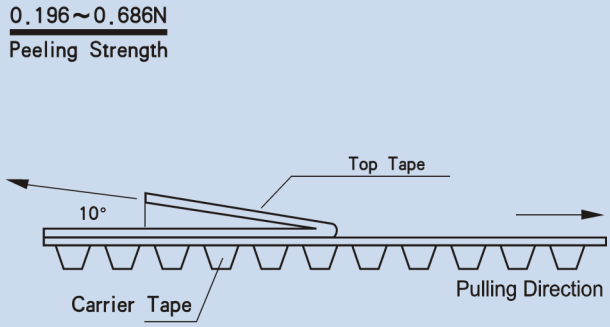
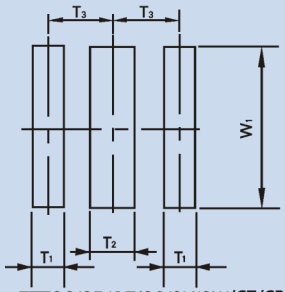
RECOMMENDED REFLOW SOLDERING CONDITIONS



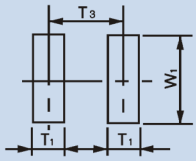
TEST CONDITIONS OF PEELING STRENGTH



RECOMMENDED LAND PATTERN



ZTTCC/CR/CE/CS/CV/CW/CZ/CP
MG/MT/MX



ZTACC/CR/CE/CS/CV/CW/CZ/CP
MG/MT/MX

Part Number \ Size Code	Size (mm)			
	T_1	T_2	T_3	W_1
ZTACC/CP MG ZTTCC/CP MG	1.5±0.3	1.7±0.3	5.0±0.3 2.5±0.3	4.0±0.3
ZTACR MG ZTTCR MG	0.8±0.2	0.8±0.2	3.0±0.2 1.5±0.2	2.6±0.2
ZTACE MG ZTTCE MG	0.4±0.2	0.4±0.2	1.2±0.2	2.0±0.2
ZTACS MT/MX ZTTCS MT/MX	0.8±0.2	1.3±0.2	3.9±0.2 1.95±0.2	5.1±0.2
ZTACV MT/MX ZTTCV MT/MX	0.7±0.2	1.0±0.2	3.0±0.2 1.5±0.2	4.1±0.2
ZTACW MX ZTTCW MX	0.5±0.2	0.5±0.2	2.0±0.2 1.0±0.2	2.6±0.2
ZTACZ MX ZTTCZ MX	0.5±0.2	0.5±0.2	1.7±0.2 0.85±0.2	2.4±0.2

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ORDERING INFORMATION

Series	Frequency	Model Code	Delivery Form
ZTTCS	60.000	MX	1

Example: ZTACS-60.000MX 1
PLEASE INDICATE YOUR REQUIRED SERIES

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/ZTTCZ	=3.000 pcs per reel