



Chengdu Kingbri Frequency Technology Co., Ltd

PRODUCT TYPE:

TMF-SMD2016 Oscillator

PRODUCT APPROVAL

ITEM	TMF-SMD2016 Oscillator		
TITLE	01.T.MF.DTGVBS1026000000		
DESCRIPTION	TMF-SMD2016 OSC 26.000000MHz 1.8V		
SEC CODE	-		
APPLIED TO REFERENCE	SAMSUNG ELECTRONICS Co.,Ltd		
WEIGHT	GW box (kg)	NW Reel (g)	Part (g)
	4.202	36	0.012

PATENT NO.	
Vendor Code	DBA4
Green partner registration date	2020/2/24

Drafting	ISS	CHK.(R&D)	CHK.(QA)	APP.
SIGN	杨静		吉子艳	杨静
DATE	2020/2/24	2020/2/24	2020/2/24	2020/2/24

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ASSEMBLY			
TEST			
WEB SITE	www.chinacrec.com		

	PRODUCT SPECIFICATION	LANGUAGE
		English
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LANGUAGE

English

[illegible]

REV	TITLE	SEC CODE	SHEET
A	01.T.MF.DTGVBS1026000000	-	1



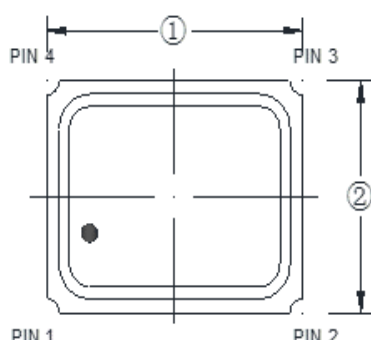
PRODUCT SPECIFICATION

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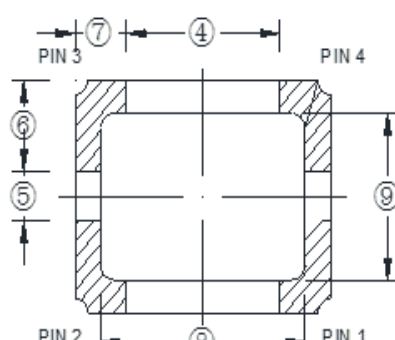
English

5 Figure

5.1 External structure



Top View



Bottom View



Front View

Pin	Connection
Pin 1	GND
Pin 2	GND
Pin 3	Output
Pin 4	Vdd

Position	SPEC (mm)	TOLERANCE (mm)	REMARK
①	2.00	±0.10	-
②	1.60	±0.10	-
③	0.70	±0.10	-
④	1.20	±0.10	-
⑤	0.34	±0.10	-
⑥	0.63	±0.10	-
⑦	0.40	±0.10	-
⑧	1.60	±0.10	-
⑨	1.15	±0.10	-

5.2 Marking



No.	Item		E.G.	Remark
1	C	LOGO 1 Digit	C	C: LOGO CREC
2	XX. XXX	Nominal Frequency (MHz) 6 Digit	26.000	26.000=26.000000MHz
3	TMF	MODEL 3 Digit	TMF	TMF=TCXO SMD2016
4	Y	Year: Last 1 Digit	0	0=2020
5	WW	Week Code 2Digit	09	9th Week

REV	TITLE	SEC CODE	SHEET
A	01.T.MF.DTGVBS1026000000	-	2

			PRODUCT SPECIFICATION				LANGUAGE English	
Performance								
6.1 Electrical Performance								
* Measure equipment								
Electrical characteristics measured by S&A280B.								
No.	Item		Symb.	Electrical Specification				Remark (Humidity: 40%~60%)
				Min.	Type	Max.	Unit	
1	Nominal Frequency		F0	26.000000			MHz	-
2	Output wavform		-	Clipped sine wave			-	-
3	Supply voltage		Vdd	1.71	1.8	1.89	V	at 25 °C,
4	Current		Icc	-	-	1.5	mA	at 25 °C,
5	Frequency tolerance		ΔF/F0	-1.5	-	1.5	ppm	at 25 °C,
6	Operating Temperature Range		T _{OPR}	-40	-	125	°C	
7	Frequency Stability		Tc1	-0.5	-	0.5	ppm	-40~85℃
	Frequency Stability		Tc2	-50	-	50	ppm	-40~125℃
8	Storage Temperature		Tstg	-55	-	125	°C	-
9	Supply voltage stability		-	-0.2	-	0.2	ppm	±5%Vdd at 25 °C
10	Load sensitivity		-	-0.2	-	0.2	ppm	±10% Load change
11	Output voltage level	Logic "1"	VOH	1.3	-	-	V	at 25±3℃
		Logic "0"	VOL	-	-	0.4	V	at 25±3℃
		Swing level	-	1.0	-	-	V	at 25±3℃
12	Symmertry		Duty	47	-	53	%	at 25±3℃
13	Output load		CL	10Kohm/10pF			-	-
14	Start time		St	-	-	2.0	ms	-
15	RMS Phase Jitter		RMS	-	-	1.0	pSec	12KHz ~5MHz
16	Phase Noise	10Hz offset	-	-	-90	-	dBc/Hz	at 25 °C,
		100Hz offset	-	-	-115	-	dBc/Hz	at 25 °C,
		1KHz offset	-	-	-135	-	dBc/Hz	at 25 °C,
		10KHz offset	-	-	-150	-	dBc/Hz	at 25 °C,
		100KHz offset	-	-	-152	-	dBc/Hz	at 25 °C,
17	Aging		Aging	-1	-	1	ppm	
18	Reliability		AEC-Q100					
19	Package type		TMF-SMD2016					

REV	TITLE	SEC CODE	SHEET
A	01.T.MF.DTGVBS1026000000	-	3

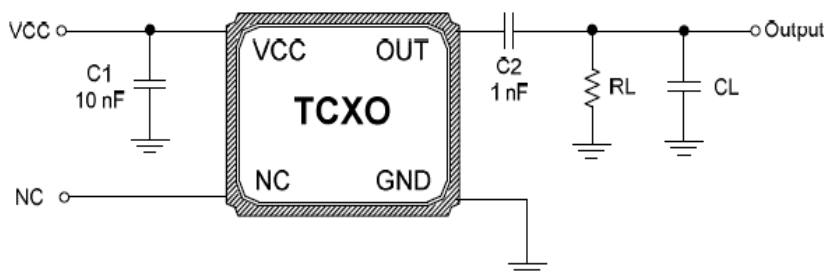


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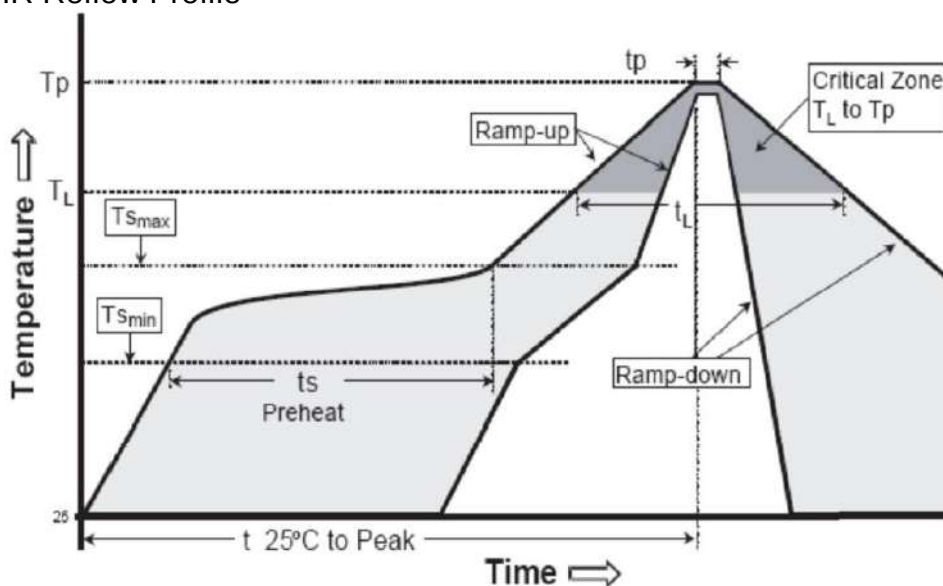
7 Measurement Circuit



External Components

Part	Function
C1	AC Noise Bypass for VCC
C2	DC Block for Output
RL	Load Resistance
CL	Load Capacitance

8 IR Reflow Profile



Remark: Reference JEDEC J-STD-020C

Profiles Feature	Pb-Free Assembly
Average Ramp-up Rate (Ts max to Tp)	3°C/second max.
Preheat ■ Temperature Min (Ts min) ■ Temperature Max (Ts max) ■ Time (ts min to ts max)	125°C 200°C 60~180 seconds
Time maintained above ■ Temperature (TL) ■ Time (tL)	217°C 60~150 seconds
Peak/Classification Temperature (Tp)	245°C
Time within 5°C of actual Peak Temperature (tp)	20~40 seconds
Ramp-down rate	6°C/second Max
Time 25°C to Peak Temperature	8 minutes Max
Suggest reflow times	3 times

REV	TITLE	SEC CODE	SHEET
A	01.T.MF.DTGVBS1026000000	-	4

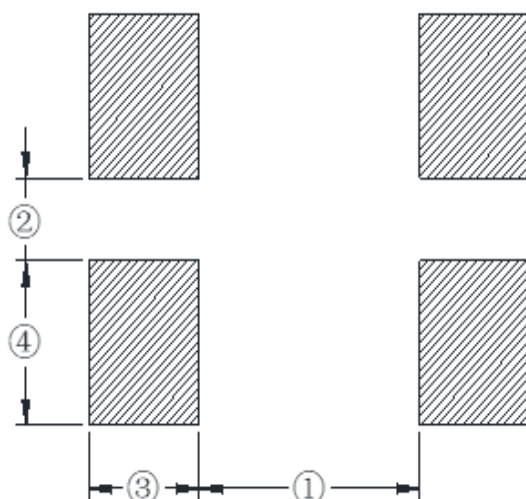


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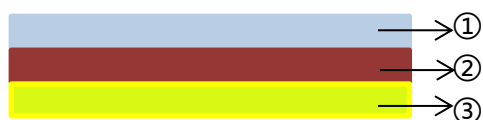
English

9 Plating Specification of Pin Recommended Solder Pad



Position	SPEC (mm)	TOLERANCE (mm)	REMARK
①	1.2	±0.1	-
②	0.4	±0.1	-
③	0.6	±0.1	-
④	0.8	±0.1	-

Plating Specification of Lead



Position	Part Name	Material	SPEC (μm)	REMARK
①	Base Material	W (wolfram)	-	X-ray fluorescence thickness gauge
②	Middle Plating	Ni (nickel)	1.27~8.89	
③	Finish Plating	Au (Gold)	0.3~0.7	

REV	TITLE	SEC CODE	SHEET
A	01.T.MF.DTGVBS1026000000	-	5



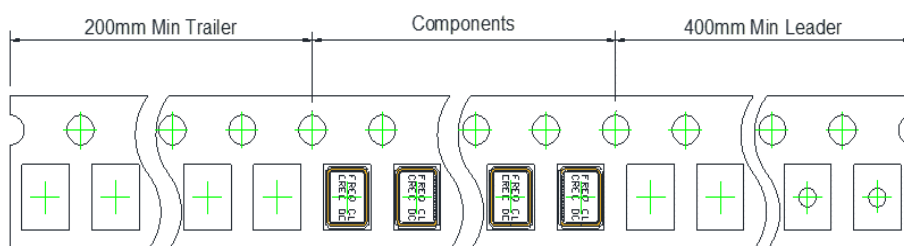
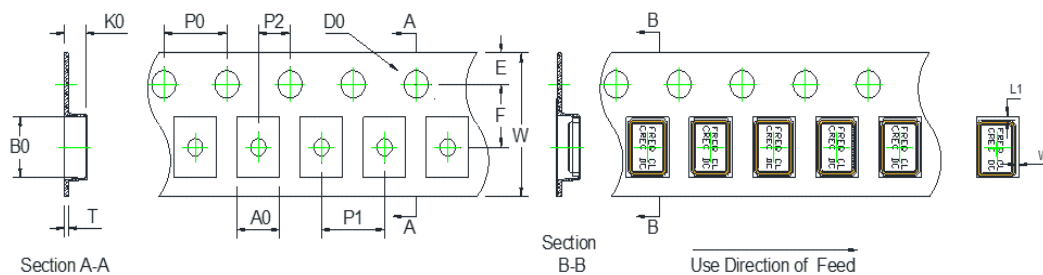
PRODUCT SPECIFICATION

LANGUAGE

English

11 Packing specification

11.1 Tape Dimensions

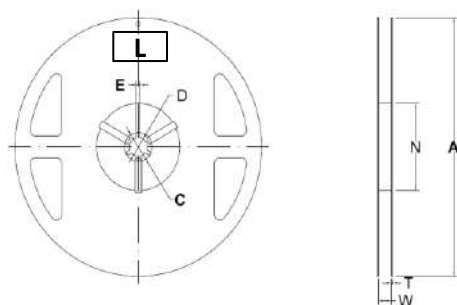


ITEM	W	P1	E	F	D0	P0	P2	A0	B0	K0	T	L1	W1
Spec(mm)	8.00	4.00	1.75	3.50	1.55	4.00	2.00	1.90	2.30	0.95	0.25	0.20	0.20
Tol.(mm)	±0.30	±0.10	±0.22	±0.10	±0.05	±0.10	±0.10	±0.10	±0.10	±0.10	±0.05	±0.05	±0.05

◆ Material of Tape

Item	Material
Carrier tape	PS (Black)
Cover tape	PET

11.2 Reel Dimensions



Item	A	W	N	C	D	E	T	L (Label size)	
								①	②
SPEC(mm)	178.0	9.0	60.2	20.2	13.2	2.5	1.4	100	50
Tol.(mm)	±2.0	±0.5	±0.5	±1.0	±0.5	±0.5	±0.2	-	-

◆ Material of Tape

Item	Material
REEL	PS (White)

REV	TITLE	SEC CODE	SHEET
A	01.T.MF.DTGVBS1026000000	-	6



PRODUCT SPECIFICATION

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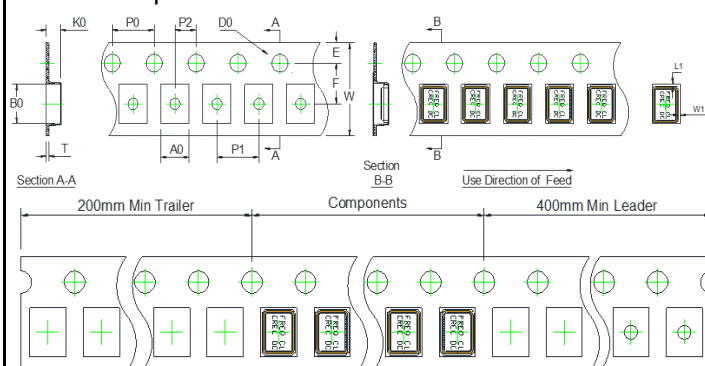
English

11 SMD Data

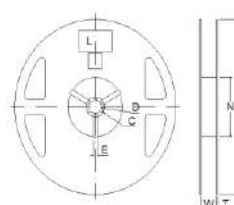
SMD DATA				Actual Component Picture		Polarity picture		Actual Reel Picture(Reel with Real parts, More than 3 pcs)																									
01.T.MF.DTGVBS1026000000									Use Direction of feed																								
						Polarity	Non Polar																										
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4. Cover tape / carrier Antistatic treatment & Bonding Method				<table><tr><th>Item</th><th>Size(mm)</th></tr><tr><td>Width</td><td>8</td></tr><tr><td>Pitch</td><td>4</td></tr><tr><td>POCKET Material</td><td>EMBOSS PAPER</td></tr></table>	Item	Size(mm)	Width	8	Pitch	4	POCKET Material	EMBOSS PAPER		<table><tr><th>Item</th><th>Size (mm)</th></tr><tr><td>B0</td><td>2.30</td></tr><tr><td>A0</td><td>1.90</td></tr></table>		Item	Size (mm)	B0	2.30	A0	1.90												
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※ Carrier Tape and Reel Drawing

a.Carrier Tape



b.Reel



Item	A	W	N	C	D	E	T	(Lable size)	
SPEC(mm)	178.0	9.0	60.2	20.2	13.2	2.5	1.4	①	②
Tol.(mm)	±2.0	±0.5	±0.5	±1.0	±0.5	±0.5	±0.2	-	-

ITEM	W	P1	E	F	D0	P0	P2	A0	B0	K0	T	L1	W1
Spec(mm)	8.00	4.00	1.75	3.50	1.55	4.00	2.00	1.90	2.30	0.95	0.25	0.20	0.20
Tol.(mm)	±0.30	±0.10	±0.22	±0.10	±0.05	±0.10	±0.10	±0.10	±0.10	±0.10	±0.05	±0.05	±0.05

REV

TITLE

SEC CODE

SHEET

A

01.T.MF.DTGVBS1026000000

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