

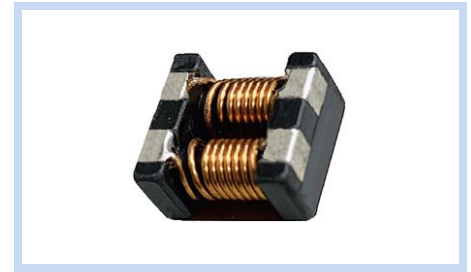
Common Mode Filter 7.0x6.0mm

SIC-70641 series

MERITEK

FEATURE

- Common Mode Filter For Large Current Applications
- Excellent Impedance Characteristics for Noise Suppression
- Low Profile Construction Design
- Application: High-Density Portable Devices, Personal Computers, Display Panels, DC Power Lines and Automotive Power Trains



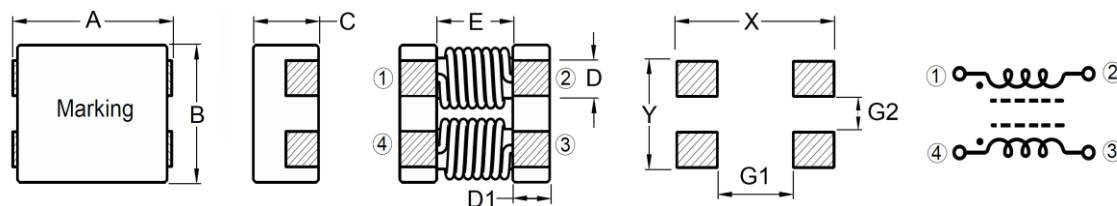
ELECTRICAL CHARACTERISTICS - 7060

Part Number	Common Mode Impedance (Ω)		Test Frequency (MHz)	DCR Max (m Ω)	Rated Current (A) Max	Rated Voltage (Vdc) Max.	IR Min (M Ω)
	Min	Typ					
SIC40015A70F41	40	70	100	5	15	80	10
SIC1019A070F41	100	140	100	10	9.0	80	10
SIC3015A070F41	225	300	100	10	5.0	80	10
SIC5015A070F41	400	500	100	10	5.0	80	10
SIC7014A070F41	500	700	100	15	4.0	80	10
SIC1023A070F41	800	1020	100	17	3.0	80	10
SIC1323A070F41	910	1300	100	20	3.0	80	10
SIC1019A070C41	100	140	100	10	9.0	125	10
SIC3015A070C41	225	300	100	10	5.0	125	10
SIC5015A070C41	275	450	100	10	5.0	125	10
SIC6014A070C41	500	700	100	15	4.0	125	10
SIC7014A070C41	500	700	100	15	4.0	125	10
SIC1023A070C41	800	1020	100	17	3.0	125	10
SIC1322A570C41	910	1300	100	21	2.5	125	10
SIC2721A070C41	2000	2700	100	63	1.0	125	10
SIC302A9070C41	2500	3000	100	75	0.9	125	10

Notes:

1. All test data referenced to 25°C ambient.
2. Operating Temperature: -40°C ~ +125°C (Including Self-temperature rise)

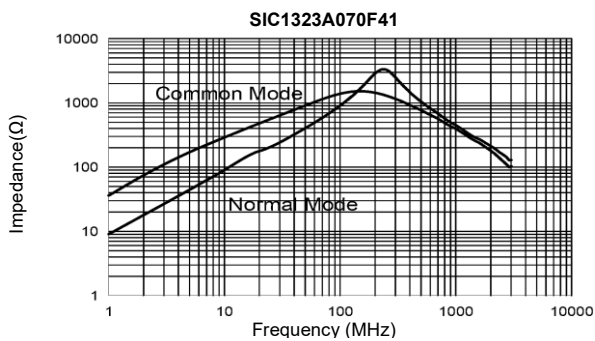
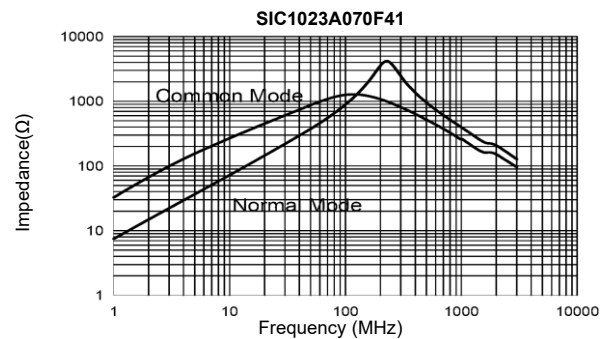
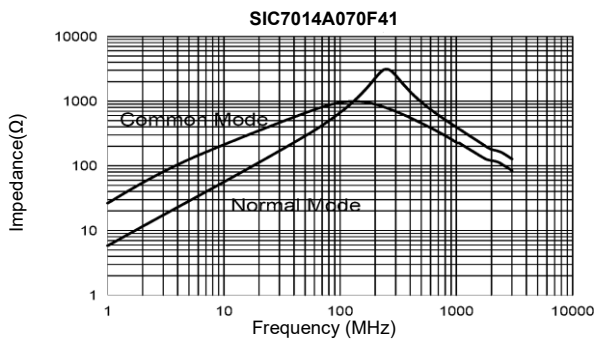
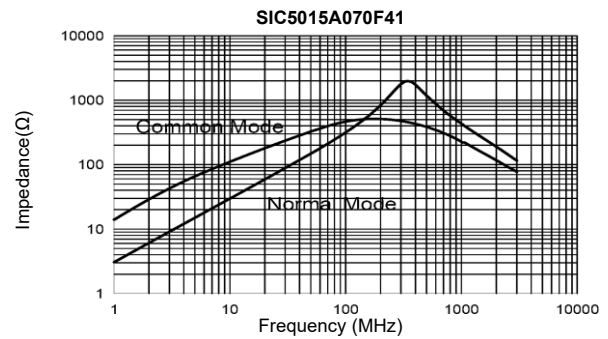
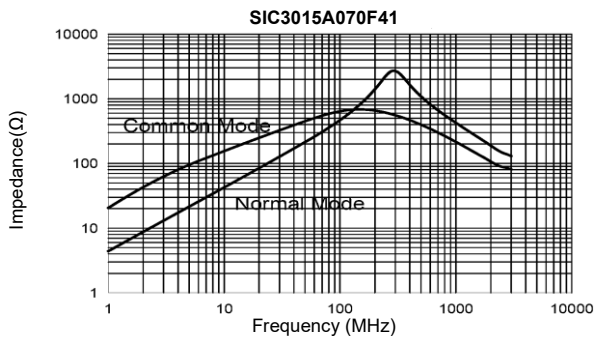
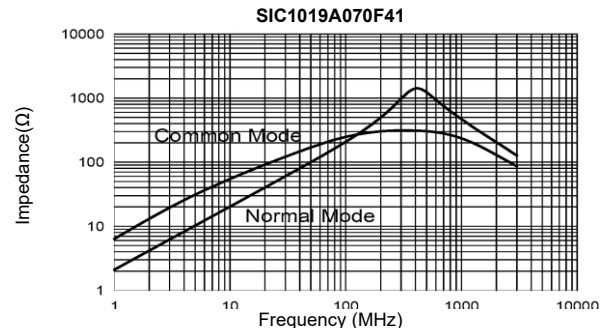
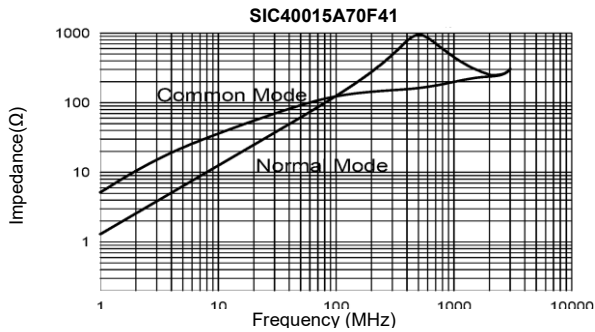
DIMENSIONS



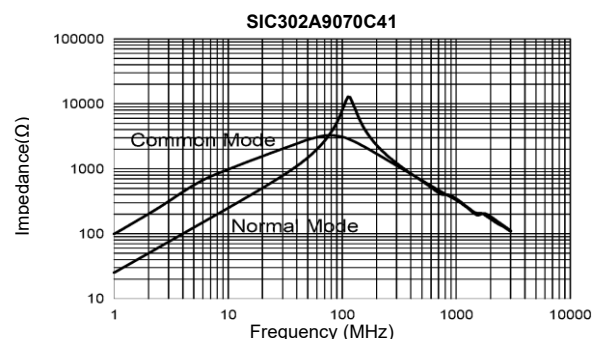
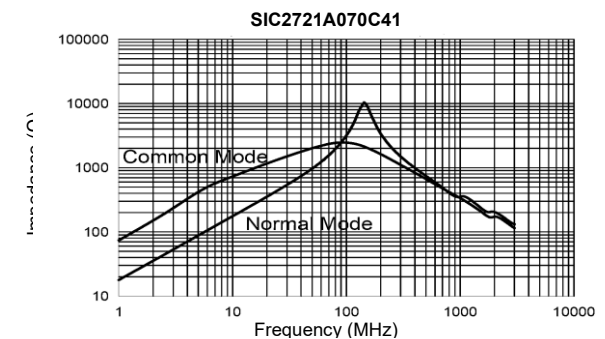
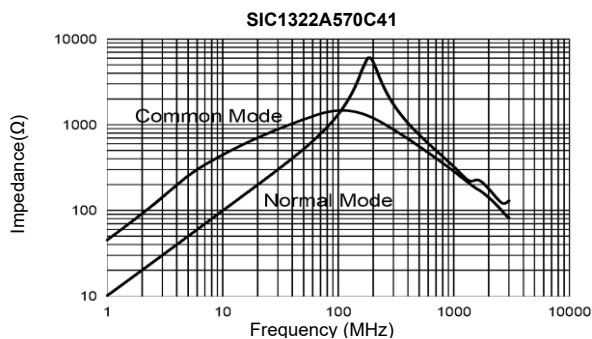
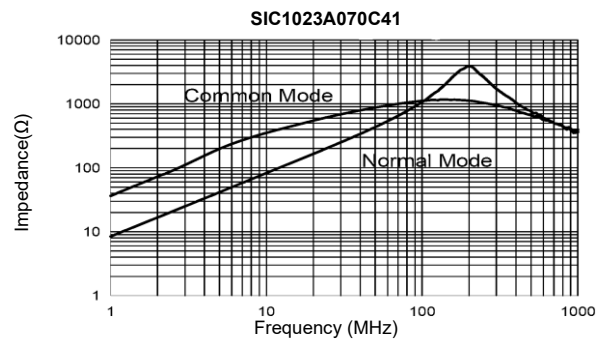
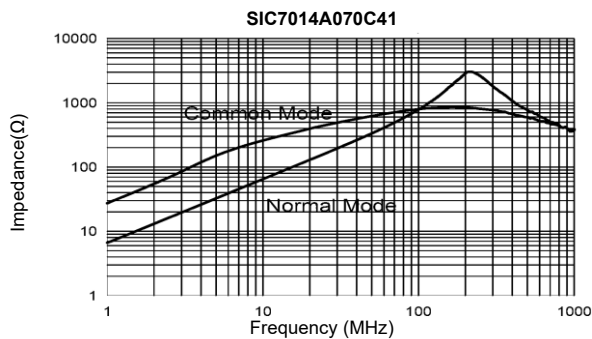
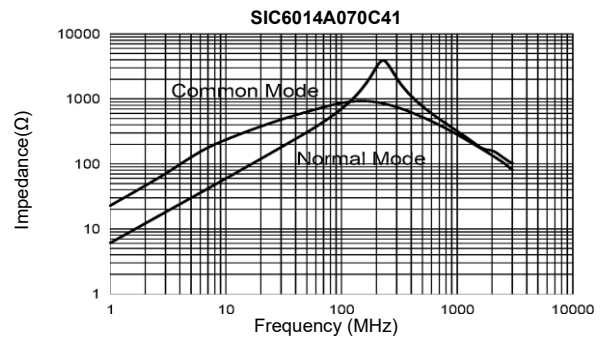
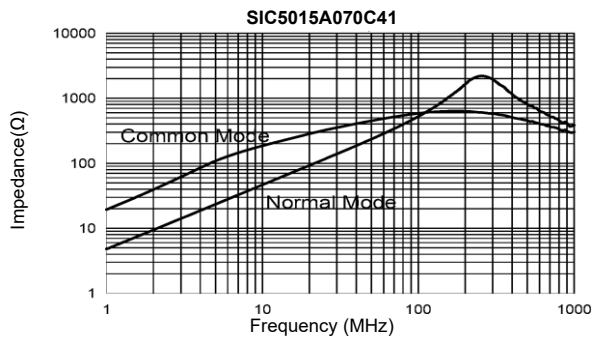
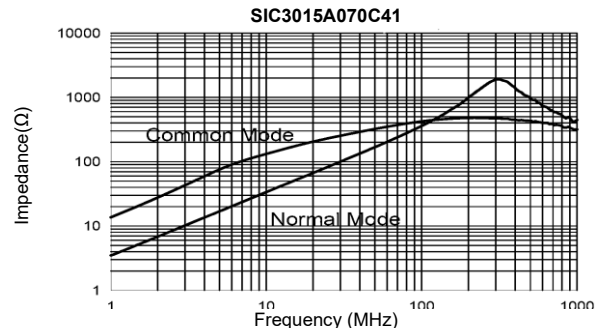
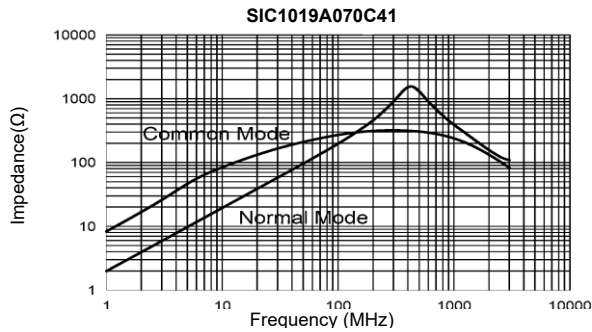
Unit: mm

Size Code	A ± 0.5	B ± 0.5	C Max	D	D1	E Typ	X	Y	G1	G2
70F	7.0	6.00	3.8	1.5 ± 0.5	1.7 ± 0.5	3.5	9.0	4.5	4.0	1.5
70C	7.0	6.00	3.8	1.5 Typ	1.7 Typ	3.5	9.0	4.5	4.0	1.5

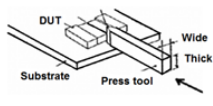
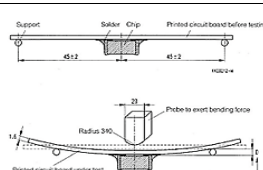
CHARACTERISTIC CURVE



CHARACTERISTIC CURVE



RELIABILITY TEST CONDITON AND REQUIREMENT

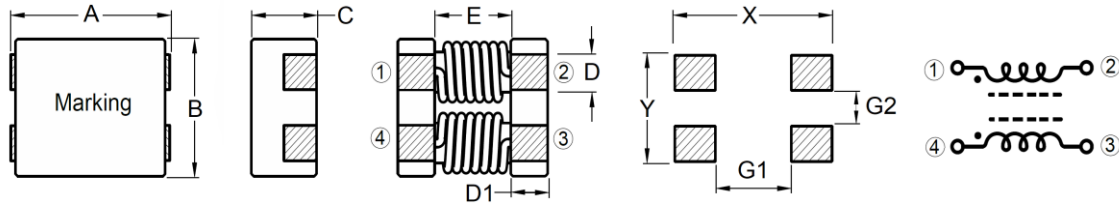
Item	Test Standards / Conditions / Equipment	Requirement															
Impedance	Agilent-4291A, Agilent-16197A	Refer to specification															
DC Resistance	Agilent-4338B	Refer to specification															
I.R	Agilent-4339	Refer to specification															
Temperature Rise Test	1. Applied the allowed DC current 2. Temperature measured by digital surface thermometer	Rated Current < 1A : $\Delta T = 20^{\circ}C$ Max Rated Current $\geq 1A$: $\Delta T = 40^{\circ}C$ Max															
Mechanical Shock	<table border="1"> <thead> <tr> <th>Type</th> <th>Peak value (g's)</th> <th>Normal duration (D) (ms)</th> <th>Wave form</th> <th>Velocity change (Vi) ft/sec</th> </tr> </thead> <tbody> <tr> <td>SMD</td> <td>50</td> <td>11</td> <td>Half-sine</td> <td>11.3</td> </tr> <tr> <td>Lead</td> <td>50</td> <td>11</td> <td>Half-sine</td> <td>11.3</td> </tr> </tbody> </table>	Type	Peak value (g's)	Normal duration (D) (ms)	Wave form	Velocity change (Vi) ft/sec	SMD	50	11	Half-sine	11.3	Lead	50	11	Half-sine	11.3	Appearance: No damage Impedance: within $\pm 15\%$ of initial value Inductance: within $\pm 10\%$ of initial value Q: Shall not exceed the specification value RDC: within $\pm 15\%$ of initial value and shall not exceed the specification value
	Type	Peak value (g's)	Normal duration (D) (ms)	Wave form	Velocity change (Vi) ft/sec												
SMD	50	11	Half-sine	11.3													
Lead	50	11	Half-sine	11.3													
3 shocks in each direction along 3 perpendicular axes (18 shocks).																	
Solderability	Method B1, 4 Hrs at $155^{\circ}C$ dry heat at $255^{\circ}C \pm 5^{\circ}C$ Test Time: 5 +0/-0.5 seconds. Method D category 3. (steam aging 8 hours ± 15 min) at $260^{\circ}C \pm 5^{\circ}C$ Test Time: 30+0/-0.5 seconds.	More than 95% of the terminal electrode should be covered with solder.															
Resistance to Soldering Heat	Solder temperature: $260 \pm 5^{\circ}C$ for 10 seconds Temperature ramp/immersion and emersion rate 25mm/s ± 6 mm/s. Completely cover the termination. Number of cycles: 1 heat cycle	Appearance: No damage Impedance: within $\pm 15\%$ of initial value Inductance: within $\pm 10\%$ of initial value Q: Shall not exceed the specification value RDC: within $\pm 15\%$ of initial value and shall not exceed the specification value															
Vibration	Oscillation Frequency: 10~2K~10 Hz for 20 minutes Total Amplitude: $1.52mm \pm 10\%$ Testing Time: 12 hours (20 minutes, 12 cycles each of 3 orientations)																
Load Humidity	Humidity: $85 \pm 2\%$ R.H. Temperature: $85^{\circ}C \pm 2^{\circ}C$ Duration: 1000Hrs Min at 100% rated current Measured at Room Temperature after 24 ± 2 hrs	Appearance: No damage Impedance: within $\pm 15\%$ of initial value Inductance: within $\pm 10\%$ of initial value Q: Shall not exceed the specification value RDC: within $\pm 15\%$ of initial value and shall not exceed the specification value															
Life Test	Temperature: $125 \pm 2^{\circ}C$ Duration: 1000Hrs Min. with 100% rated current Measured at Room Temperature after 24 ± 2 hrs																
Thermal Shock	Temperature: $-40 \sim 125^{\circ}C$ Dwell Time: 15minutes, Transfer Time: 20seconds Max Number of Cycles: 300cycles Measured at room temperature after placing for 24 ± 2 hrs																
Terminal Strength	Component mounted on a PCB apply a force to the side of a device being tested. >0805inch(2012mm): 1Kg, <=0805inch(2012mm): 0.5Kg Duration 60 +1 seconds. The force shall be applied gradually as not to shock the component being tested.	 Appearance : No damage															
Board Flex	Place the 100x40mm FR4 board into a fixture with the component facing down. Apply a force which will bend the board: >=0805in(2012mm): 1.2mm <0805in(2012mm): 0.8mm Duration: 10 seconds. The Force is to be applied only once to the board	 Appearance : No damage															
Moisture Resistance	1. Baked at $50^{\circ}C$ for 25hrs, measure at room temp after 4hrs. 2. Raise temperature to $65 \pm 2^{\circ}C$ 90-100%RH in 2.5hrs, 3. Keep at $65^{\circ}C$ for 3 hours, cool down to $25^{\circ}C$ in 2.5hrs. 4. Raise temperature to $65 \pm 2^{\circ}C$ 90-100%RH in 2.5hrs 5. Keep at $65^{\circ}C$ for 3hrs, cool down to $25^{\circ}C$ in 2.5hrs 6. Keep at $25^{\circ}C$ for 2hrs then keep at $-10^{\circ}C$ for 3hrs 7. Keep at $25^{\circ}C$ 80-100%RH for 15min, Vibrate at the frequency of 10 to 55 Hz to 10 Hz, Measure at room temperature after 1~2 hrs.	Appearance: No damage Impedance: within $\pm 15\%$ of initial value Inductance: within $\pm 10\%$ of initial value Q: Shall not exceed the specification value RDC: within $\pm 15\%$ of initial value and shall not exceed the specification value															

Common Mode Filter 7.0x6.0mm

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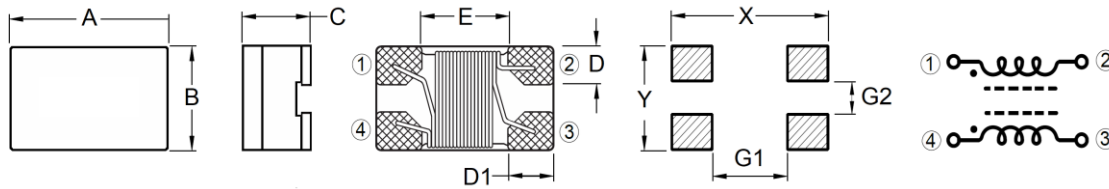
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DIMENSIONS – SIC-41 Series



Unit: mm

Size Code	A ± 0.5	B ± 0.5	C Max	D	D1	E Typ	X	Y	G1	G2
121	12	10.8	6.4	2.7 ± 0.2	2.5 ± 0.2	7.0	12.2	8.1	6.8	2.3
70F	7.0	6.00	3.8	1.5 ± 0.5	1.7 ± 0.5	3.5	9.0	4.5	4.0	1.5
70C	7.0	6.00	3.8	1.5 Typ	1.7 Typ	3.5	9.0	4.5	4.0	1.5
907	9.0	7.00	4.8	1.5 ± 0.2	1.7 ± 0.2	5.7	11	5.0	5.0	1.5



Unit: mm

Size Code	A ± 0.2	B ± 0.2	C ± 0.2	D ± 0.1	D1 ± 0.1	E Typ	X	Y	G1	G2
04 (0504)	1.2	1.00	0.9	0.35	0.35	0.5	1.5	1.2	0.6	0.3
03 (0603)	1.6	0.85	1.1	0.30	0.30	1.0	2.3	0.75	0.6	0.25
05 (0805)	2.0	1.20	1.2	0.50	0.50	1.0	2.6	1.25	1.1	0.45
06 (1206)	3.2	1.60	2.0	0.50	0.50	2.2	3.7	1.6	1.9	0.4
10 (1210)	3.2	2.50	2.2	0.80	0.90	1.4	4.4	3.5	1.6	0.6
12 (1812)	4.5	3.20	2.8	1.00	1.20	2.1	4.8	3.8	2.5	0.7

Common Mode Filter 7.0x6.0mm

SIC-70641 series

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PART NUMBERING SYSTEM

SIC 302 A90 70C 41
(1) (2) (3) (4) (5)

No	Item	Code	Description
(1)	Product Code	SIC	Surface Mount Inductor, Common Mode Choke type
(2)	Impedance	302	3000Ω
(3)	Rated Current	A90	0.9A
(4)	Size Code	70C	7.0 X 6.0mm
(5)	Series Code	41	Common Mode Filter, for Power Line

RECOMMENDED SOLDERING PROFILES

Reflow Condition		
Pre Heat	Temp. Min $T_{s(min)}$	150°C
	Temp. Max $T_{s(max)}$	200°C
	Time (min. to max.) (t_s)	60 ~120 seconds
Average ramp up rate (Liquidus Temperature) (T_L) to peak		3°C/second max
$T_{s(max)}$ to T_L (Ramp-up rate)		3°C/second max
Reflow	Temp. (T_L)	217°C
	Time (min. to max.) (t_L)	60 ~150 seconds
Peak Temperature (T_P)		See table below
Time within 5°C of actual peak Temperature (t_p)		10 seconds max
Ramp-down Rate		6°C/second max
Reflow Times		3 times max

Peak Temperature (T_P)			
Volume	< 350mm ³	350-2000mm ³	> 2000mm ³
Thickness < 1.6mm	260°C	260°C	260°C
Thickness 1.6-2.5mm	260°C	250°C	245°C
Thickness ≥ 2.5mm	250°C	245°C	245°C

*Specifications subject to change without notice

