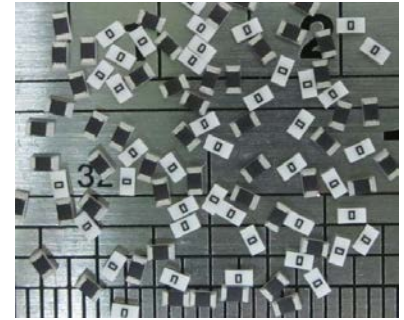


- Features:
- Chip size from 0402 to 2512
  - Max. resistance value less than 3 milliohm for 0402, less than 0.5 milliohm for all other sizes
  - 1206 package size qualified to AEC-Q200
  - RoHS compliant – lead free

- Applications:
- Switching power supply
  - Voltage regulation module
  - DC-DC converter, adaptor, battery pack, charger
  - PDA and cell phone
  - Power management applications

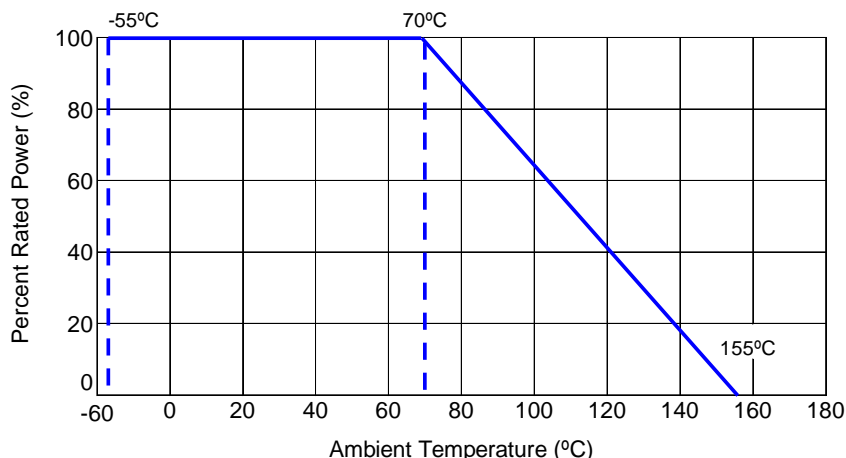


Electrical Specifications				
Type / Code	Current Rating (A)	Power Rating (W)	Operating Temperature Range	Ohmic Range (Ω)
0402	6.5	0.125W	-55°C to +155°C	< 0.003
0603	22.4	0.25W		< 0.0005
0805	31.6	0.5W		
1206	38.7	0.75W		
2512	63.2	2W		

Power rating:  $P=I^2 \cdot R$

Mechanical Specifications					
Type / Code	L	W	t	A	Unit
0402	0.039 ± 0.004	0.020 ± 0.002	0.016 ± 0.002	0.012 ± 0.004	inches
	1.00 ± 0.10	0.50 ± 0.05	0.40 ± 0.05	0.30 ± 0.10	mm
0603	0.061 ± 0.004	0.031 ± 0.004	0.018 ± 0.004	0.014 ± 0.008	inches
	1.55 ± 0.10	0.80 ± 0.10	0.45 ± 0.10	0.35 ± 0.20	mm
0805	0.083 ± 0.006	0.053 ± 0.006	0.028 ± 0.004	0.022 ± 0.008	inches
	2.10 ± 0.15	1.35 ± 0.15	0.70 ± 0.10	0.55 ± 0.20	mm
1206	0.122 ± 0.008	0.061 ± 0.004	0.028 ± 0.004	0.031 ± 0.008	inches
	3.10 ± 0.20	1.55 ± 0.10	0.70 ± 0.10	0.80 ± 0.20	mm
2512	0.256 ± 0.008	0.126 ± 0.008	0.030 ± 0.004	0.033 ± 0.010	inches
	6.50 ± 0.20	3.20 ± 0.20	0.75 ± 0.10	0.85 ± 0.25	mm

Power Derating Curve:



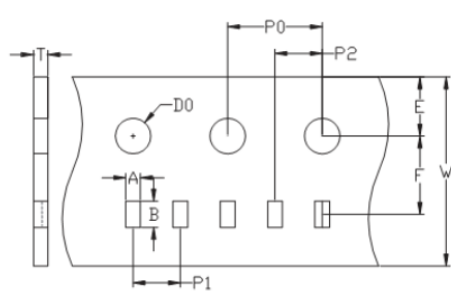
Environmental Performance Characteristics		
Item	Test Condition	Specification
Short Time Overload	2.5X rated current for 5 seconds (JIS-C5202-5.5)	
Damp Heat with Load	Specimens shall be placed in a chamber and subject to a relative humidity of 90~95% and to a temperature of 40°C ± 2°C for the period of 1000 hours (MIL-STD_202, Method 103)	
High Temperature Exposure	Part (mounted on board) is exposed in the heat chamber 125°C ± 3°C for 1000 hours (JIS_C5202-7.2)	
Load Life	Apply rated power at 70°C ± 2°C for 1000 hours with 1.5 hours ON and 0.5 hour OFF (JIS_C5202-7.10)	
Rapid Change of Temperature	<p>Part (mounted on board) is exposed, -55°C ± 3°C (30 min.)/+155 ± 2°C (30 minutes) for 5 cycles. The following conditions as per picture below. (JIS_C5202-7.4)</p>	For 0402 size max. 0.003Ω All other sizes max. 0.0005Ω
Bending Strength	<p>Mount part to test substrate. Apply pressure in direction of arrow unit band width reaches 0.5mm (+0.2/-0mm)(illustrated in the figure below) and hold for 10 seconds ± 1 second. (JIS_C5202-6.1)</p> <p>Unit: mm</p>	For 0402 size max. 0.003Ω All other sizes max. 0.0005Ω

Note: Test board surface temperature shall not exceed 100°C when applying rated current.

Storage Conditions: 5°C ~ 35°C. RH: 40%-75%

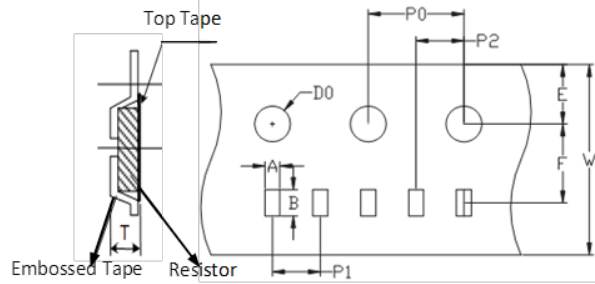
Function Performance Characteristics		
Item	Test Condition	Specification
Solvent Resistance	The part shall be completely immersed in the isopropyl alcohol for 3 minutes +0.5, -0 minutes, 25°C ± 5°C (MIL_STD_202, Method 215)	Verify that marking remains. (Not required for laser etched parts or parts with no marking)
Resistance to Solder Heat	The part shall be immersed into the flux specified in the solder bath 260 °C ± 5 °C for 10 seconds ± 1 second (MIL_STD_202, Method 210)	For 0402 size max. 0.003Ω All other sizes max. 0.0005Ω
Solderability	The part shall be immersed into the flux specified in the solder bath 235°C ± 5°C for 2 seconds ± 0.5 seconds. It shall be immersed to a point 10mm from its root.	Solder shall be covered 95% or more of the electrode area

**Packaging Specifications – Paper Tape**



Type / Code	A	B	E	F	W	Unit
0402	0.028 ± 0.002	0.047 ± 0.002	0.069 ± 0.004	0.138 ± 0.002	0.315 ± 0.008	inches
	0.70 ± 0.05	1.20 ± 0.05	1.75 ± 0.10	3.50 ± 0.05	8.00 ± 0.20	mm
0603	0.043 ± 0.004	0.075 ± 0.004	0.069 ± 0.004	0.138 ± 0.002	0.315 ± 0.008	inches
	1.10 ± 0.10	1.90 ± 0.10	1.75 ± 0.10	3.50 ± 0.05	8.00 ± 0.20	mm
0805	0.063 ± 0.004	0.094 ± 0.004	0.069 ± 0.004	0.138 ± 0.002	0.315 ± 0.008	inches
	1.60 ± 0.10	2.40 ± 0.10	1.75 ± 0.10	3.50 ± 0.05	8.00 ± 0.20	mm
1206	0.079 ± 0.004	0.142 ± 0.004	0.069 ± 0.004	0.138 ± 0.002	0.315 ± 0.008	inches
	2.00 ± 0.10	3.60 ± 0.10	1.75 ± 0.10	3.50 ± 0.05	8.00 ± 0.20	mm
Type / Code	P0	P1	P2	D0	T	Unit
0402	0.157 ± 0.004	0.079 ± 0.004	0.079 ± 0.002	0.061 ± 0.002	0.018 ± 0.004	inches
	4.00 ± 0.10	2.00 ± 0.10	2.00 ± 0.05	1.55 ± 0.05	0.45 ± 0.10	mm
0603	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	0.061 ± 0.002	0.025 ± 0.004	inches
	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	1.55 ± 0.05	0.64 ± 0.10	mm
0805	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	0.059 ± 0.002	0.038 ± 0.004	inches
	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	1.50 ± 0.05	0.97 ± 0.10	mm
1206	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	0.061 ± 0.002	0.038 ± 0.004	inches
	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	1.55 ± 0.05	0.97 ± 0.10	mm

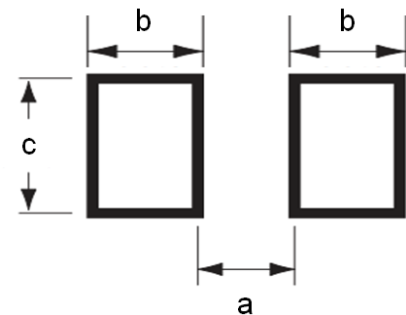
**Packaging Specifications – Embossed Plastic Tape**



Type / Code	A	B	E	F	W	Unit
2512	0.138 ± 0.004 3.50 ± 0.10	0.268 ± 0.004 6.80 ± 0.10	0.069 ± 0.004 1.75 ± 0.10	0.217 ± 0.002 5.50 ± 0.05	0.472 ± 0.008 12.00 ± 0.20	inches mm
	P0	P1	P2	D0	T	Unit
	0.157 ± 0.002 4.00 ± 0.05	0.157 ± 0.004 4.00 ± 0.10	0.079 ± 0.002 2.00 ± 0.05	0.059 ± 0.004 1.50 ± 0.10	0.039 ± 0.008 1.00 ± 0.20	inches mm

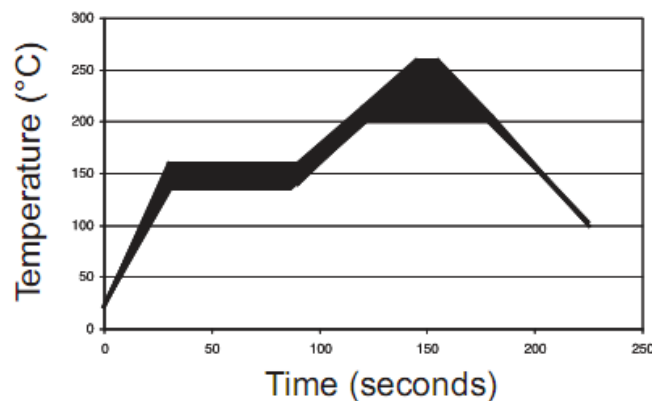
**Recommended Pad Layout**

Type / Code	a	b	c	Unit
0402	0.016 0.40	0.020 0.50	0.024 0.60	inches mm
	0603	0.035 0.90	0.028 0.70	0.039 1.00
0805		0.047 1.20	0.047 1.20	0.055 1.40
	1206	0.079 2.00	0.051 1.30	0.071 1.80
2512		0.150 3.80	0.083 2.10	0.134 3.40

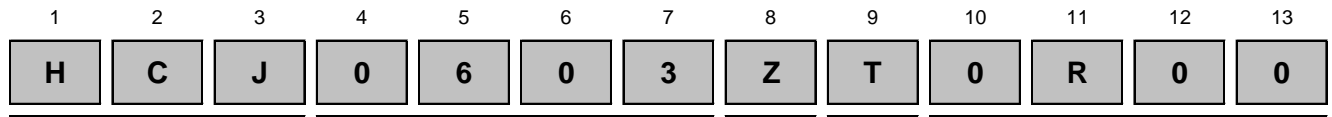


**Soldering Recommendations:**

- Peak reflow temperatures and durations
  - ✓ IR Reflow Peak = 260°C max for 10 seconds
  - ✓ Wave Solder = 260°C max for 10 seconds
- Compatible with lead and lead-free solder reflow processes
- Recommended IR reflow profile:



**How to Order**



Product Series	Size	Rating Current	Tolerance				Packaging				Resistance Value	
			Code	Tol	Size	Value (Ω)	Code	Description	Size	Quantity		
HCJ	0402	6.5A	Z	Zero Ohm	0402	<0.003	T	Paper Tape	0402	10,000	Four characters with the multiplier used as the decimal holder. 0 ohm = 0R00	
	0603	22.4A			0603	<0.0005			Embossed Plastic	0603, 0805, 1206		5,000
	0805	31.6A			0805					2512		4,000
	1206	38.7A			1206							
	2512	63.2A			2512							