PART NO. EKT3220-511H

1 Electrical Characteristics

1.1 Technical Data	Symbol	Value	Unit
Maximum allowable continuous AC voltage*1	VRMS	320.0	V
Maximum allowable continuous DC voltage	VDC	420.0	V
Varistor voltage Measured*2	VB	510(10%)	V
Typical capacitance value measured*3	C	105	pF
Typical capacitance value tolerance		±40	%
Maximum clamping voltage measured*4	VC	845	V
Rated peak single pulse transient current at *5	I P	1000	A
1.2 Reference Data	**Symbol**	**Value**	**Unit**
Maximum Energy Absorption 10/1000μs	E	16.0	J
Response time	T_{rise}	<2	ns
Leakage current at V_{DC} (At initial state)	I_L	<30	μA
Leakage current at V_{DC} (After reliability Test)	I_{LA}	<100	μA
Operating ambient temperature		-45~+125	℃
Reflow temperature profile(Recommend)		260	℃

1.3 Other Data

Body	ZnO
End termination	Ag/Ni/Sn
Packaging	Bulk/Tape
Complies with Standard	IEC61000-4-5

1.4 Notes:

*1 AC voltage at 50~60Hz	Measured at 1mA DC
*2 Varistor voltage	Measured at f=1MHz,Vrms=0.5V
*3 Capacitance	Measured at 10A by 8/20μs Pulse
*4 Maximum clamping voltage	Measured by 8/20μs Pulse
*5 Rated peak single pulse transient current	Measured at 1mA DC

1.5 Storage Condition

- As far as possible, the components should be employed within 24 months after delivery from Kangtai Semiconductor.
- They should be left in their original packing to avoid soldering problems due to oxidized contacts.
- Storage temperature: − 25 up to + 45°C.
- Relative humidity: < 75 % annual average, < 95 % on max. 30 days in a year.

2 Type Code Designation

EKT	3220	—	511	H
①	②		③	④

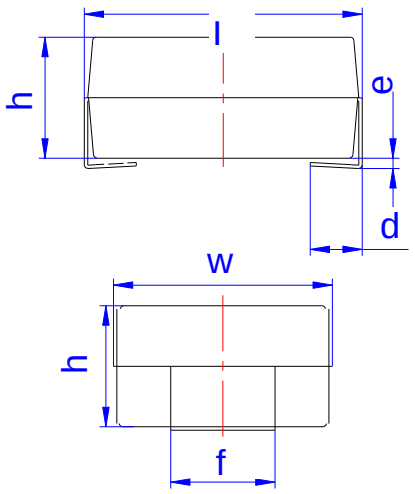
① EKT: Logo

② 3220 : Chip size –3220 (8.0 x 6.0 mm) size

③ 511 : Varistor voltage(Breakdown voltage) - 510Vdc

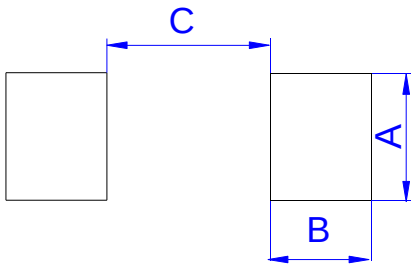
④ H : High absorption

3 Dimensional drawings



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
l	7.7		8.3	0.303		0.327
w	6.0		6.6	0.236		0.260
h	3.3		4.0	0.122		0.150
d	1.2		1.8	0.047		0.071
e	0		0.3	0		0.012
f	2.7		3.3	0.106		0.130

4 Recommended solder pad layout



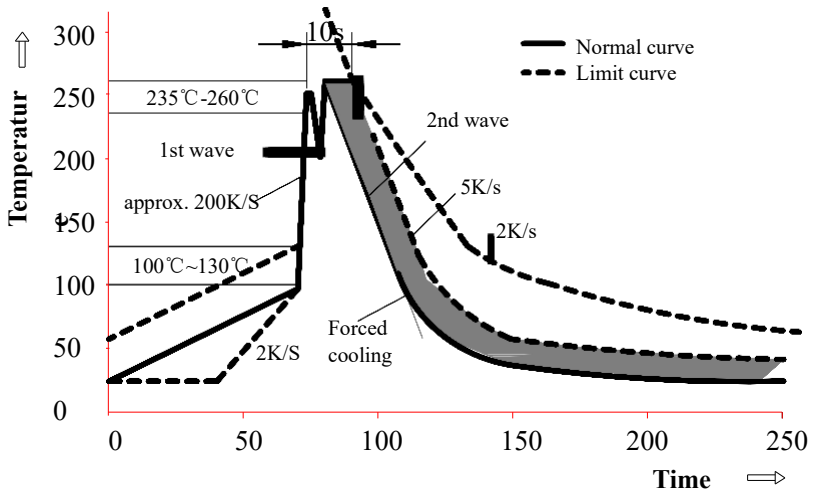
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A		3.5			0.138	
B		2.8			0.110	
C		4.5			0.177	

5 Soldering guidelines

The usage of mild, non-activated fluxes for soldering is recommended, as well as proper cleaning of the PCB.

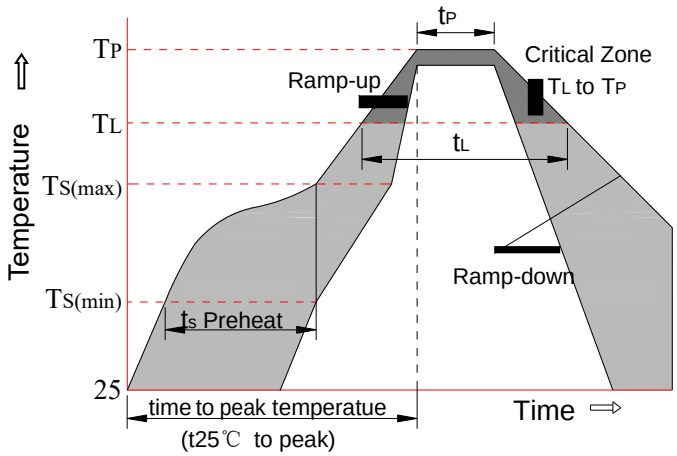
The components are suitable for reflow soldering per JEDEC J-STD-020C

5.1 Wave soldering



Temperature characteristics at component terminal with dual-wave soldering

5.2 Reflow soldering

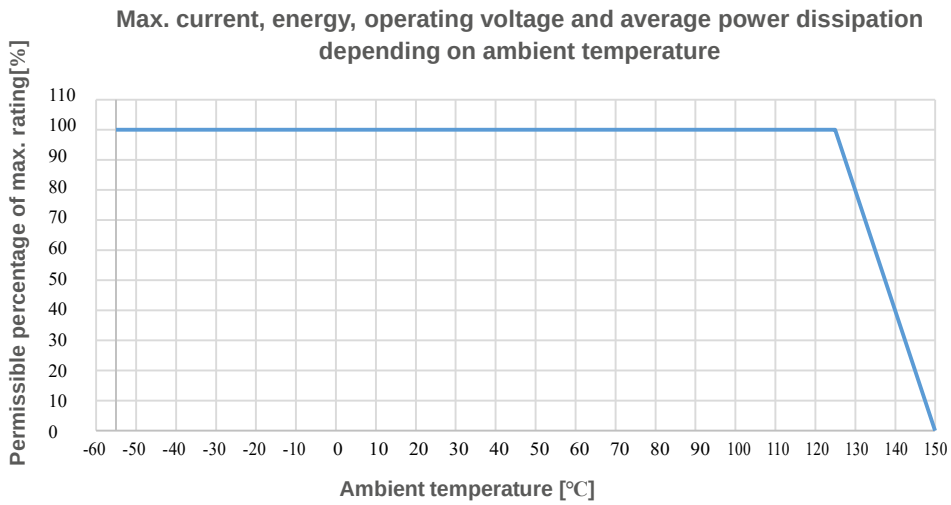


Profile feature		Sn-Pb assembly	Pb-Free assembly
Average ramp-up rate (T_{Smax} to T_p)		3℃/sec. Max	3℃/sec. Max
Preheat	-Temperature min. ($T_{s(min)}$)	+100℃	+150℃
	-Temperature max.($T_{s(max)}$)	+150℃	+200℃
	-Time (t_{Smin} to t_{Smax})	60-120 secs.	60-180 secs.
$T_{s(max)}$ to T_L - Ramp-up Rate		3℃/sec. Max	3℃/sec. Max
Time maintained above	-Temperature min. (T_L)	+183℃	+217℃
	-Time (t_L)	60-150 secs.	60-150 secs.
Peak classification temperature (T_p)		+220℃ to +240℃	+240℃ to +260℃
Time within 5℃of actual peak temperature (t_p)		10 secs. to 30 secs.	20 secs. to 40 secs.
Ramp-down rate		6℃/sec. max.	6℃/sec. max.
Time 25℃ to peak temperature		6 min. max.	8 min. max.

Notes: All temperature refer to topside of the package, measured on the package body surface

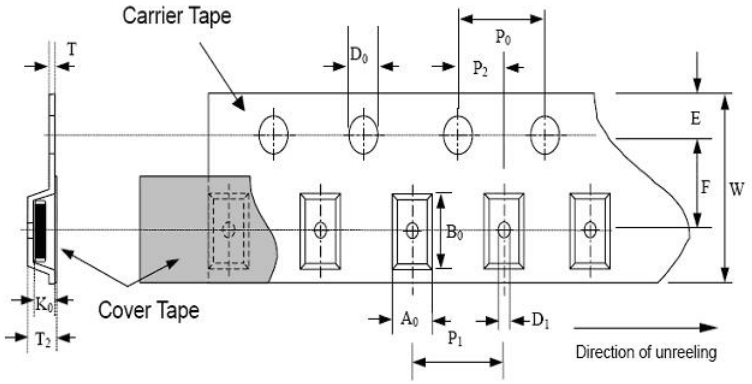
Maximum number of reflow cycles: 3

6 Temperature derating curve



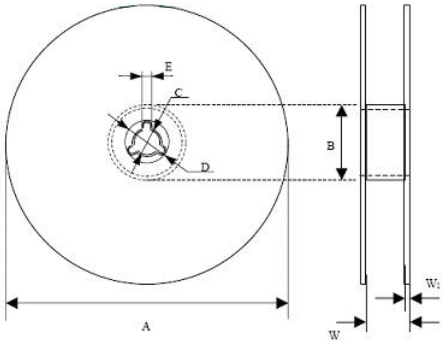
7 Taping and packaging Specification

7.1 Packaging Specification



type	A_0 ±0.20	B_0 ±0.20	K_0 ±0.10	T max	T_2 max	D_0 +0.05	D_1 ±0.05	P_1 ±0.10	P_2 ±0.05	P_0 ±0.1	W ±0.30	E ±0.10	F ±0.05
3220	7.0	8.7	2.80	5.50	5.20	1.55	1.55	12.00	2.00	4.00	16.00	1.75	7.50
4032													

7.2 reel dimension



type	A	B	C	D	E	W-W1	W_1
3220-4032	329.0±1.0	60.0±0.5	13.0±0.2	21.0±0.2	2.0±0.5	17.2±0.7	2.3±0.15

1) Quantity of taping packing(pcs): 1000