

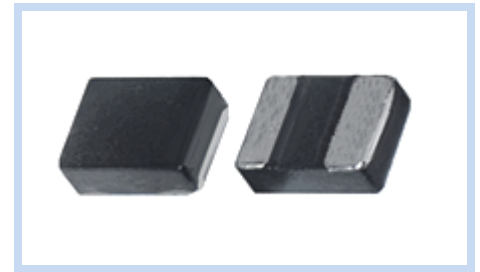
# SMD Power Inductor High Current Molded Type

SIM08-10AE series

MERITEK

## FEATURE

- High Saturation Current, Low DCR, High Efficiency
- Low Acoustic Noise and Shielded Construction Design
- High Resolution in EMC Protection
- Application: DC/DC Converters, Smart Phone, PAD, Power Supply



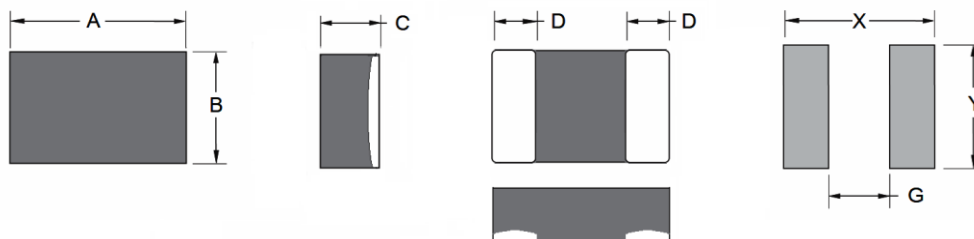
## ELECTRICAL CHARACTERISTICS

Part Number	Inductance (μH)	Tolerance (%)	I <sub>rms</sub> (A)		I <sub>sat</sub> (A)		DCR (mΩ)	
			Typ	Max	Typ	Max	Typ	Max
SIM08R10M10AE	0.10	±20%	9.0	8.0	9.2	8.2	6.8	8.2
SIM08R15M10AE	0.15	±20%	8.0	7.2	8.3	7.5	8.6	10.3
SIM08R22M10AE	0.22	±20%	7.2	6.6	7.7	7.0	12	15
SIM08R33M10AE	0.33	±20%	6.6	6.0	7.2	6.4	16	19
SIM08R47M10AE	0.47	±20%	5.8	5.1	6.0	5.4	20	24
SIM08R68M10AE	0.68	±20%	5.1	4.7	5.2	4.8	25	30
SIM081R0M10AE	1.00	±20%	4.3	4.0	4.6	3.8	42	50.4
SIM081R5M10AE	1.50	±20%	3.3	3.0	3.5	3.2	60	72
SIM082R2M10AE	2.20	±20%	2.8	2.5	3.0	2.7	85	102
SIM083R3M10AE	3.30	±20%	2.0	1.7	2.1	1.8	130	156
SIM084R7M10AE	4.70	±20%	1.7	1.5	1.8	1.6	180	216

Notes:

1. Test frequency: Ls:100KHz/1.0V.
2. Heat Rating Current (I<sub>rms</sub>) will cause the temperature rise approximately ΔT of 40°C.
3. Saturation Current (I<sub>sat</sub>) will cause L0 to drop approximately 30%.
4. Operating Temperature: -40 ~ +125°C (Including self-temperature rise)

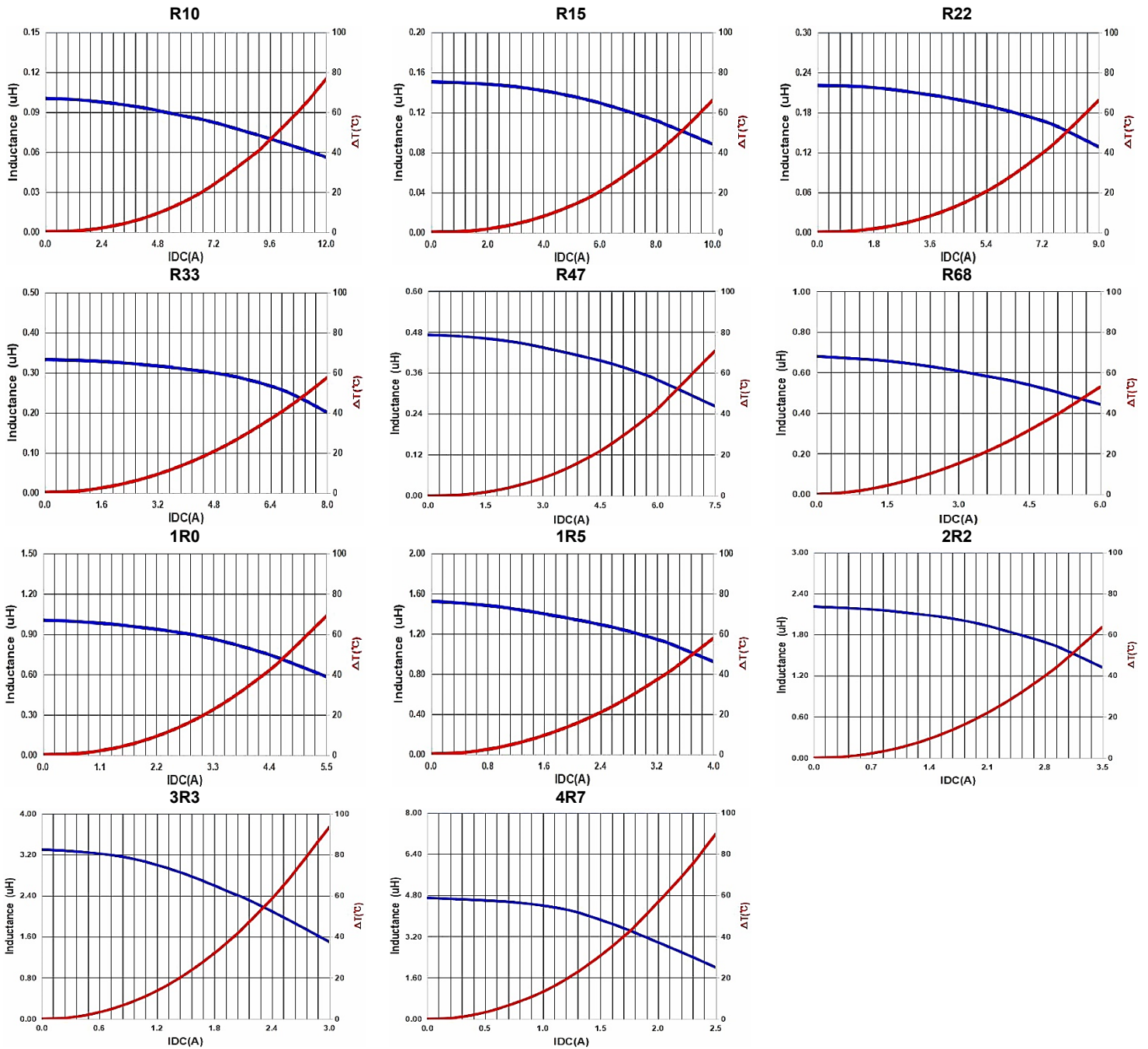
## DIMENSIONS



(Unit: mm)

Size Code	A	B	C	D	X	G	Y
1008 (08)	2.5±0.3	2.0±0.3	0.8±0.2	0.9±0.3	2.9 Ref	0.5 Ref	2.3 Ref

### CHARACTERISTIC CURVES – SIM08-10AE SERIES

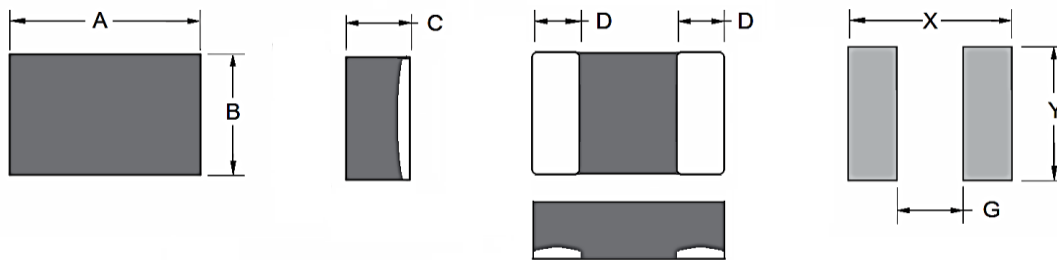


### PART NUMBERING SYSTEM

**SIM** **08** **2R2M** **10** **AE**  
 (1) (2) (3) (4) (5)

No	item	Code	Description
(1)	Product Code	SIM	SMD Power Inductor Series, High current Molded type
(2)	Size Code	08	1008: 2.5x2.0mm (W x L)
(3)	Nominal Inductance	2R2M	2.2μH ±20% (M) <span style="float:right">R denotes decimal point</span>
(4)	Thickness Code	10	10: 0.8±0.2mm <span style="float:right">12: 1.0±0.2mm, 20: 1.8±0.2mm</span>
(5)	Series Code	AE	High current molded series

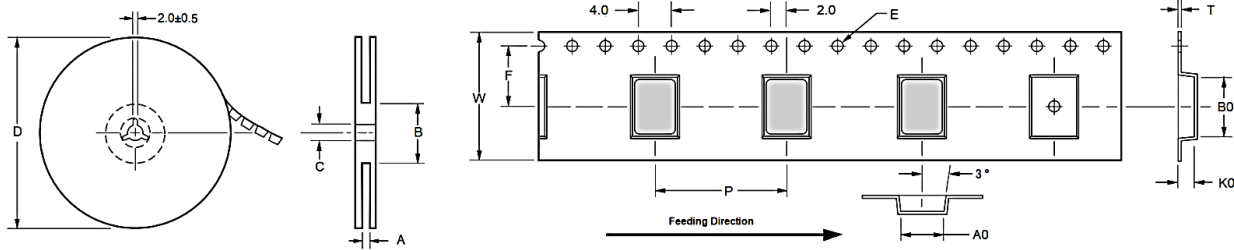
### DIMENSIONS – SIM-AE SERIES



(Unit: mm)

Series	Size	A	B	C	D	X	G	Y
SIM06-10AE	0806	2.0±0.3	1.6±0.3	0.8±0.2	0.7±0.3	2.5 Ref	0.5 Ref	1.9 Ref
SIM08-10AE	1008	2.5±0.3	2.0±0.3	0.8±0.2	0.9±0.3	2.9 Ref	0.5 Ref	2.3 Ref
SIM08-12AE	1008	2.5±0.3	2.0±0.3	1.0±0.2	0.9±0.3	2.9 Ref	0.5 Ref	2.3 Ref
SIM10-12AE	1210	3.2±0.3	2.5±0.3	1.0±0.2	1.1±0.3	3.7 Ref	0.7 Ref	2.8 Ref
SIM10-20AE	1210	3.2±0.3	2.5±0.3	1.8±0.2	1.1±0.3	3.7 Ref	0.7 Ref	2.8 Ref

### PACKAGING DIMENSION



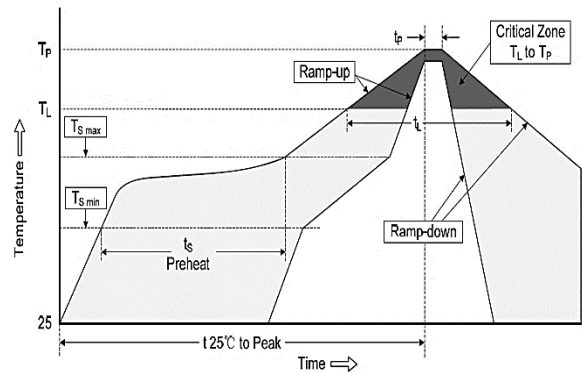
(Unit: mm)

Size Code	Reel Dimension				Tape Dimensions								Qty
	A ±1.0	B ±0.5	C ±0.5	D	W ±0.1	F ±0.01	P ±0.1	E ±0.1	A0 ±0.10	B0 ±0.1	K0 ±0.10	T ±0.05	7" Reel
0806	8.4	50	13.0	178.0	8.00	3.5	4.0	1.50	2.00	2.50	1.20	0.23	2000
1008	8.4	50	13.0	178.0	8.00	3.5	4.0	1.50	2.45	2.90	1.35	0.24	2000
1008	8.4	50	13.0	178.0	8.00	3.5	4.0	1.50	2.45	2.90	1.35	0.24	2000
1210	8.4	50	13.0	178.0	8.00	3.5	4.0	1.50	2.90	3.60	1.40	0.22	2000
1210	8.4	50	13.0	178.0	8.00	3.5	4.0	1.50	2.90	3.60	2.20	0.22	2000

### RECOMMENDED SOLDERING PROFILES

Reflow Condition		
Pre Heat	Temperature Min $T_{s(min)}$	150°C
	Temperature Max $T_{s(max)}$	200°C
	Time (min. to max.) ( $t_s$ )	60 ~120 seconds
Ramp up rate ( $T_L$ to $T_P$ )		3°C/second max
$T_{s(max)}$ to $T_L$ (Ramp-up rate)		3°C/second max
Reflow	Temperature ( $T_L$ )	217°C
	Time (min. to max.) ( $t_L$ )	60 ~150 seconds
Peak Temperature ( $T_P$ )		See table below
$t_p$ within 5°C of Peak Temperature ( $T_P$ )		30 seconds max
Ramp-down Rate		6°C/second max
Time 25°C to Peak Temperature		8 minutes max

Peak Temperature ( $T_P$ )			
Volume	< 350mm <sup>3</sup>	350-2000mm <sup>3</sup>	> 2000mm <sup>3</sup>
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.