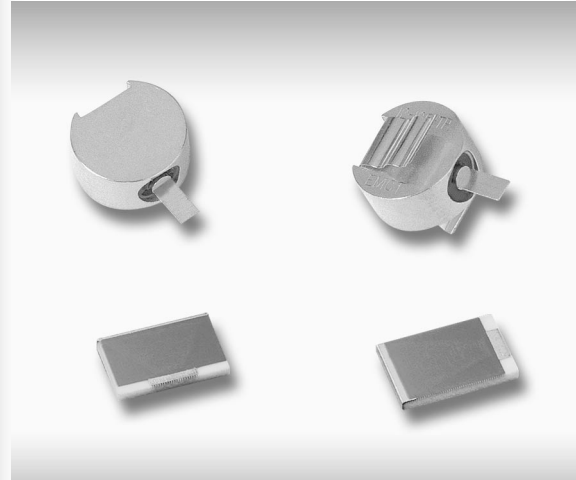


**Features**

- Nominal Impedance 50 or 100 Ohms
- Power Rating 5 to 250 Watts
- Frequency Range from DC to 26.5 GHz
- Substrates in BeO, AlN or Alumina
- Three Package Styles Available - Surface Mount, Chip, and Pill
- S-parameter Data Available
- Non-50 Ohm Resistance Values Available
- Conforms to Many Military Standards

**Applications**

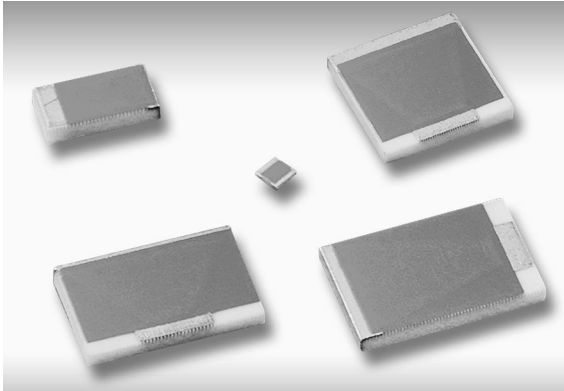
- Broadcast (TV and Radio)
- High Power Amplifiers
- High Power Filters
- Instrumentation
- Isolators
- Military
- Remote Termination
- Satellite Communication
- Splitters/Combiners
- Directional Couplers



EMC Technology is the world's premier manufacturer of surface mount, chip, and pill terminations. EMC invented the original pill termination (patent 3,354,412) and holds the patent for the asymmetrical surface mount termination (patent 5,739,743), allowing for improved power handling capabilities. EMC also offers small 0402 and 0505 size full ground plane terminations with alumina, AlN and BeO type substrates.

**Table of Contents**

Surface Mount .....	36
Chips – Standard .....	38
Chips – High Frequency .....	40
Chips – High Reliability .....	42
Pill Termination .....	44



Using EMC's patented asymmetrical wrap geometry (U.S. Patent # 5,739,743), the thermal dissipation of the surface mount terminations is improved by increasing the solderable terminal area. This eliminates the need for bolt down heat sinks and tabs, reducing assembly costs.

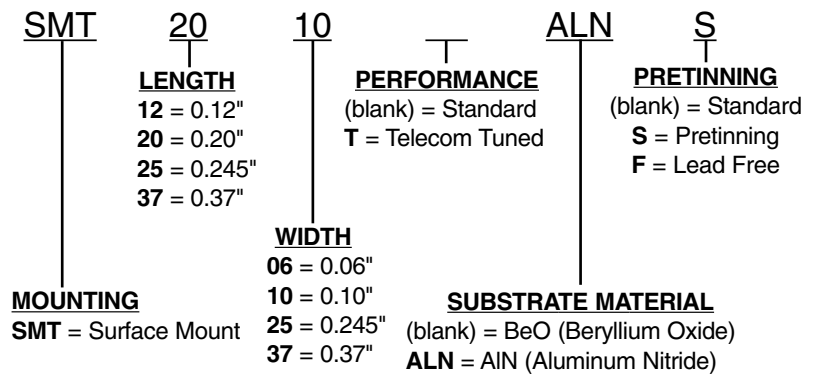
### General Specifications

Nominal Impedance .....50 Ohms ± 5%  
 Frequency Range ..... DC to 2.7 GHz  
 Power Rating .....10 to 150 Watts  
 Power Derating .....100% @ 100° C  
                                       Derates to 0% @ 150° C  
 Operating Temperature .....-55° C to 150° C

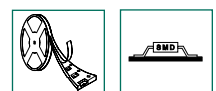
### Material Specifications

Substrates ..... BeO or AlN  
 Resistive Material ..... Thick Film  
 Termination Material ..... Thick Film,  
                                       Nickel Barrier, Solder Plated Finish

### Ordering Information



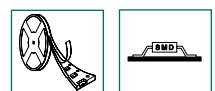
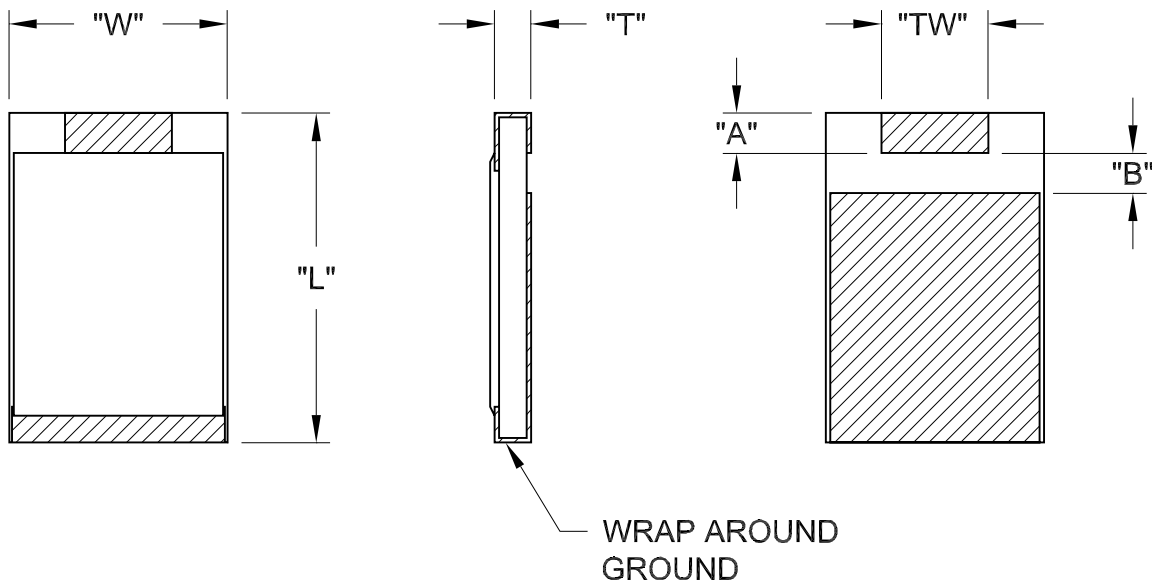
Note: Not every combination of size is available.  
 See selection table on page 37.  
 Other ohms values available upon request. Please contact factory.

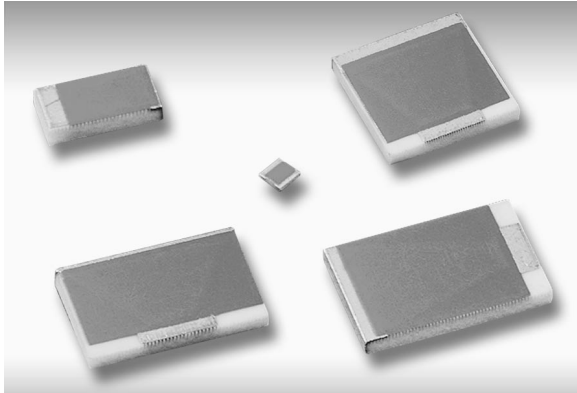


**Selection Table**

Power (W) Avg.	Substrate Type	Freq. (GHz)	Max. VSWR	Dimensions (inches)						Part Number
				L	W	T	TW	A	B	
10	AlN	2.0	1.25	0.120	0.060	0.026	0.054	0.025	0.025	SMT1206ALN
15	BeO	2.0	1.25	0.120	0.060	0.026	0.054	0.025	0.025	SMT1206
20	AlN	2.7	1.15	0.200	0.100	0.026	0.050	0.020	0.035	SMT2010TALN
20	AlN	2.0	1.25	0.200	0.100	0.041	0.090	0.020	0.035	SMT2010ALN
30	BeO	2.0	1.25	0.200	0.100	0.041	0.090	0.020	0.035	SMT2010
50	AlN	2.7	1.15	0.245	0.245	0.041	0.040	0.030	0.025	SMT2525TALN
60	AlN	2.0	1.25	0.245	0.245	0.041	0.120	0.030	0.025	SMT2525ALN
75	BeO	2.0	1.25	0.245	0.245	0.041	0.120	0.030	0.025	SMT2525
80	AlN	2.7	1.15	0.370	0.245	0.041	0.045	0.045	0.045	SMT3725TALN
80	AlN	2.0	1.25	0.370	0.245	0.041	0.120	0.045	0.045	SMT3725ALN
125	BeO	2.0	1.25	0.370	0.245	0.041	0.120	0.045	0.045	SMT3725
100	AlN	2.7	1.20	0.372	0.372	0.051	0.050	0.040	0.040	SMT3737TALN
100	AlN	2.0	1.35	0.372	0.372	0.051	0.175	0.040	0.040	SMT3737ALN
150	BeO	2.0	1.35	0.372	0.372	0.051	0.175	0.040	0.040	SMT3737

**Dimensions**





EMC's high power chip terminations are optimized for RF performance. All EMC chips are designed to minimize the variability of capacitive reactance. Localized hot spots associated with trimming have been eliminated. Reduced lot variation means your circuit performs so consistently that in most cases no tuning is required.

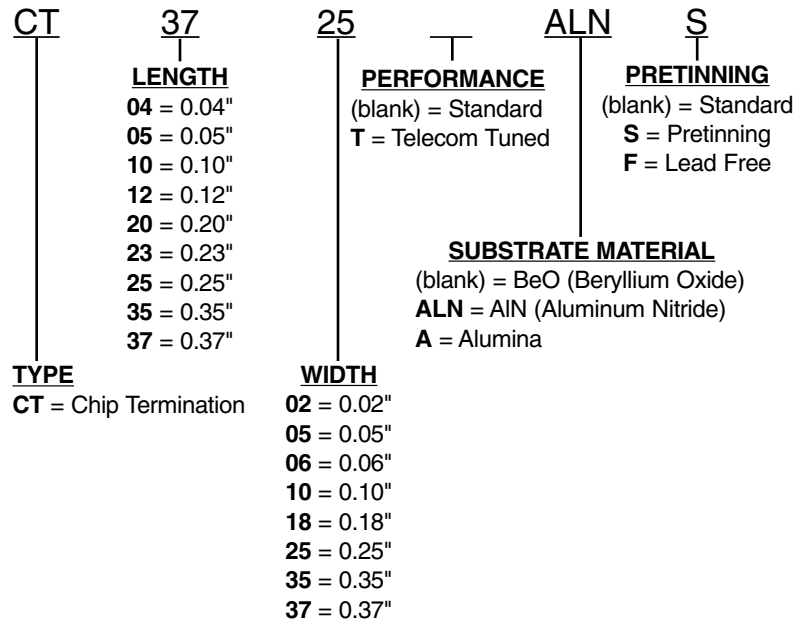
### General Specifications

Nominal Impedance . . . . . 50 Ohms  $\pm$  5%  
 Frequency Range . . . . . DC to 4 GHz  
 Power Rating . . . . . 2 to 250 Watts  
 Power Derating . . . . . 100% @ 100° C  
 Derates to 0% @ 125° C  
 Operating Temperature . . . . . -55° C to 150° C

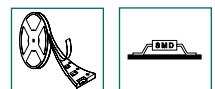
### Material Specifications

Substrates . . . . . BeO, AlN, or Alumina  
 Resistive Material . . . . . Thick or Thin Film  
 Termination Material . . . . . Thick Film, Nickel Barrier,  
 Solder Plated Finish

### Ordering Information



Note: Not every combination of size is available.  
 See selection table on page 39.  
 Other ohms values available upon request. Please contact factory.

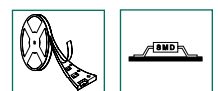
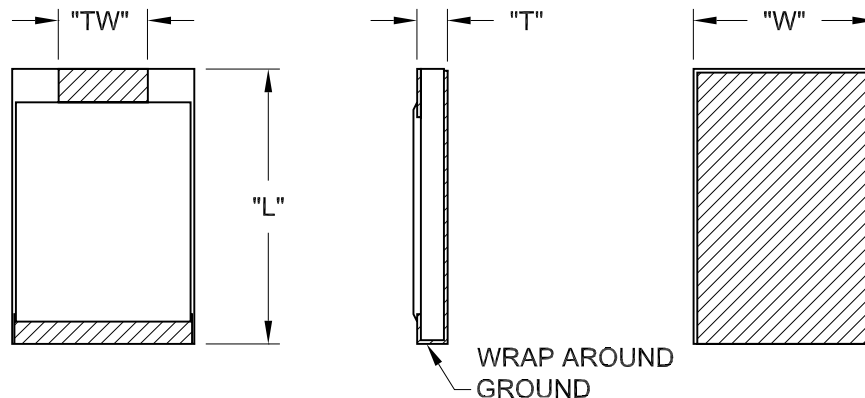


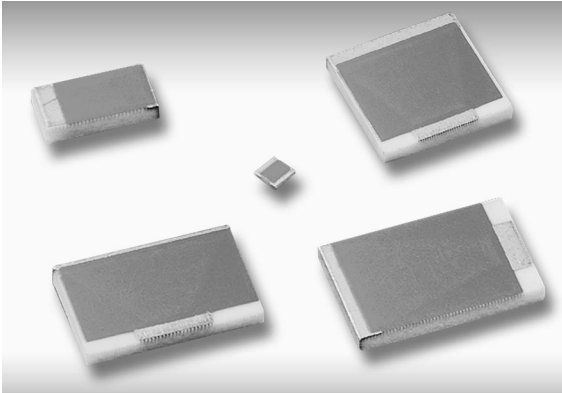
## Selection Table

Power (W) Avg.	Substrate Type	Frequency (GHz)	Max. VSWR	Dimensions In. (mm)				Part Number
				L	W	T	TW	
2	BeO	26.5	1.25	0.040 (1.02)	0.020 (0.51)	0.011 (0.28)	0.009 (0.23)	CT0402
5	Alumina	2	1.35	0.200 (5.08)	0.100 (2.54)	0.040 (1.02)	0.090 (2.28)	CT2010A*
5	AlN	4	1.25	0.200 (5.08)	0.100 (2.54)	0.040 (1.02)	0.090 (2.28)	CT0505ALN
10	BeO	4	1.25	0.050 (1.27)	0.050 (1.27)	0.011 (0.28)	0.050 (1.27)	CT0505
15	BeO	4	1.25	0.100 (2.54)	0.050 (1.27)	0.011 (0.28)	0.050 (1.27)	CT1005
15	AlN	4	1.10	0.100 (2.54)	0.050 (1.27)	0.011 (0.28)	0.050 (1.27)	CT1005TALN
15	BeO	4	1.25	0.120 (3.05)	0.060 (1.52)	0.026 (0.66)	0.054 (1.37)	CT1206
15	AlN	4	1.25	0.120 (3.05)	0.060 (1.52)	0.026 (0.66)	0.054 (1.37)	CT1206ALN
20	BeO	4	1.25	0.200 (5.08)	0.100 (2.54)	0.041 (1.04)	0.090 (2.28)	CT2010
20	AlN	4	1.25	0.200 (5.08)	0.100 (2.54)	0.041 (1.04)	0.090 (2.28)	CT2010ALN
20	Alumina	2	1.35	0.247 (6.27)	0.247 (6.27)	0.040 (1.02)	0.038 (0.97)	CT2525A*
40	AlN	4	1.35	0.247 (6.27)	0.247 (6.27)	0.041 (1.04)	0.125 (3.18)	CT2525ALN
50	BeO	4	1.35	0.247 (6.27)	0.247 (6.27)	0.041 (1.04)	0.125 (3.18)	CT2525
80	Alumina	2	1.35	0.350 (8.89)	0.180 (4.57)	0.025 (0.64)	0.060 (1.52)	CT3518A*
85	AlN	4	1.25	0.230 (5.84)	0.350 (8.89)	0.041 (1.04)	0.150 (3.81)	CT2335ALN
100	BeO	4	1.25	0.230 (5.84)	0.350 (8.89)	0.041 (1.04)	0.150 (3.81)	CT2335
120	BeO	2	1.10	0.350 (8.89)	0.230 (5.84)	0.040 (1.02)	0.045 (1.14)	CT3523T*
120	AlN	2	1.25	0.370 (9.40)	0.245 (6.22)	0.041 (1.04)	0.120 (3.05)	CT3725ALN
150	AlN	2	1.20	0.375 (9.52)	0.250 (6.35)	0.040 (1.02)	0.038 (0.97)	CT3725TALN*
150	BeO	2	1.25	0.370 (9.40)	0.245 (6.22)	0.041 (1.04)	0.120 (3.05)	CT3725
150	AlN	2	1.35	0.372 (9.45)	0.372 (9.45)	0.051 (1.30)	0.175 (4.45)	CT3737ALN
250	BeO	2	1.35	0.372 (9.45)	0.372 (9.45)	0.051 (1.30)	0.175 (4.45)	CT3737

\* Resistive material is thin film.

## Dimensions





*EMC Technology offers the SC series terminations with alumina substrates for low power applications. These chip terminations have a full wrap-around ground plane for improved power handling capability.*

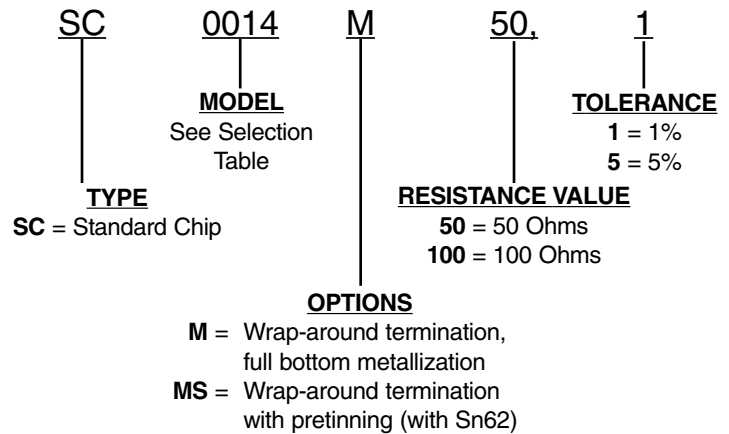
## General Specifications

Resistance Values . . . . 50 and 100 Ohms Standard  
 Frequency Range . . . . . DC to 18 GHz  
 Power Rating . . . . . .0.5 to 3 Watts  
 Power Derating . . . . . 100% @ 100° C  
    Derates to 0% @ 125° C  
 Operating Temperature . . . . . -55° C to 150° C

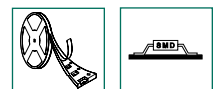
## Material Specifications

Substrate . . . . . Alumina  
 Resistive Material . . . . . Thick Film  
 Termination Material . . . . . Thick Film

## Ordering Information



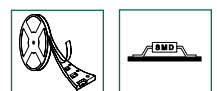
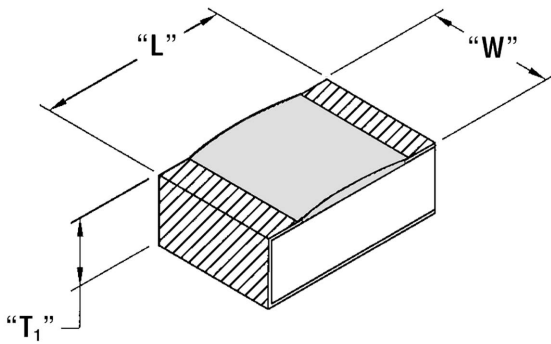
*Other ohms values available upon request. Please contact factory.*

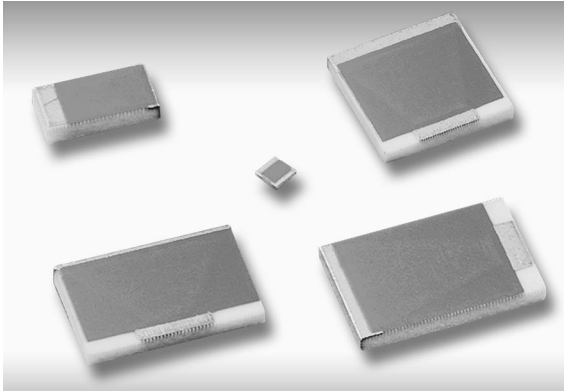


## Selection Table

Power (W)@		Tolerance	Available Options	Dimensions In. (mm)			Part Number*
125°C Ambient	100°C on Heat Sink			L	W	T <sub>1</sub>	
0.05	0.5	± 5%	M	0.075 (1.90)	0.025 (0.64)	0.021 (0.53)	SC1016M*
0.10	1	± 1%	M	0.100 (2.54)	0.050 (1.27)	0.021 (0.53)	SC0017M*
0.10	1	± 1%	M	0.150 (3.81)	0.075 (1.90)	0.013 (0.33)	SC0014M*
0.25	3	± 5%	M	0.250 (6.35)	0.100 (2.59)	0.122 (3.10)	SC0028M*

\* To complete the part number, see ordering information on page 40.





EMC Technology also offers the SC series chip termination with BeO (Beryllium Oxide) substrates for applications with critical reliability requirements.

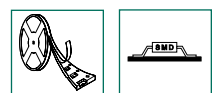
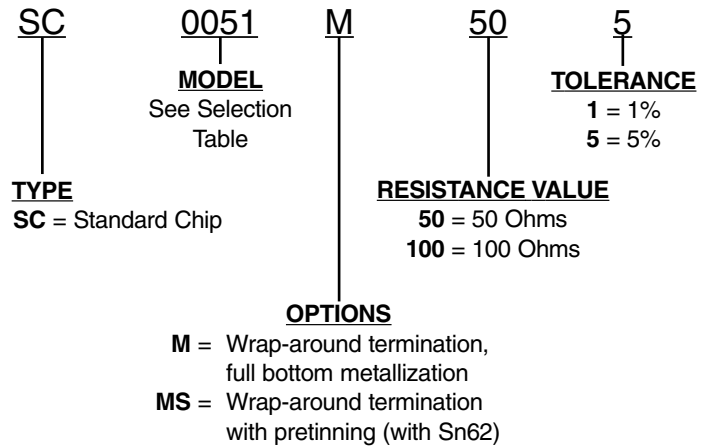
## General Specifications

- Resistance Values . . . . 50 and 100 Ohms Standard
- Tolerance . . . . . ± 1% or 5%
- Frequency Range . . . . . DC to 18 GHz
- Power Rating . . . . . 10 to 150 Watts
- Power Derating . . . . . 100% @ 100° C  
Derates 0% @ 125° C
- Operating Temperature . . . . . -55° C to 150° C

## Material Specifications

- Substrate . . . . . BeO
- Resistive Material . . . . . Thick Film
- Termination Material . . . . . Thick Film

## Ordering Information

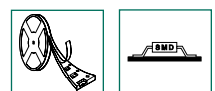
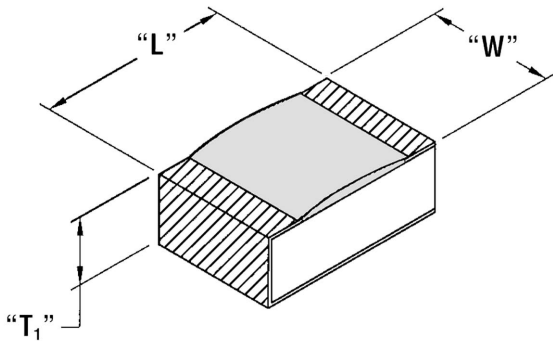


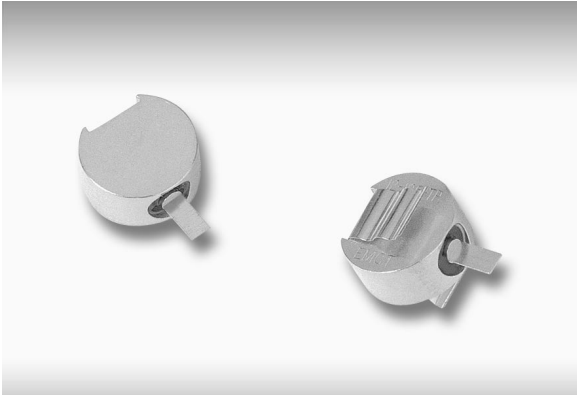


**Selection Table**

Power (W)@ 100°C on Heat Sink	Available Options	Dimensions In. (mm)			Part Number*	Cross Reference
		L	W	T <sub>1</sub>		
10	M	0.050 (1.27)	0.050 (1.27)	0.011 (0.28)	SC0066M*	CT0505
15	M	0.100 (2.54)	0.050 (1.27)	0.011 (0.28)	SC0067M*	CT1005
20	M	0.200 (5.08)	0.100 (2.54)	0.041 (1.04)	SC0065M*	CT2010
30	M	0.375 (9.53)	0.125 (3.18)	0.086 (2.18)	SC0051M*	N/A
30	M	0.247 (6.27)	0.247 (6.27)	0.041 (1.04)	SC0054M*	CT2525
30	M	0.250 (6.35)	0.250 (6.35)	0.061 (1.55)	SC0055M*	N/A
75	M	0.375 (9.53)	0.250 (6.35)	0.128 (3.25)	SC0057M*	N/A
75	M	0.375 (9.53)	0.375 (9.53)	0.051 (1.30)	SC0059M*	CT3737
100	M	0.350 (8.89)	0.230 (5.84)	0.041 (1.04)	SC0056M*	N/A
100	M	0.700 (17.78)	0.350 (8.89)	0.251 (6.38)	SC0062M*	N/A
150	M	0.370 (9.40)	0.245 (6.22)	0.041 (1.04)	SC0052M*	CT3725

\* To complete the part number, see ordering information on page 42.





EMC Pill Terminations, first patented in 1967 (patent 3,354,412), feature solderless construction. The resistive rod element is staked into the case forming a highly reliable compression fit. The result is a superior product which is unaffected by subsequent high temperature manufacturing processes. EMC offers a low cost pill termination, using a thin film chip design with a maximum VSWR of 1.065 from DC to 26 GHz.

**General Specifications**

- Impedance . . . . . 50 Ohms  $\pm$  5%
- Frequency Range . . . . .DC to 26.5 GHz
- VSWR . . . . .1.30 Max
- Power Rating . . . . .1 to 3 Watts
- Peak Power Rating . . . . . 100 Watts\*
- Power Derating . . . . .100% @ 125° C  
Derates to 0% @ 150° C
- Operating Temperature . . . . . -55° C to 150° C

**Material Specifications**

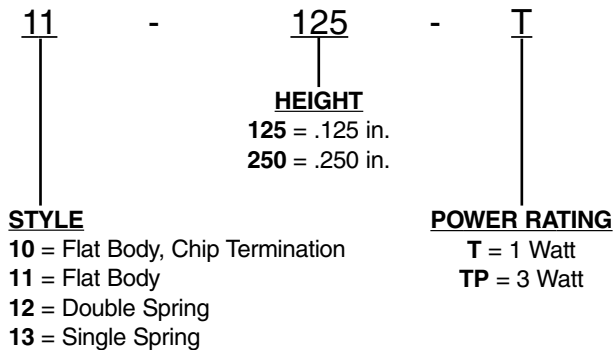
- Resistor Element . . . . . Thin Film
- Substrate . . . . . Alumina
- Body . . . . . Brass
- Tab . . . . . Beryllium Copper
- Spring . . . . . Beryllium Copper

Finish

- Body . . . . . Gold Plated
- Tab . . . . . Gold Plated
- Spring . . . . . Gold Plated

\* Peak Power is based on 100 microsecond pulse width and 0.1% duty cycle.

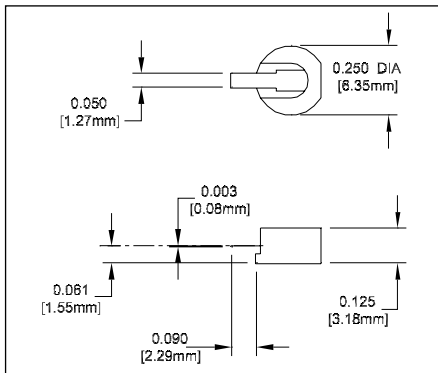
**Ordering Information**



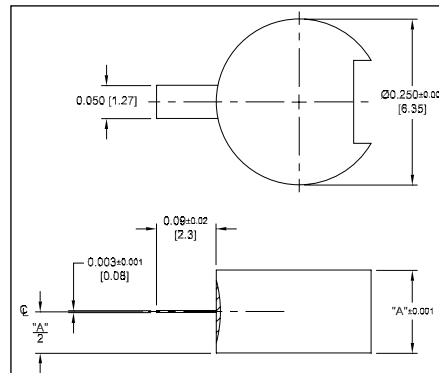
Power Rating (W) @ 25°C	Spring	Maximum Peak Power (W)	"A" Thickness In. (mm)	Part Number
1	None	10	0.125 (3.18)	10-125-T
1	None	100	0.125 (3.18)	11-125-T
1	None	100	0.250 (6.35)	11-250-T
1	Double	100	0.125 (3.18)	12-125-T
1	Double	100	0.250 (6.35)	12-250-T
1	Single	100	0.125 (3.18)	13-125-T
1	Single	100	0.250 (6.35)	13-250-T
3	None	100	0.125 (3.18)	11-125-TP
3	None	100	0.250 (6.35)	11-250-TP
3	Double	100	0.125 (3.18)	12-125-TP
3	Double	100	0.250 (6.35)	12-250-TP
3	Single	100	0.125 (3.18)	13-125-TP
3	Single	100	0.250 (6.35)	13-250-TP

\* Peak power based on 100ms pulse width and 0.1% duty cycle.

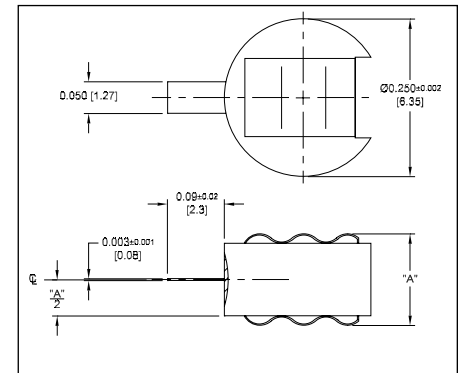
**Model  
10-125-TC  
Flat Body, Chip Termination**



**Models  
11-125-T, TP and 11-250-T, TP  
Flat Body (No Spring)**



**Models  
12-125-T, TP and 12-250-T, TP  
Double Spring**



**Models  
13-125-T, TP and 13-250-T, TP  
Single Spring**

