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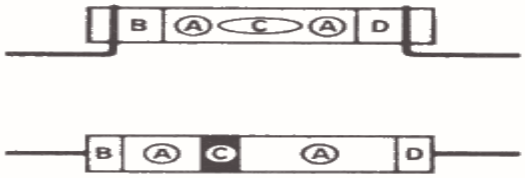
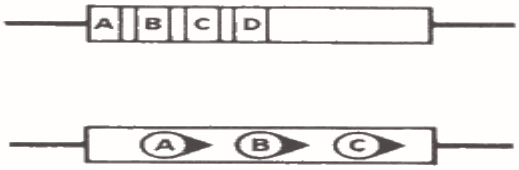
Resistor Color Code

EIA STANDARD RS-172



MILITARY STANDARD MIL-R-11E



Color	1st Digit A	2nd Digit B	Multiplier C	Tolerance D	Failure Rate* E
Black	0	0	1	---	---
Brown	1	1	10	± 1%	1.0
Red	2	2	100	± 2%	0.1
Orange	3	3	1,000	± 3%	0.01
Yellow	4	4	10,000	± 4%	0.001
Green	5	5	100,000	---	---
Blue	6	6	1,000,000	---	---
Violet	7	7	10,000,000	---	---
Gray	8	8	100,000,000	---	---
White	9	9	---	---	solderable*
Gold	---	---	0.1	± 5%	---
Silver	---	---	0.01	± 10%	---
No Color	---	---	---	± 20%	---

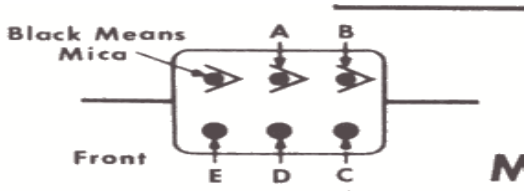
***Band E, when used on composition resistors, indicates percent failure per 1,000 hours. On film resistors, a white band E indicates solderable terminal.**

INSULATION CODING

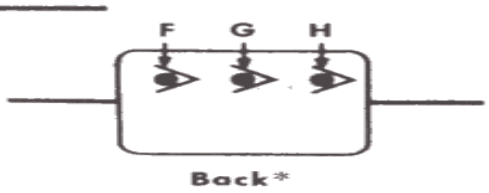
EIA: Insulated resistors with axial leads are designated by a background of any color except black. The usual color is natural tan. Noninsulated resistors with axial leads are designated by a black background color.

MILITARY (MIL):Same as EIA with the addition of: Noninsulated resistors with radial leads designated by a black background color or by a background the same color as the first significant figure of the resistance value.

Mica Capacitor Color



Code MILITARY STANDARD MIL-C-5C



Color	Digits of Capacitance (uuf) A	Digits of Capacitance (uuf) B	Multiplier C	Tolerance % D		Characteristic. See table below.	Working Volts DC F	Operating Temperature G	Vibration Grade (cps) H
Black	0	0	1	± 20		---	---	-55 to +70°C	10-55
Brown	1	1	10	± 1		B	---	---	---
Red	2	2	100	± 2		C	---	-55 to +85°C	---
Orange	3	3	1,000	---		D	300	---	---
Yellow	4	4	---	---		E	---	-55 to +125°C	10-2,000
Green	5	5	---	± 5		F	500	---	---
Blue	6	6	---	---		---	---	-55 to +150°C	---
Violet	7	7	---	---		---	---	---	---
Gray	8	8	---	---		---	---	---	---
White	9	9	---	---		---	---	---	---
Gold	---	---	0.1	± 5		---	---	---	---
Silver	---	---	---	± 10		---	---	---	---

***Earlier MIL-C-5 capacitors are not color coded on back. In such cases ignore F,G,H and use Voltage Rating Table below.**

DESCRIPTION OF CHARACTERISTIC

Characteristic	*Temperature Coefficient (parts per million per °C)*	*Maximum Capacitance Drift*	*Minimum Insulation Resistance (megohms)*
B	Not Specified	Not specified	7500
C	± 200	± 0.5%	7500
D	± 100	± 0.3%	7500
E	-20 to +100	± (0.1% +0.1 UUF)	7500
F	0 to +70	± (0.05% + 0.1 uuf)	7500

VOLTAGE RATING

(Indicated by dimensions rather than color coding)

Maximum Inches			*Style CM*	Capacitance (uuf)	Rating (vd-c)
Long	*Wide*	*Thick*			
35/64	5/16	7/32	15	5-510	300
51/64	15/32	7/32	20	5-510 560-1000	500
17/64	15/32	7/32	25	51-1000	500
53/64	53/64	9/32	30	560-3300	500
53/64	53/64	11/32	35	3600-6200 6800-10,000	500 300
1 1/32	41/64	11/32	40	3300-8200 9100-10000	500 300

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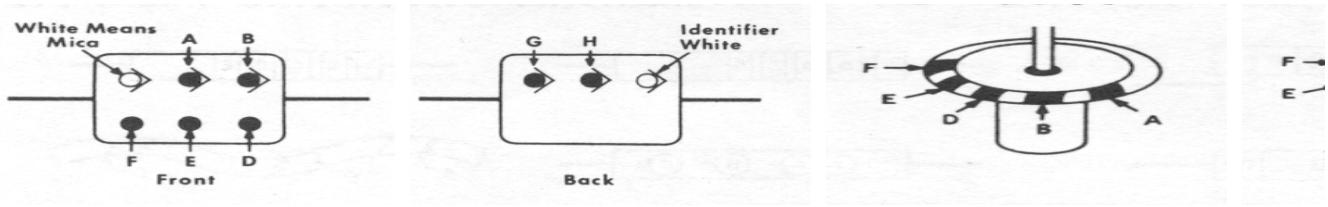
Mica Capacitor Color Code

EIA STANDARD RS-153 A



Color	Digits of Capacitance (uuf)			Multiplier D	Tolerance % E*	Characersitic--See table below F	Working Voltage G	Operating Temperature H
	A	B	C					
Black	0	0	0	1	± 20	A	---	---
Brown	1	1	1	10	± 1	B	100 V. DC	---
Red	2	2	2	100	± 2	C	---	-55 to +85 °C
Orange	3	3	3	1,000	± 3	D	300 V. DC	---
Yellow	4	4	4	10,000	---	E	---	-55 to +125 °C
Green	5	5	5	---	± 5%	---	500 V. DC	---
Blue	6	6	6	---	---	---	---	---
Violet	7	7	7	---	---	---	---	---
Gray	8	8	8	---	---	---	---	---
White	9	9	9	---	---	---	---	---
Gold	---	---	---	0.1	---	---	1,000 V. DC	---
Silver	---	---	---	0.01	± 10%	---	---	---

*or ± 1 uuf, whichever is greater.

DESCRIPTION OF CHARACTERISTIC

Charac-teristic	*Temperature Coefficient (parts per million per °C)*	*Maximum Capacitance Drift*	*Minimum Insulation Resistance (megohms)*

VOLTAGE RATING

(Indicated by dimensions rather than color coding)

Maximum Inches			*Style*	*Capacitance (uuf)*	*Rating (v d-c)*
Long	*Wide*	*Thick*			
51/64	15/32	7/32	20	5-510	500

A	±1000	±(5% +1uuF)	3000
B	±500	±(3% +1uuF)	6000
C	±200	±(0.5% +0.5uuF)	6000
D	±100	±(0.3% +0.1uuF)	6000
E	±-20 to +100	±(0.1% +0.1uuF)	6000
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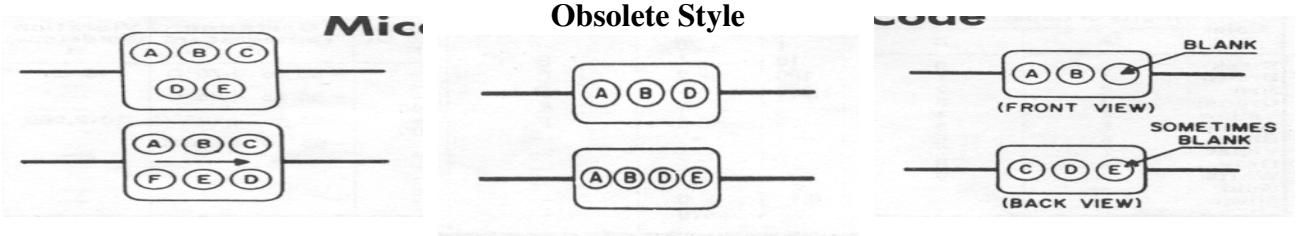
		--	

				560-1000	300
1 7/64	15/32	7/32	25	5-1000 1100-1500	500 300
53/64	53/64	9/32	30	470-6200 over 6200	500 300
53/64	53/64	3/8	35	3300-6200 over 6200	500 300
1 1/32	41/64	11/32	40	100-2400 2700-7500 over 7500	1000 500 300

Mica Capacitor Color Code

Obsolete Style



Dot Color	Digits of Capacitance (uuf)			Multi-plier D	Tolerance % E	Voltage Rating (v d-c) F
	A	B	C			

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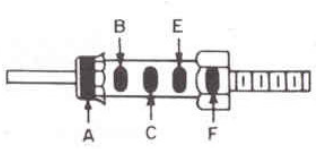
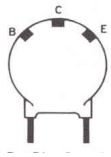
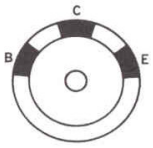
Ceramic Capacitor Color Code
EIA Standard RS-198
MILITARY STANDARD MIL-C-20D



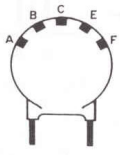
Stand-Off Capacitors (EIA ONLY)



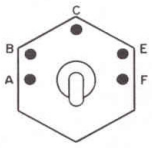
3-Dot Disc Capacitors (RETMA ONLY) (Voltage rating is always 500 V., tolerance is always --0.)



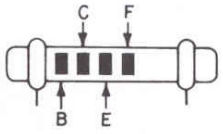
3-Dot Button Capacitors (EIA ONLY)



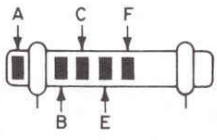
5-Dot Button Capacitors (EIA ONLY) (Voltage rating is always 500 V.)



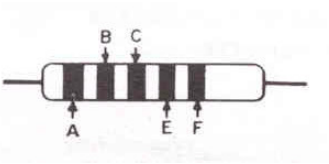
Feed Through Capacitors (EIA ONLY)



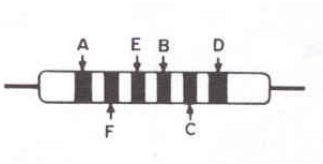
High Capacity Tubulars (Insulated or Non-Insulated)



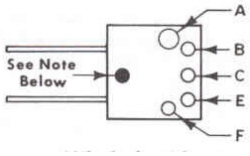
Temperature Compensating Tubulars



Tubular Capacitors (Voltage rating is always 500v.)



Tubular Capacitors (Old RMA)



MIL Style CC Rectangular

Note: Styles CC-60 through CC-71 will be color coded here with Green = 500 and Brown = 150, working volts DC.

Color	Digits of Capacitance (ì ì f)			Multiplier E	Tolerance F		Temp. Coef. A (Parts per million per °C.)	
					10 ì ì f or	Over 10		

	B	C	D		less (ì ì f)	ì ì f (%)	EIA	MILITARY†
Black	0	0	0	1	±2.0	±20	±0	±0
Brown	1	1	1	10	±0.1	±1	- 33	- 30
Red	2	2	2	100	±0.25	±2	- 75	- 80
Orange	3	3	3	1000	---	---	-150	-150
Yellow	4	4	4	10,000*	---	±5	-220	-220
Green	5	5	5	---	±0.5	---	-330	-330
Blue	6	6	6	---	---	---	-470	-470
Violet	7	7	7	---	---	---	-750	-750
Gray	8	8	8	0.01	±0.25	Gray	+150 to -1500	---
White	9	9	9	0.1	±1.0	±10	+100 to -750	---
Gold	---	---	---	---	---	---	---	+100

*EIA only †Per charts in MIL-C-20D

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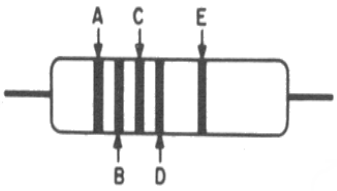
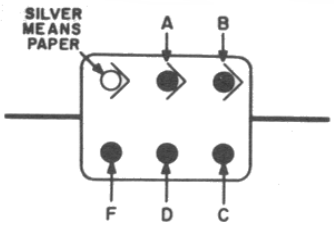
Paper Capacitor Color Code

MILITARY STANDARD MIL-C-91A
(Commercial codes are same except as noted)



Tubular Capacitors
(Commercial Only)



Rectangular Capacitors

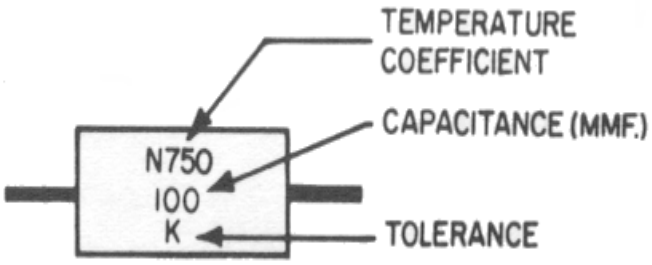
Color	Digits of Capacitance (*uuf*)		Multiplier C	Tolerance % D	Tubular Voltage Rating (v d-d) E	Temp. Rating °C and Characteristic F
	B	C				
Black	0	0	1	±20	---	85-A
Brown	1	1	10	---	100	85-E
Red	2	2	100	---	200	---
Orange	3	3	1,000	±30	300	---
Yellow	4	4	10,000	---	400	---
Green	5	5	---	---	500	---
Blue	6	6	---	---	600	---
Violet	7	7	---	---	700	---
Gray	8	8	---	---	800	---
White	9	9	---	---	900	---
Gold	---	---	---	---	1,000	---
Silver	---	---	---	±10	---	---

VOLTAGE RATING FOR RECTANGULAR CAPACITORS
(Indicated by dimension rather than color coding)

Maximum Dimensions (inches)			*Style CN*	*Capacitance (uuf)*	*Voltage Rating (v d-c)*
Length	*Width*	*Thick-ness*			
51/64	15/32	7/32	20	1000 2000-6000 10,000	400 200 120

TYPOGRAPHICALLY MARKED TUBULAR CERAMICS

57/64	37/64	17/64	22	2000-3000 6000-10,000 20,000	400 300 120
53/64	53/64	9/32	30	1000-2000 3000 6000-10,000 20,000	800 600 400 120
53/64	53/64	11/32	35	3000 6000-10,000 20,000	800 600 300
1 1/4	41/64	9/32	41	3000-6000 10,000 20,000 30,000	600 400 300 120
1 15/32	49/64	11/32	42	1000-6000 10,000- 20,000 30,000 50,000 100,000	1000 600 400 300 120
1 15/32	49/64	13/32	43	10,000 20,000- 30,000 50,000- 100,000 200,000	1000 600 400 120



JAN LETTER	*TOLERANCE*	
	10 uuf or Less	*Over 10 uuf*
C	± 0.25 *uuf*	.....
D	± 0.5 *uuf*	.....
F	± 1.0 *uuf*	± 1 %
G	± 2.0 *uuf*	± 2 %
J	.....	± 5 %
K	.....	± 10 %
M	.....	± 20 %

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EIA Color Codes

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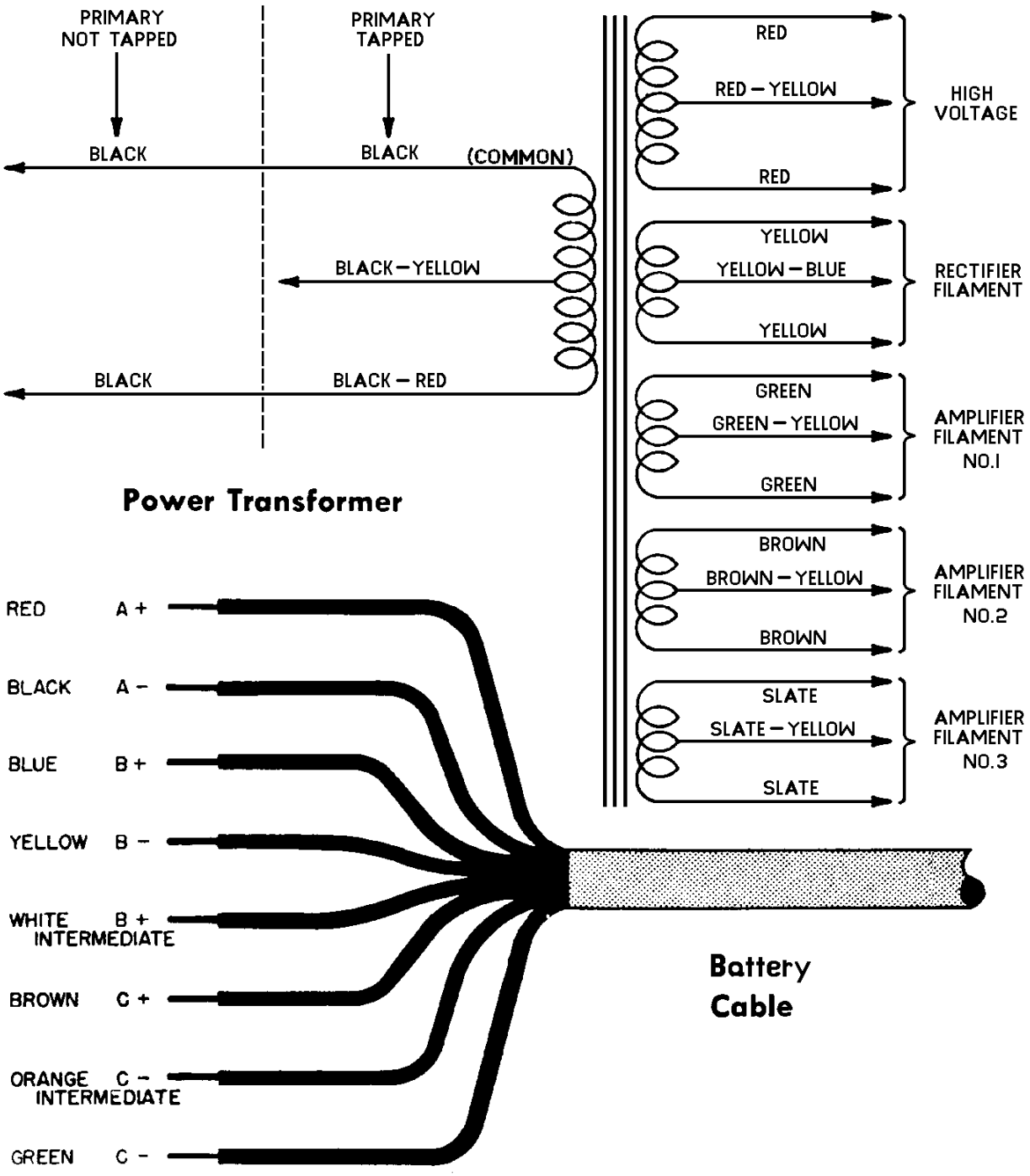
The color codes on the preceding and two following pages are used by most radio and instrument manufacturers in the wiring of their products, and by parts manufacturers for identifying lead placement or resistor and capacitor values, ratings, and tolerances. These have been included for whatever help they may provide in identifying parts and leads when trouble-shooting. Since all manufacturers do not use these codes, however, due caution must be observed to determine whether or not the set, instrument, or part under examination does or does not follow the code colors given here. A quick check with a voltmeter, ohmmeter, or continuity meter is usually all that is needed to establish this fact.



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