

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY NOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS, OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONFIRMING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

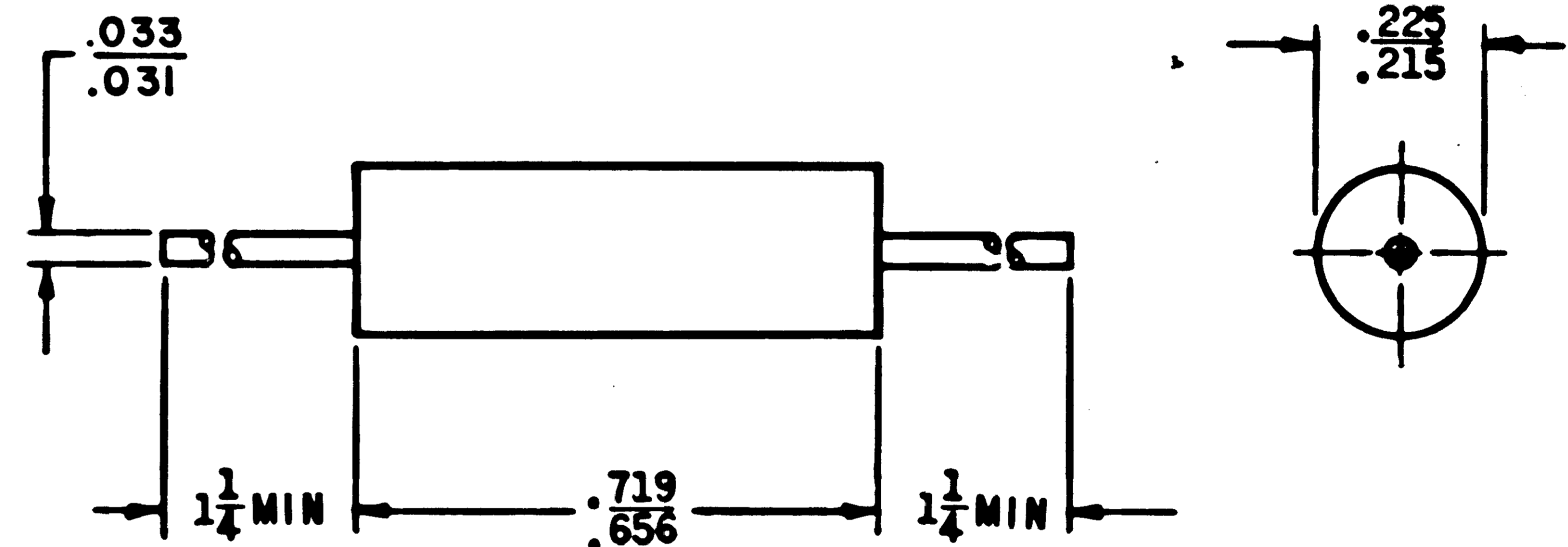
K 68E0101

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
E	REPLACES REV D WITH CHANGES AND UPGRADED TO CLASS A RELEASE PER TDRR 02091	7/17/63	WJL
F	REVISED PER TDRR 03387	7/23/63	WJL
G	REVISED PER TDRR 13952	11-17-64	WJL
H	REVISED PER TDRR 16596	2/24/65	WJL
J	REVISED PER TDRR 24189	11/30/65	WJL
K	REVISED PER TDRR 24272	11/30/65	WJL

REQUIREMENTS:

1. GENERAL:
 - A. UNITS SHALL BE CAPABLE OF MEETING THE REQUIREMENTS OF SPECIFICATION MIL-R-26, CHARACTERISTIC G, FOR INSULATED TYPES; EXCEPT AS MODIFIED HEREIN.
 - B. SUPPLIER SHALL CONFORM TO THE QUALITY ASSURANCE PROVISIONS SPECIFIED IN ND 1015404, CLASS 2.
 - C. INTERPRET DRAWING SYMBOLS, ABBREVIATIONS AND REFERENCE DESIGNATIONS IN ACCORDANCE WITH GOVERNMENT STANDARDS PRESCRIBED IN MIL-D-70327.
 - D. PACKAGING: UNITS SHALL BE PACKAGED PER MIL-R-26, LEVEL A.
2. INSPECTION AND ACCEPTANCE:
 - A. ELECTRICAL REQUIREMENTS:
 - (1) RESISTANCE: PER TABLE
 - (2) RESISTANCE TOLERANCE: $\pm 1\%$
 - B. MECHANICAL REQUIREMENTS:
 - (1) LEADS: NICKEL ALLOY PER ND PS 1015400. A CERTIFICATE OF COMPLIANCE TO THIS REQUIREMENT SHALL ACCOMPANY EACH SHIPMENT.
 - (2) MARKING: MARK UNITS PER ND 1002019 WITH THE NASA PART NUMBER AND REVISION LETTER AND THE MANUFACTURER'S NAME AND/OR SYMBOL, RESISTANCE VALUE, TOLERANCE AND POWER RATING. THE MANUFACTURER'S PART NUMBER MAY APPEAR ON THE PART OR PACKAGE. MARKING OF UNIT PACKAGES AND EXTERIOR SHIPPING CONTAINERS SHALL INCLUDE NASA PART NUMBER AND REVISION LETTER PER MIL-STD-129
3. DESIGN REQUIREMENTS:
 - A. PER MIL-R-26 MODIFIED PER THIS DRAWING.
 - B. POWER RATING: 3 WATTS @ 25°C DERATED TO ZERO AT 275°C.
 - C. TEMPERATURE COEFFICIENT:
 - (1) 50 Ω AND ABOVE = ± 20 PPM/°C (3) 1 Ω AND BELOW = ± 100 PPM/°C
 - (2) 1 Ω THRU 50 = ± 40 PPM/°C
 - D. MAXIMUM RATED CONTINUOUS WORKING VOLTAGE: $E = \sqrt{PR}$ OR 100 VOLTS MAX.
 - E. RESISTANCE ELEMENT: RESISTANCE WIRE USED SHALL HAVE A MINIMUM DIAMETER OF 0.001 INCH. (SEE NOTES FOR EXCEPTIONS)
 - F. DIELECTRIC STRENGTH: 1000 VOLTS AC RMS, 60 CYCLE.
 - G. HOUSING: METAL TUBING.
 - H. EACH LEAD SHALL BE CAPABLE OF WITHSTANDING TWO (2) BENDS UNDER A TWO (2) POUND VERTICAL PULL (LEAD VERTICAL WITH RESPECT TO UNIT BODY). TWO (2) BENDS SHALL BE ACCOMPLISHED BY MOVING THE BODY OF THE UNIT, WHILE IN THE SAME PLANE, THROUGH 90° IN ONE DIRECTION, THEN BACK 180° TO THE OPPOSITE DIRECTION, THEN BACK 90° TO THE ORIGINAL POSITION. NO MECHANICAL DAMAGE OR LACK OF PERFORMANCE SHALL BE EVIDENCED AFTER THE TEST.
4. SPECIAL CONDITIONING BY SUPPLIER:
 - A. BURN-IN TEST: THE MANUFACTURER SHALL BURN-IN ALL RESISTORS FOR 100 HOURS AT +25°C AT 3 WATTS @ COMMERCIAL LINE FREQUENCY 1-1/2 HRS ON AND 1/2 HR. OFF. UNITS CHANGING RESISTANCE MORE THAN 0.5% OR EXCEEDING THE INITIAL PURCHASE TOLERANCE SHALL BE REJECTED.

PROCURE ONLY FROM APPROVED SOURCES LISTED ON ND 1002034 FOR THIS DRAWING.



ⓔ REPLACES REV(D) WITH CHANGES

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE, MASS		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN: <i>[Signature]</i> DATE: 6-9-63		RESISTOR, FIXED, WIREWOUND SPECIFICATION CONTROL DRAWING	
CHECKED: <i>[Signature]</i> 12 JUNE 63			
APPROVAL: <i>[Signature]</i> 7/17/63		NASA DRAWING NO. 1010389	
HEAT TREATMENT: NONE		CODE IDENT NO. 80230	SIZE C
FINAL FINISH: NONE		SCALE: NONE	WT
APPLICATION		SHEET 1 OF 2	

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68E0101

REVISIONS			
SYM	DESCRIPTION	DATE	APPROVAL
E	REPLACES REV D WITH CHANGES AND UPGRADED TO CLASS A RELEASE PER TDRR 02291	7/7/63	WJ
F	REVISED PER TDRR 03387	7/2/63	WJ
G	REVISED PER TDRR 13952	11-12-63	WJ
H	REVISED PER TDRR 16596	2/24/65	WJ
J	REVISED PER TDRR 24189	11/20/65	WJ
K	REVISED PER TDRR 24272	11/20/65	WJ

BASIC RESISTANCE OHMS	MULTIPLIER				
	10 ⁻¹	1	10	10 ²	10 ³
	NASA DASH NO. SEE NOTE 1				
10		8	32	56	80
11		9	33	57	81
12		10	34	58	82
13		11	35	59	83
15		12	36	60	84
16		13	37	61	85
18		14	38	62	86
20		15	39	63	87
22		16	40	64	88
24		17	41	65	89
27		18	42	66	90
30		19	43	67	91
33		20	44	68	
36		21	45	69	
39		22	46	70	
43		23	47	71	
47		24	48	72	
51	1	25	49	73	
56	2	26	50	74	
62	3	27	51	75	
68	4	28	52	76	
75	5	29	53	77	
82	6	30	54	78	
91	7	31	55	79	

NON-STANDARD VALUES	
DASH NUMBER	RESISTANCE OHMS
-94	1
-95	2600
-96	2800
-97	4100
-98	4500
-99	5300
-100	5800
-101	6100
-102	6300
-103	6600
-104	6900
-105	7200
-106	7000
-107	2300
-108	3100
-109	3500
-110	4900
-111	7800
-112	2
-113	3
-114	4
-115	.67
-116	6.7

COMPLETE PART NUMBER IS THE DRAWING NUMBER PLUS THE APPLICABLE DASH NUMBER.

NON-STANDARD VALUES	
DASH NUMBER	RESISTANCE OHMS
-92	43
-93	600

NOTES:
1. UNITS 68 THRU 91, 97 THRU 106, AND 109 THRU 111 NOT AVAILABLE USING .001 MIN. DIA. WIRE.

REPLACES REV(D) WITH CHANGES

QTY REQD	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS			
MIT INSTRUMENTATION LAB CAMBRIDGE MASS		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
DRAWN BY <i>[Signature]</i> DATE 63		RESISTOR, FIXED, WIREWOUND	
CHECKED BY <i>[Signature]</i> 12 JUNE 63			
APPROVAL <i>[Signature]</i> 7/17/63		SPECIFICATION CONTROL DRAWING	
MATERIAL SEE NOTES		NASA APPROVAL <i>[Signature]</i> 7/17/63	
HEAT TREATMENT NONE		CODE IDENT NO. 80230	SIZE C
FINAL FINISH NONE		NASA DRAWING NO. 1010389	
MIT APPROVAL <i>[Signature]</i> 7/17/63		SCALE NONE	WT
APPLICATION		SHEET 2 OF 2	

RESISTOR