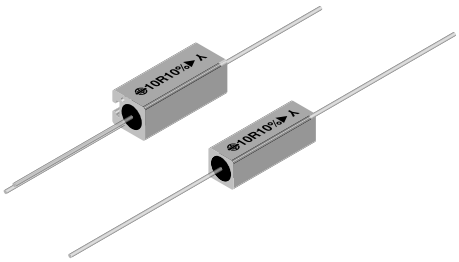
Wirewound Resistors in Ceramic Case



FEATURES

- Fiberglass core, ceramic case
- Fireproof inorganic construction
- Axial or radial leaded
- Fusing styles available as style KKE.. Si
- Pure tin plating provides compatibility with lead (Pb)-free and lead containing soldering processes
- Compatible with "Restriction of the use of Hazardous Substances" (RoHS) directive 2002/95/EC (issue 2004)

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	HISTORICAL MODEL	POWER RATING $P_{40\,°C}$ W	LIMITING VOLTAGE V	RESISTANCE RANGE E12/E24			
				TOLERANCE ± 10 %	TOLERANCE ± 10 %, ± 5 %		
				TCR + 400 ± 50 ppm/K	TCR + 400 ± 50 ppm/K	TCR + 0 ± 40 ppm/K	TCR + 0 ± 10 ppm/K
KKA040	KKA4	4	125	R056 - R091	R10 - R20	R22 - 300R	330R - 9K1
KKA050	KKA5	5	185	R075 - R12	R15 - R30	R33 - 470R	510R - 15K
KKA070	KKA7	7	250	R11 - R30	R33 - R68	R75 - 910R	1K0 - 33K
KKA090	KKA9	9	250	R11 - R30	R33 - R68	R75 - 910R	1K0 - 33K
KKA110	KKA11	11	350	R15 - R47	R51 - 1R0	1R1 - 1K3	1K5 - 47K
KKA170	KKA17	17	500	R27 - R82	R91 - 1R6	1R8 - 2K4	2K7 - 82K
KKE040	KKE4	4	125	R056 - R091	R10 - R20	R22 - 300R	330R - 9K1
KKE070	KKE7	7	250	R075 - R12	R15 - R30	R33 - 470R	510R - 15K
KKE090	KKE9	9	250	R11 - R30	R33 - R68	R75 - 910R	1K0 - 33K
KKE110	KKE11	11	350	R15 - R47	R51 - 1R0	1R1 - 1K3	1K5 - 47K
KKE170	KKE17	17	500	R27 - R82	R91 - 1R6	1R8 - 2K4	2K7 - 82K
KKE07L	KKE7 Si	4	165	R075 - R13		R15 - 12K	Only ± 5 %
KKE09L	KKE9 Si	5.5	250	R11 - R30		R33 - 33K	Only ± 5 %
KKE11L	KKE11 Si	7	350	R28 - R47		R51 - 47K	Only ± 5 %
KKE17L	KKE17 Si	10	500	R27 - R82		R91 - 82K	Only ± 5 %

GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: KKA040B1009KG1000 (preferred part number format)

K	K	A	0	4	0	B	1	0	0	9	K	G	1	0	0	0

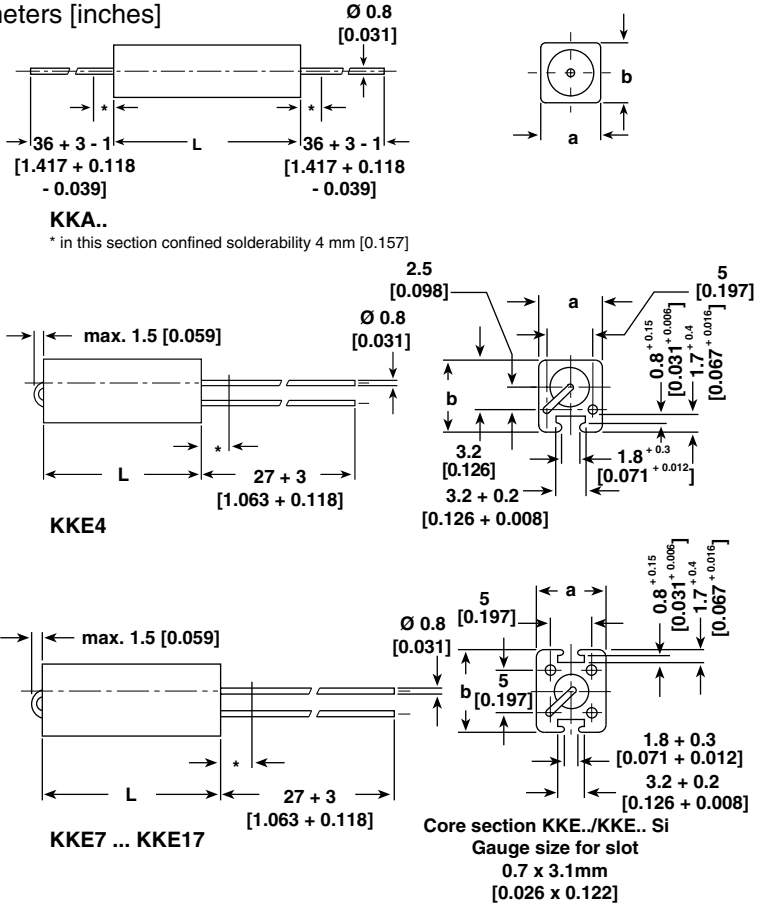
MODEL	SIZE	SPECIAL CHARACTER	TCR/MATERIAL	VALUE	TOLERANCE	PACKAGING	SPECIAL
KKA **KKE**	**04** = 4 **05** = 5 **07** = 7 **09** = 9 **11** = 11 **17** = 17	**0** = Neutral **L** = SI	**0** = SWI per BV **A** = 400 ± 50 ppm/K **B** = 0 + 40 - 80 pm/K **C** = 0 ± 10 ppm/K **D** = + 200... + 1200 ppm/K	**3 digit value** **1 digit multiplier** MULTIPLIER **F** = $*10^{-4}$ **7** = $*10^{-3}$ **8** = $*10^{-2}$ **9** = $*10^{-1}$ **0** = $*10^{0}$ **1** = $*10^{1}$ **2** = $*10^{2}$	**J** = ± 5.0 % **K** = ± 10.0 %	(See Packaging table)	The 5 digit BV number will be encoded using a 36 character code. This code contains numbers 0...9 and letters A...Z (36 characters total) and allows to encode at least 46 655 five digit BV numbers. **000** = Standard

Historical Part Number Example: KKA4 10R 10 % 0 + 40 - 80 R1 (will continue to be accepted)

KKA4	10R	10 %	0 + 40 - 80	R1
HISTORICAL MODEL	VALUE	TOLERANCE	TCR/MATERIAL	PACKAGING

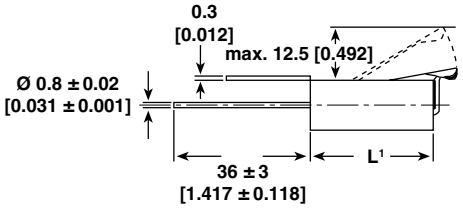
PACKAGING TABLE			
SAP	**DALE LEGACY**	**DESCRIPTION**	**TYPE**
G1	R1	reel pack tape 80 mm, 1000 pieces	KKA4, KKA5
LA	B12	loose pack, 100 pieces	KKA9, KKA11, KKE17
LJ	B12	loose pack, 200 pieces	KKA4. KKA5. KKA7, KKE4, KKE7, KKE9, KKE11
LJ	B12	loose pack, 200 pieces	KKE7 SI, KKE9 SI
LX	B14	loose pack, without quantity	all
ZX	S51	special pack (BV #), without quantity	all
51	A1	Ammo pack tape 80 mm, 1000 pieces	KKA4, KKA5

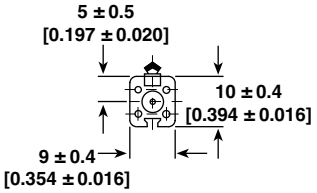
DIMENSIONS in millimeters [inches]

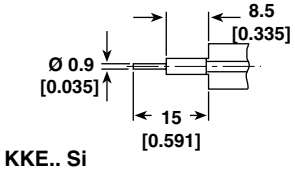


MODEL	**DIMENSIONS** in millimeters [inches]			
	a	**b**	**L**	**WEIGHT (g)**
KKA4	6.4 [0.256]	6.4 [0.256]	20 [0.787]	1.8
KKA5	6.4 [0.256]	6.4 [0.256]	25 [0.984]	5.5
KKA7	6.4 [0.256]	6.4 [0.256]	38 [1.496]	3.2
KKA9	9 [0.354]	9 [0.354]	38 [1.496]	7
KKA11	9 [0.354]	9 [0.354]	50 [1.969]	9
KKA17	9 [0.354]	9 [0.354]	75 [2.953]	13
KKE4	7 [0.276]	7.8 [0.307]	19.5 [0.768]	2
KKE7	9 [0.354]	10.5 [0.413]	25 [0.984]	4
KKE9	9 [0.354]	10.5 [0.413]	38 [1.496]	7.5
KKE11	9 [0.354]	10.5 [0.413]	50 [1.969]	9.5
KKE17	9 [0.354]	10.5 [0.413]	75 [2.953]	13.5

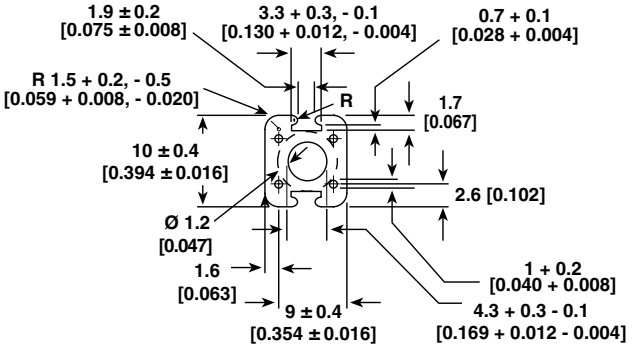
DIMENSIONS in millimeters [inches] (continued)





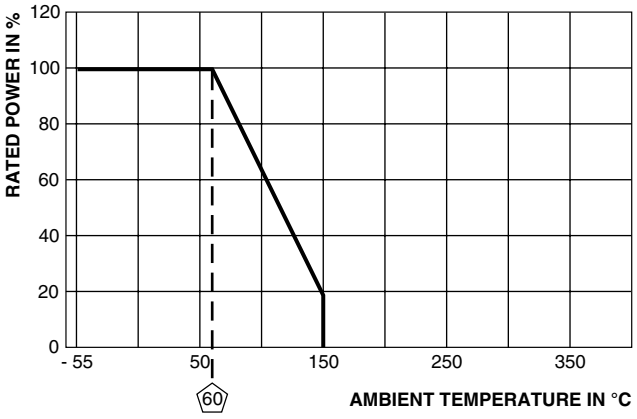


KKE.. Si

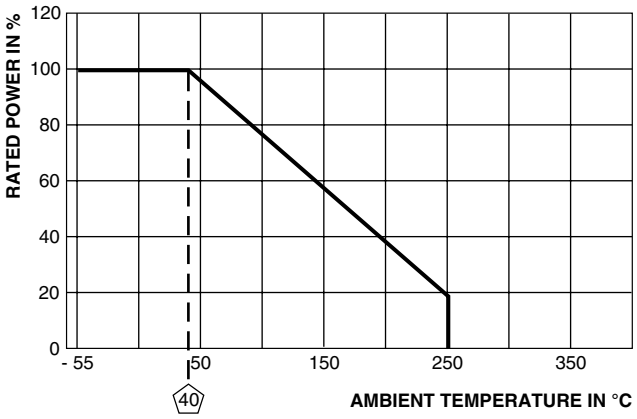


Profile dimensions

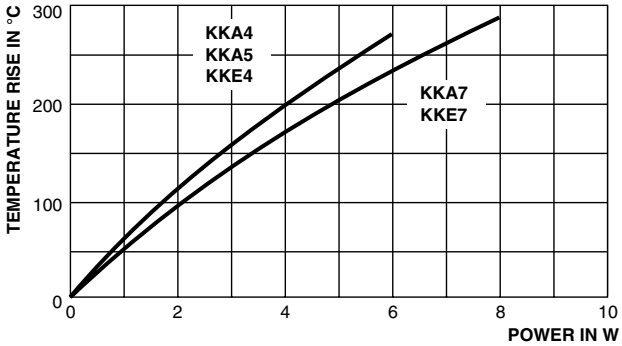
MODEL	DIMENSIONS in millimeters [inches]			
	a	b	L	WEIGHT (g)
KKE7 Si	9 [0.354]	10.5 [0.413]	25 [0.984]	5.5
KKE9 Si	9 [0.354]	10.5 [0.413]	38 [1.496]	8
KKE11 Si	9 [0.354]	10.5 [0.413]	50 [1.969]	9.8
KKE17 Si	9 [0.354]	10.5 [0.413]	75 [2.953]	13.7



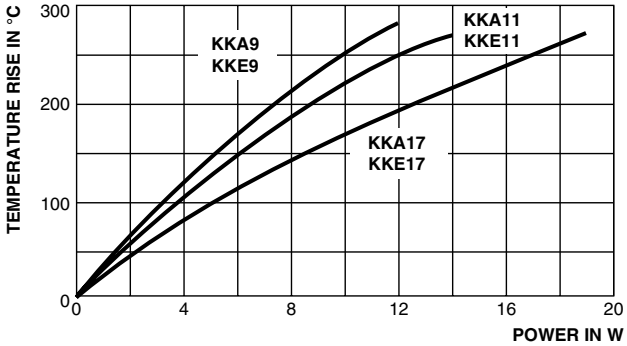
Derating KKA, KKE



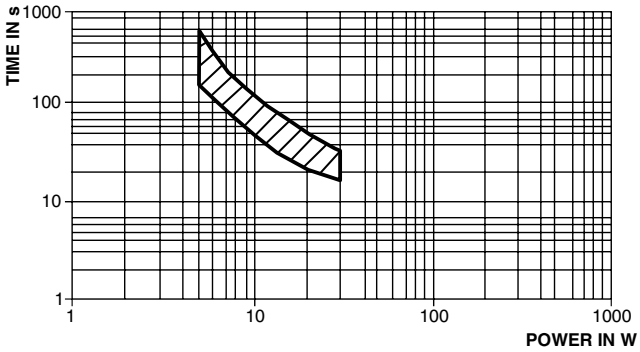
Derating KKE.. Si



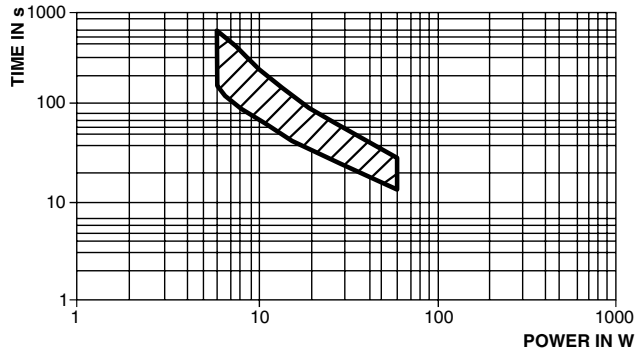
Temperature Rise



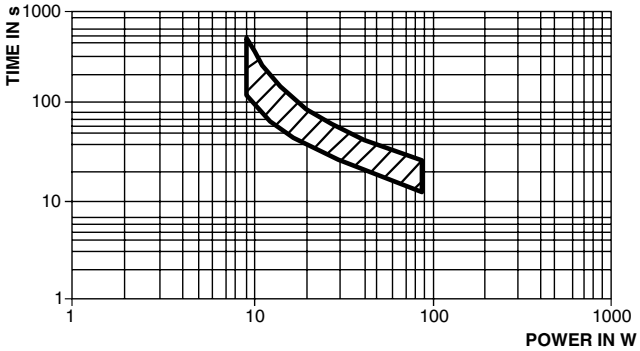
Temperature Rise



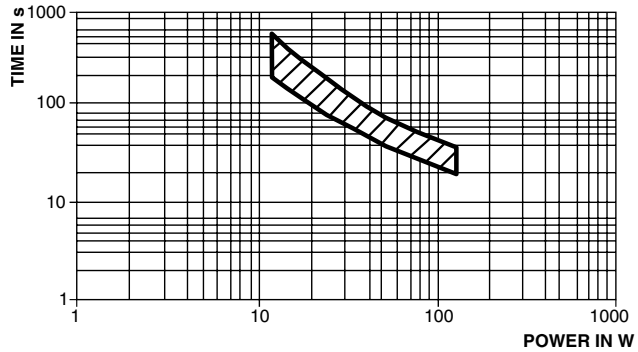
Fusing Characteristics KKE7 Si



Fusing Characteristics KKE9 Si



Fusing Characteristics KKE11 Si



Fusing Characteristics KKE17 Si

PERFORMANCE	
TEST	**TEST RESULTS**
Load Life (P_{70}, 70 °C, 1000 h)	≤ ± 3.0 % ΔR average
Climatic Sequence	≤ ± 2.0 % ΔR
Damp Heat, Steady State (40 °C, 93 % r.h., 56 days)	≤ ± 2.0 % ΔR
Resistance to Solder Heat (260 °C, 10 s)	≤ ± 0.2 % ΔR typical

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