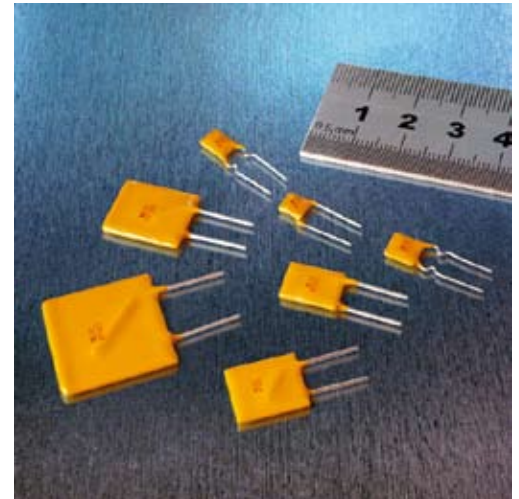


For use in a wide variety of general electronic products, ranging from industrial controls to battery packs, PolySwitch RKEF devices are functionally equivalent to the PolySwitch RXEF overcurrent protection devices. However, they are available in a significantly smaller form factor.

RKEF devices are 30% smaller than the RXEF devices. They provide the same reliable, resettable overcurrent protection and help facilitate shrinking design architectures. All PolySwitch RKEF devices feature a maximum operating voltage rating of 60V and a maximum operating temperature of 85°C. The series includes hold-current ratings of 0.50A to 5.00A and trip-current ratings of 1.00A to 10.0A.

Many of the radial-leaded devices have the same lead spacing as the RXEF devices to facilitate replacement designs and optimize board space or improve thermal conditions.



### Benefits:

- Small form factor helps conserve valuable board space
- Same lead spacing as RXEF devices facilitates replacement
- Suitable for a wide range of industrial and consumer electronics applications

### Features:

- Resettable overcurrent protection
- EU RoHS and ELV compliant
- Compatible with high-volume electronics assembly

### Applications:

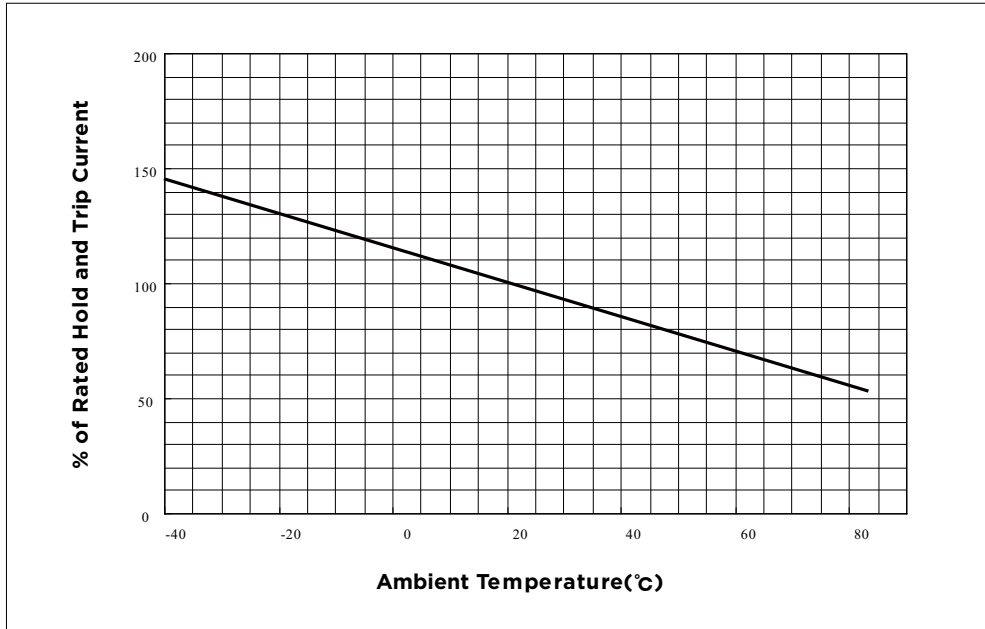
- Satellite video receivers
- Industrial controls
- Transformers
- Computer motherboards
- Modems
- IEEE-1394 ports
- Game machines
- Battery packs
- Telephones and fax machines
- Analog and digital line cards

### Thermal Derating [Hold Current (A) at Ambient Temperature (°C)]

Part Number	Maximum Ambient Temperature										
	-40°C	-20°C	0°C	20°C	25°C	40°C	50°C	60°C	70°C	85°C	125°C
<b>RKEF 60V</b>											
<b>NEW</b> RKEF050	0.73	0.65	0.58	0.50	0.48	0.42	0.38	0.34	0.31	0.26	—
<b>NEW</b> RKEF065	0.94	0.85	0.75	0.65	0.63	0.54	0.50	0.44	0.40	0.34	—
<b>NEW</b> RKEF075	1.09	0.98	0.86	0.75	0.73	0.62	0.58	0.51	0.46	0.39	—
<b>NEW</b> RKEF090	1.30	1.17	1.04	0.90	0.87	0.75	0.69	0.61	0.55	0.47	—
<b>NEW</b> RKEF110	1.60	1.43	1.27	1.10	1.06	0.92	0.85	0.75	0.67	0.57	—
<b>NEW</b> RKEF135	1.96	1.76	1.55	1.35	1.31	1.12	1.04	0.92	0.83	0.71	—
<b>NEW</b> RKEF160	2.32	2.08	1.84	1.60	1.55	1.33	1.23	1.08	0.98	0.83	—
<b>NEW</b> RKEF185	2.68	2.41	2.13	1.85	1.79	1.54	1.43	1.26	1.13	0.96	—
<b>NEW</b> RKEF250	3.63	3.25	2.88	2.50	2.43	2.08	1.93	1.70	1.52	1.31	—
<b>NEW</b> RKEF300	4.35	3.90	3.45	3.00	2.91	2.50	2.30	2.04	1.84	1.55	—
<b>NEW</b> RKEF375	5.44	4.88	4.31	3.75	3.64	3.11	2.90	2.54	2.29	1.94	—
<b>NEW</b> RKEF400	5.80	5.20	4.60	4.00	3.88	3.32	3.08	2.73	2.45	2.08	—
<b>NEW</b> RKEF500	7.25	6.50	5.75	5.00	4.85	4.15	3.85	3.41	3.06	2.59	—

## Thermal Derating Curve

RKEF



## Electrical Characteristics\*

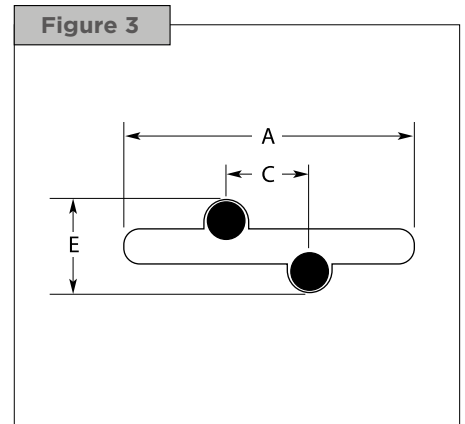
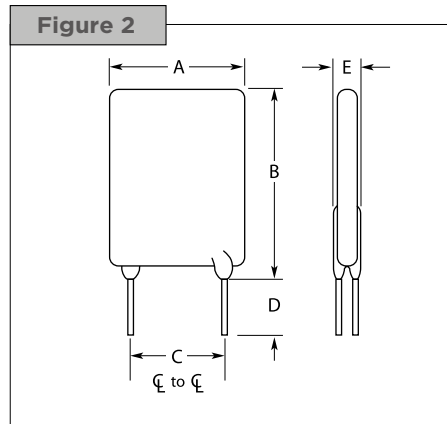
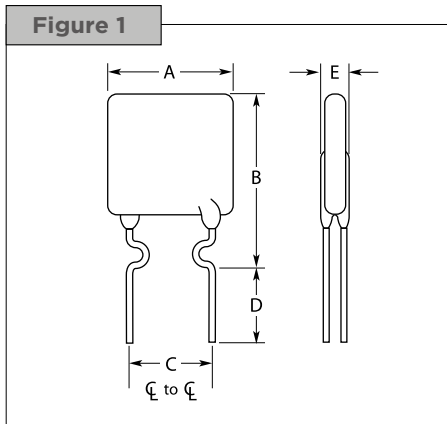
Part Number	IH (A)	IT (A)	V <sub>Max</sub> (V)	V <sub>Max</sub> Interrupt (V <sub>AC</sub> )	I <sub>Max</sub> (A)	P <sub>D</sub> TYP (W)	Max. Time-to-trip (A)	Max. Time-to-trip (S)	R <sub>Min</sub> (Ω)	R <sub>Max</sub> (Ω)	R <sub>1 Max</sub> (Ω)	Lead Size [mm <sup>2</sup> (AWG)]
<b>RKEF</b>												
<b>60V</b>												
<b>NEW</b> RKEF050	0.50	1.00	60	—	40	1.00	8.00	0.8	0.320	0.529	0.900	0.205mm <sup>2</sup> (24)
<b>NEW</b> RKEF065	0.65	1.30	60	—	40	1.25	8.00	1.0	0.250	0.450	0.720	0.205mm <sup>2</sup> (24)
<b>NEW</b> RKEF075	0.75	1.50	60	—	40	1.40	8.00	1.5	0.200	0.390	0.640	0.205mm <sup>2</sup> (24)
<b>NEW</b> RKEF090	0.90	1.80	60	—	40	1.50	8.00	2.0	0.190	0.320	0.520	0.205mm <sup>2</sup> (24)
<b>NEW</b> RKEF110	1.10	2.20	60	—	40	2.20	8.00	3.0	0.170	0.280	0.470	0.520mm <sup>2</sup> (20)
<b>NEW</b> RKEF135	1.35	2.70	60	—	40	2.30	8.00	4.5	0.110	0.220	0.370	0.520mm <sup>2</sup> (20)
<b>NEW</b> RKEF160	1.60	3.20	60	—	40	2.40	8.20	9.0	0.100	0.200	0.320	0.520mm <sup>2</sup> (20)
<b>NEW</b> RKEF185	1.85	3.70	60	—	40	2.60	9.25	12.6	0.060	0.152	0.250	0.520mm <sup>2</sup> (20)
<b>NEW</b> RKEF250	2.50	5.00	60	—	40	2.80	12.50	15.6	0.040	0.085	0.140	0.520mm <sup>2</sup> (20)
<b>NEW</b> RKEF300	3.00	6.00	60	—	40	3.20	15.00	19.8	0.030	0.050	0.080	0.520mm <sup>2</sup> (20)
<b>NEW</b> RKEF375	3.75	7.50	60	—	40	3.40	18.75	22.0	0.017	0.040	0.060	0.520mm <sup>2</sup> (20)
<b>NEW</b> RKEF400	4.00	8.00	60	—	40	3.70	20.00	24.0	0.014	0.038	0.060	0.520mm <sup>2</sup> (20)
<b>NEW</b> RKEF500	5.00	10.00	60	—	40	5.00	25.00	28.0	0.012	0.030	0.050	0.520mm <sup>2</sup> (20)

### Notes :

- IH : Hold current: maximum current device will pass without interruption in 20°C still air.
- IT : Trip current: minimum current that will switch the device from low resistance to high resistance in 20°C still air.
- V<sub>max</sub> : Maximum continuous voltage device can withstand without damage at rated current.
- V<sub>max</sub> Interrupt : Under specified conditions this is the highest voltage that can be applied to the device at the maximum current.
- I<sub>max</sub> : Maximum fault current device can withstand without damage at rated voltage.
- P<sub>D</sub> : Power dissipated from device when in the tripped state in 20°C still air.
- R<sub>min</sub> : Minimum resistance of device as supplied at 20°C unless otherwise specified.
- R<sub>max</sub> : Maximum resistance of device as supplied at 20°C unless otherwise specified.
- R<sub>imax</sub> : Maximum resistance of device when measured one hour post reflow (surface-mount device) or one hour post trip (radial-leaded device) at 20°C unless otherwise specified.

\* Electrical characteristics determined at 20°C

## Dimension Figures



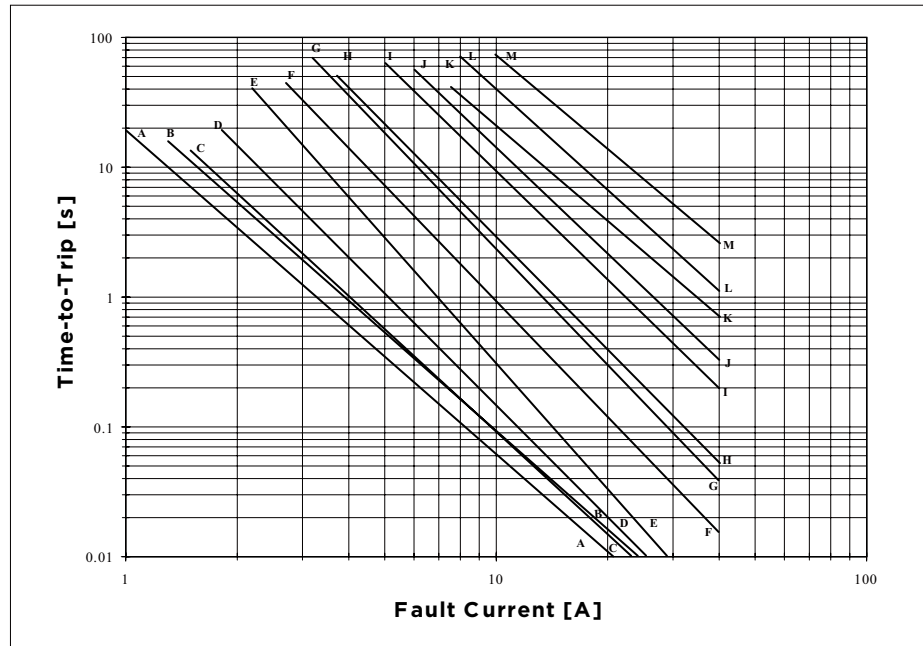
## Dimensions in Millimeters (Inches)

Part Number	Dimension A		Dimension B		Dimension C		Dimension D		Dimension E		Figures
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
<b>RKEF 60V</b>											
<b>NEW</b> RKEF050	—	7.10 (0.28)	—	11.43 (0.45)	4.32 (0.17)	5.84 (0.23)	7.60 (0.30)	—	—	3.56 (0.14)	1, 3
<b>NEW</b> RKEF065	—	7.11 (0.28)	—	12.20 (0.48)	4.32 (0.17)	5.84 (0.23)	7.60 (0.30)	—	—	3.56 (0.14)	1, 3
<b>NEW</b> RKEF075	—	7.87 (0.31)	—	12.20 (0.48)	4.32 (0.17)	5.84 (0.23)	7.60 (0.30)	—	—	3.56 (0.14)	1, 3
<b>NEW</b> RKEF090	—	7.87 (0.31)	—	13.97 (0.55)	4.32 (0.17)	5.84 (0.23)	7.60 (0.30)	—	—	3.56 (0.14)	1, 3
<b>NEW</b> RKEF110	—	7.60 (0.30)	—	14.50 (0.57)	4.32 (0.17)	5.84 (0.23)	7.60 (0.30)	—	—	4.10 (0.16)	1, 3
<b>NEW</b> RKEF135	—	10.20 (0.40)	—	17.00 (0.67)	4.32 (0.17)	5.84 (0.23)	7.60 (0.30)	—	—	3.81 (0.15)	2, 3
<b>NEW</b> RKEF160	—	12.20 (0.48)	—	18.30 (0.72)	4.32 (0.17)	5.84 (0.23)	7.60 (0.30)	—	—	3.81 (0.15)	2, 3
<b>NEW</b> RKEF185	—	13.00 (0.51)	—	18.80 (0.74)	4.32 (0.17)	5.84 (0.23)	7.60 (0.30)	—	—	3.81 (0.15)	2, 3
<b>NEW</b> RKEF250	—	14.00 (0.55)	—	20.60 (0.81)	4.32 (0.17)	5.84 (0.23)	7.60 (0.30)	—	—	3.00 (0.12)	2, 3
<b>NEW</b> RKEF300	—	16.50 (0.65)	—	21.20 (0.83)	4.32 (0.17)	5.84 (0.23)	7.60 (0.30)	—	—	3.00 (0.12)	2, 3
<b>NEW</b> RKEF375	—	16.50 (0.65)	—	25.20 (0.99)	9.40 (0.37)	10.90 (0.43)	7.60 (0.30)	—	—	3.00 (0.12)	2, 3
<b>NEW</b> RKEF400	—	21.00 (0.83)	—	24.90 (0.98)	9.40 (0.37)	10.90 (0.43)	7.60 (0.30)	—	—	3.00 (0.12)	2, 3
<b>NEW</b> RKEF500	—	24.10 (0.95)	—	29.00 (1.14)	9.40 (0.37)	10.90 (0.43)	7.60 (0.30)	—	—	3.00 (0.12)	2, 3

## Typical Time-to-trip Curves at 20°C

### RKEF

A = RKEF050	J = RKEF300
B = RKEF065	K = RKEF375
C = RKEF075	L = RKEF400
D = RKEF090	M = RKEF500
E = RKEF110	
F = RKEF135	
G = RKEF160	
H = RKEF185	
I = RKEF250	



## Physical Characteristics and Environmental Specifications

### RKEF

#### Physical Characteristics

Lead material	RKEF050 to 090: Tin-plated Copper, 0.205mm <sup>2</sup> (24AWG), ø0.51mm (0.020in.) RKEF110 to 500: Tin-plated Copper, 0.52mm <sup>2</sup> (20AWG), ø0.81mm (0.032in.)
Soldering characteristics	Solderability per ANSI/J-STD-002 Category 3
Solder heat withstand	RKEF050-RKEF185: per IEC-STD 68-2-20, Test Tb, Method 1a, condition a; can withstand 5 seconds at 260°C ± 5°C All other sizes: per IEC-STD 68-2-20, Test Tb, Method 1a, condition b; RKEF can withstand 10 seconds at 260°C ± 5°C
Insulating material	Cured, flame-retardant epoxy polymer; meets UL 94V-0

**Notes:** Devices are not designed to be placed through a reflow process.

### RKEF

#### Environmental Specifications

Test	Conditions	Resistance Change
Passive aging	-40°C, 1000 hours	± 5%
	85°C, 1000 hours	± 5%
Humidity aging	85°C, 85%RH, 1000 hours	± 10%
Thermal shock	85°C, -40°C (10 times)	± 10%
Solvent resistance	MIL-STD-202, Method 215F	No change

**Notes:**

Storage conditions: 40°C max., 70% RH max.; devices should remain in original sealed bags prior to use. Devices may not meet specified values if these storage conditions are exceeded.

## Packaging and Marking Information

	Part Number	Bag Quantity	Tape & Reel Quantity	Ammo Pack Quantity	Standard Pack Quantity	Part Marking	Agency Recognition
	<b>RKEF 60V</b>						
<b>NEW</b>	RKEF050	500	—	—	10,000	KF050	UL
<b>NEW</b>	RKEF065	500	—	—	10,000	KF065	UL
<b>NEW</b>	RKEF075	500	—	—	10,000	KF075	UL
<b>NEW</b>	RKEF090	500	—	—	10,000	KF090	UL
<b>NEW</b>	RKEF110	500	—	—	10,000	KF110	UL
<b>NEW</b>	RKEF135	500	—	—	10,000	KF135	UL
<b>NEW</b>	RKEF160	500	—	—	10,000	KF160	UL
<b>NEW</b>	RKEF185	500	—	—	10,000	KF185	UL
<b>NEW</b>	RKEF250	500	—	—	10,000	KF250	UL
<b>NEW</b>	RKEF300	250	—	—	250	KF300	UL
<b>NEW</b>	RKEF375	250	—	—	250	KF375	UL
<b>NEW</b>	RKEF400	250	—	—	250	KF400	UL
<b>NEW</b>	RKEF500	250	—	—	250	KF500	UL

## Raychem Circuit Protection Products

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