

KKA-M3

30/35A Mini Automotive Relay

Features

- 30A/35A switching capability
- 1 Form A & 1 Form C contact arrangement
- Resistor and diode for coil component available
- Comply with RoHS, ELV directive

Typical Application

Applicable for 30A/35A Automotive Grade Circuit: Lighting control, Headlight control, Electromagnet control Air-conditioning, Heaters (seat, front/rear windows), Fan motors control, Fuel pump control, Wiper motors control



ORDERING GUIDE

	KKAM3	-012	1H	23	-R	(P)
Type	KKAM3 - Standard					
Coil Voltage	012:12VDC 024:24VDC					
Contact Form	1H:1Form A 1Z: 1 Form C					
Terminal Type	12: iron coil pin, brass working pin, default tinned 22: brass coil pin,brass working pin, default tinned 23: brass coil pin,copper working pin, default tinned					
Parallel Coil Components	Nil: without parallel component R: parallel transient suppression resistors D1:parallel transient suppression diode, with anode connected to terminal #1 D2:parallel transient suppression diode, with anode connected to terminal #2					
Special Code	(XXX):customer special requirement Nil: Standard					

CHARACTERISTICS

Contact arrangement	1H (SPST-NO),1Z (SPDT)
Voltage drop	NO:Typ.15mV,250mV max. (at 10A) NC:Typ.25mV,250mV max. (at 10A)
Max.continuous current ¹⁾¹⁰⁾	NO:30A(at 23°C),25A(at 85°C),13A(at 125°C) NC:25A(at 23°C),15A(at 85°C), 10A(at 125°C)
Max.switching current ¹⁰⁾	35A (resistive)
Max. switching voltage ²⁾	27VDC (resistive)
Min.contact load	1A 6VDC
Electrical endurance	See "CONTACT DATA"
Mechanical endurance	1x10 ⁷ OPS (300OPS/min)
Insulation resistance	100M Ω (at 500VDC)
Dielectric strength ³⁾	500VAC
Operate time ¹⁰⁾	Max.:10ms (at nomi.vol.)
Release time ¹⁰⁾	Max.:10ms ⁴⁾
Ambient temperature	-40°C to 125°C
Vibration resistance ⁵⁾¹⁰⁾	10Hz to 60Hz 0.35mm DA 60Hz to 500Hz 49m/s ²
Shock resistance ⁵⁾¹⁰⁾	196m/s ²
Flammability ⁶⁾	UL94-HB or better(meets FMVSS 302)
Termination	QC ⁷⁾
Construction	Plastic sealed,Dust protected
Unit weight	Approx.22g
Mechanical data ⁸⁾	housing retention (pull &push):200N min. terminal retention(pull &push):100N min. Terminal resistance to bending (front &side):10N min ⁹⁾

1)For NO contacts,measured when applying 100% rated voltage on coil.

2)See "Load limit curve" for details

3)1min, leakage current less than 1mA.

4)The value is measured when voltage drops suddenly from nominal voltage to 0 VDC and coil is not paralleled with suppression circuit.

5)When energized, opening time of NO contacts shall not exceed 100μs, when non-energized,opening time of NC contacts shall not exceed 100μs, meantime, NO contacts shall not be closed.

6)FMVSS:Federal Motor Vehicle Safety Standard.

7)Do NOT knock on relays with hard objects such as rubber rod and rubber hammer during mounting, which might lead to relay damage.

8)Only valid for QC version.

9)Test point is at 2mm away from terminal end,and after removing testing force, the terminal transfiguration shall not exceed 0.5mm.

10)Only for the 12VDC coil voltage type.

COIL DATA

at 23°C

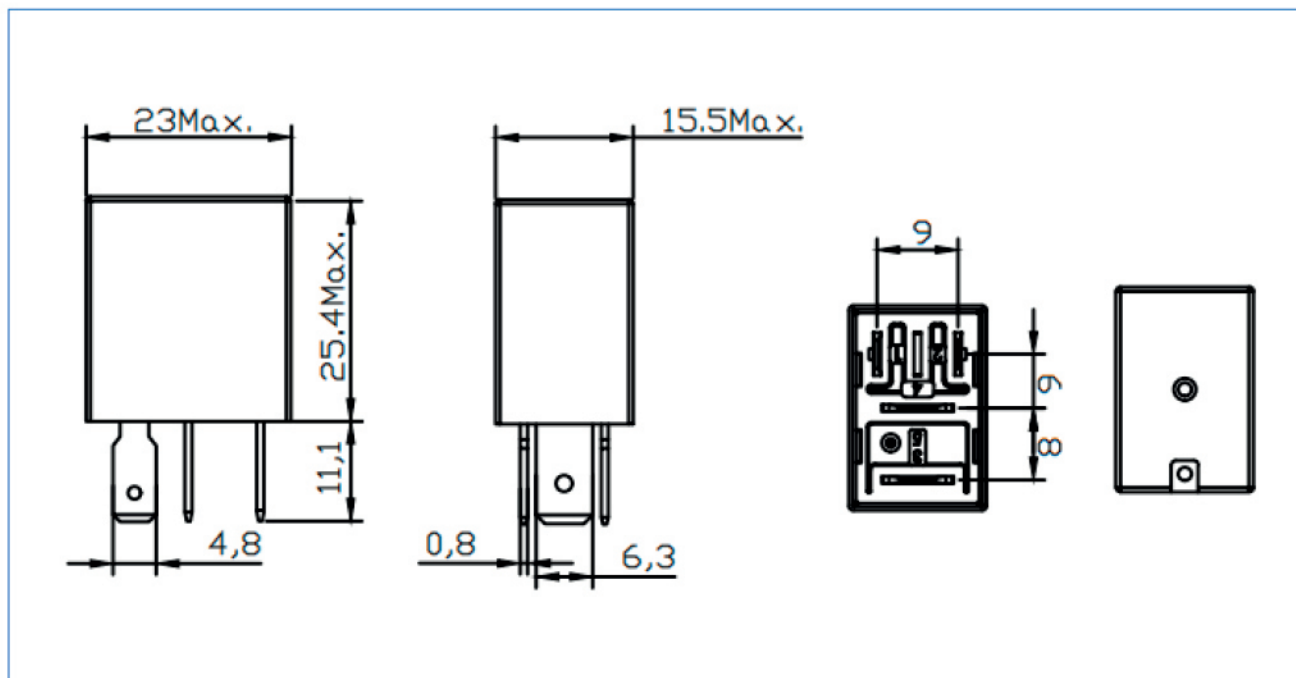
	Nominal voltage VDC	Pick-up voltage VDC max.	Drop-out voltage VDC min.	Coil resistance x(1±10%)Ω	Parallel Resistance ²⁾ x(1±5%)Ω	Equivalent resistance Ω	Power consumption W	Max.allowable overdrive voltage ¹⁾ VDC	
								at 23°C	at 85°C
Standard	12	7.2	1.2	90			1.6	20	15
	12	7.2	1.2	90	680	79.5	1.8	20	15
	24	14.4	2.4	360			1.6	40	30
	24	14.4	2.4	360	2700	317.6	1.8	40	30
Sensitive	12	7.2	1.2	124			1.2	25	19
	12	7.2	1.2	124	680	104.9	1.4	20	15
	24	14.4	2.4	441			1.3	47	35
	24	14.4	2.4	441	1800	354.2	1.6	33	25

1)Max.allowable overdrive voltage is stated with no load applied and minimum coil resistance.

CONTACT DATA

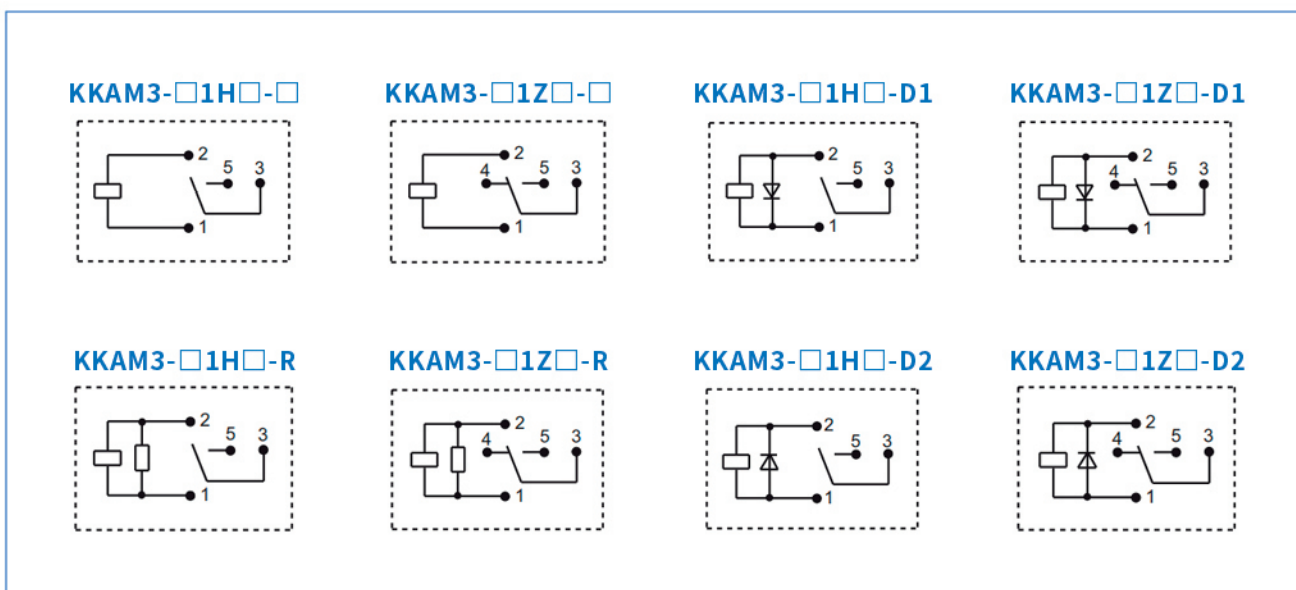
Load voltage	Load type		Load current (A)			On/Off ratio		Electrical Endurance OPS	Contact Material	Ambient temp
			1C		1A	OnS	OffS			
			NO	NC						
13.5 VDC	Resistive	Make	35	20	35	2	2	1×10 ⁵	AgSnO ₂	See Ambient Temp. Curve
		Break	35	20	35					
	Lamp	Make	150	-	150	2	2	1×10 ⁵	AgSnO ₂	
		Break	30		30					
	Inductive	Make	80	---	80	2	2	1×10 ⁵	AgSnO ₂	
		Break	30	---	30					

DIMENSION



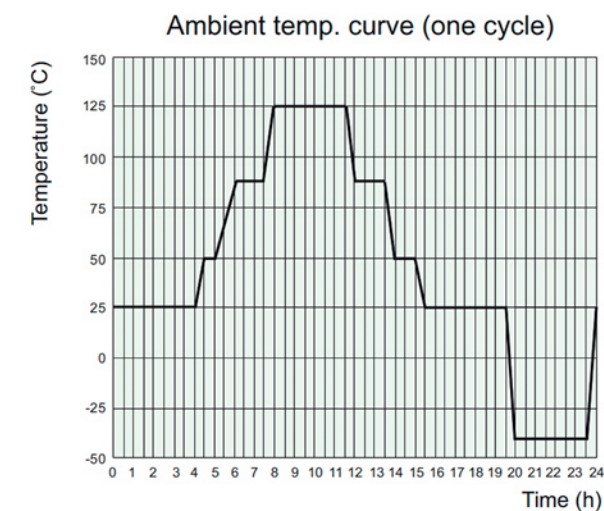
Remark: In case of no tolerance shown in outline dimension: outline dimension $\leq 1\text{mm}$, tolerance should be $\pm 0.2\text{mm}$;
Outline dimension $> 1\text{mm}$ and $\leq 5\text{mm}$, tolerance should be $\pm 0.3\text{mm}$; outline dimension $> 5\text{mm}$, tolerance should be $\pm 0.4\text{mm}$.

WIRING DIAGRAM



CHARACTERISTICS CURVES

Ambient temperature curve of the electrical endurance test



Disclaimer

The specification is for reference only. See to "Terminology and Guidelines" for more information. Specifications subject to change without notice. In case there is specific criterion (such as mission profile, technical specification, PPAP etc.) checked and agreed by and between customer and KKA, this specific criterion should be taken as standard regarding any requirement on KKA product.
We could not evaluate the performance and all the parameters for every possible application. Thus the user should be in a right position to choose the suitable product for their own application. If there is any query, please contact KKA for the technical service. However, it is the users responsibility to determine which product should be used only.

