## **NOTICE**



Ref Nr: LR-20161228 Date: 2016.12.28

TO: All customers FROM: Leaded-R Quality Assurance Dept.

#### HEREWITH YOU ARE INFORMED OF BELOW.

#### **DESCRIPTION:**

1. 因原材料供貨因素,FRM 系列已不再生產,全面改用特性規格更高階之FKN系列。 FRM series is phased out due to raw material discontinued, alternative one is FKN series with superior characteristics.

2. 生效日期:自2017年7月1日起生效。 Effective date: from Jul.1, 2017.

### 3. FRM & FKN 比較

### Comparison table of FRM and FKN:

Series	FRM Fusible Metal Film Resistors	FKN Fusible Wirewound Resistors	Comparison	
Power Range	1/4W~3W	1/4W~7W	FKN is with wider power range	
Function	Safety function to protect circuit board	Safety function to protect circuit board	Same funtion	
Resistance Element	Metal Film	Alloy Wire	Different technics	
TCR	<b>±200</b> ppm /°C	±300 ppm f°C (Standard, low T.C.R is on request)	FKN is flexible for customized requirment	
Resistance Range	1Ω~560Ω	0.1Ω~1ΚΩ	FKN Series is with wider resistance range	
Fusing Characteristics	1 $\Omega$ ≦R≤2.0 $\Omega$ Fusing time within 30 seconds at 25 times of rated power R≥2.2 $\Omega$ Fusing time within 30 seconds at 16 times of rated power	R≤2.0 $\Omega$ Fusing time within 60 seconds at 36 times of rated power; R>2.0 $\Omega$ Fusing time within 60 seconds at 25 times of rated power;	FRM cut off with shorter time at the same conditions. See attached table	
Surge Voltage	Low	High (on request)	FKN is capabile to withstand higher surge voltage at the same conditions.  Detail as comparison table	
Load Life	Common	Excellent	FKN performs better in Load Life stability.	

Yageo PN	Fusing Time and Surge withstanding Voltage difference at the same conditions.							
	Power / Value	Fusing Test Method	Appraise	Fusing Voltage	current	Fusing time	surge Voltage	
FRM3WSJT-73-1R	3W / 1R	25 times of rated power	within 30s	8.66V	8.66A	2.5s~4.7s	400V	
FKN3WSJT-73-1R	3W / 1R	25 times of rated power	within 60s	8.66V	8.66A	21s~24s	1KV	
FRM3WSJT-73-22R	3W / 22R	25 times of rated power	within 30s	40.6V	1.85A	0.7s~1.5s	500V	
FKN3WSJT-73-22R	3W / 22R	25 times of rated power	within 60s	40.6V	1.85A	12s~15s	1.5KV	

# **NOTICE**



**SUGGESTION FOR ALTERNATIVE PRODUCTS:** Not applicable

Quality Manager Product Manager Sales Manager

Signature:Nane. Zhou.Signature:Flora ShenSignature:Ken HsuDate:Sep.22,2016Dec. 28, 2016Date:Dec. 28, 2016

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RETURN YOUR COMMENTS BEFORE: Jan.31, 2017

Remarks:

Comments

**Date:** Dec. 28, 2016

Function: Marketing

Signature: Ken Hsu