Innovative Service Around the Globe YAGEO

DATA SHEET

SHUNT RESISTOR
AUTOMOTIVE GRADE

PU Series

1%, 5%

sizes 2726

RoHS Compliant & Halogen Free

YAGEO

Product specification – May 31, 2024 V.0

SCOPE

This specification describes shunt resistor PU2726 series with lead-free terminations made by welding technology.

APPLICATIONS

- Power
- Telecom base station
- Automotive (Headlight/ Window control/ Engine control unit/ Steering control….)
- Alternative Energy

FEATURES

- AEC-Q200 qualified
- High power up to 12W

ORDERING INFORMATION - GLOBAL PART NUMBER

Part number is identified by the series name, size, tolerance, packaging type, temperature coefficient of resistance, taping reel, resistance value.

GLOBAL PART NUMBER

PU2726	X	X	X	XX	XXXX	L
	(1)	(2)	(3)	(4)	(5)	(6)

(1) TOLERANCE

F = ±1%

J = ±5%

(2) PACKAGING TYPE

K = Embossed taping reel

(3) TEMPERATURE COEFFICIENT OF RESISTANCE

M = ±75ppm/°C

E = ±50ppm/°C

(4) TAPING REEL & POWER

P3 = 3W, 13 inch dia. Reel

P4 = 4W, 13 inch dia. Reel

P5 = 5W, 13 inch dia. Reel

P6 = 6W, 13 inch dia. Reel

P7 = 7W, 13 inch dia. Reel

P8 = 8W, 13 inch dia. Reel

P9 = 9W, 13 inch dia. Reel

PD = 11W, 13 inch dia. Reel

PC = 12W, 13 inch dia. Reel

(5) RESISTANCE VALUE

0.2 mΩ to 5 mΩ

(6) DEFAULT CODE

Letter L is the system default code for ordering only. (Note)

ORDERING EXAMPLE

The ordering code for a PU2726 9W chip resistor, TC 75 ppm/°C value 0.0005 (0.5mR) with ±1% tolerance, supplied in 13-inch tape reel with 1.4Kpcs quantify is: PU2726FKMP90U5L.

NOTE

1. All our RSMD products meet RoHS compliant and Halogen Free.
   "LFP" of the internal 2D reel label mentions "Lead Free Process".
2. On customized label, "LFP" or specific symbol can be printed.

DIMENSIONS & CONSTRUCTIION:

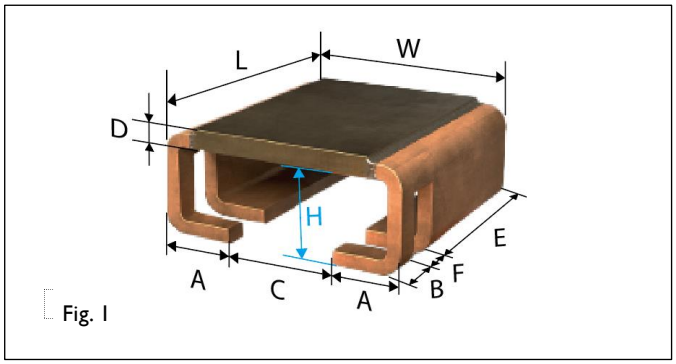

Fig. 1

0.2mohm-marking 0M20
1mohm-marking R001

TAPING REEL & POWER

Table 1

TYPE	DIMENSIONS (MILLIMETERS)							
	L	W	A	B	C	E	F	H
PU2726	6.60 ±0.20	6.90 ±0.20	1.90 ±0.20	0.70 ±0.10	3.00 ±0.2	4.90 ±0.2	1.00 ±0.10	2.60 ±0.20

Table 2

TYPE	RESISTANCE VALUE (mΩ)	D (MM)
PU2726	0.2	1.50±0.10
	0.3	0.80±0.10
	0.5	0.80±0.10
	0.7	0.50±0.10
	1	0.35±0.10
	2	0.55±0.10
	3	0.35±0.10
	4	0.25±0.10
	5	0.22±0.10

TAPING REEL

Table 3

DIMENSION	TAPE WIDTH (mm)	ØA (mm)	ØN (mm)	ØC (mm)	ØD (mm)	W1 (mm)	W2 MAX.
PU2726	16	330.0±2.0	100.0±1.0	13.50±0.5	21.0±0.8	16.4+2/-0	23

OUTLINES

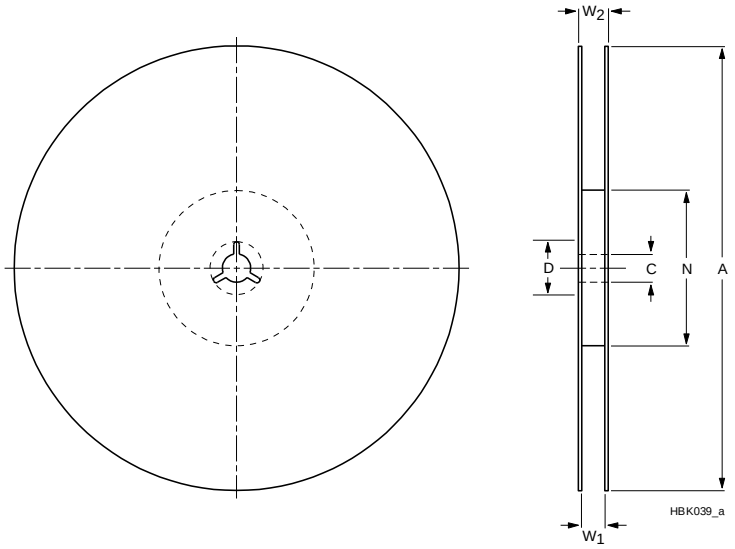

Fig. 2 Reel

DIMENSIONS

Table 4

DIMENSION	A_0 (mm)	B_0 (mm)	W MAX. (mm)	E (mm)	F (mm)	P_0 (mm)	P_1 (mm)	P_2 (mm)	D_0 (mm)	D_1 (mm)	T MAX.
PU2726	7.4±0.10	7.10±0.10	16.30	1.75±0.10	7.50±0.10	4.00±0.10	12.00±0.10	2.00±0.10	1.50±0.10	1.50±0.10	5.5

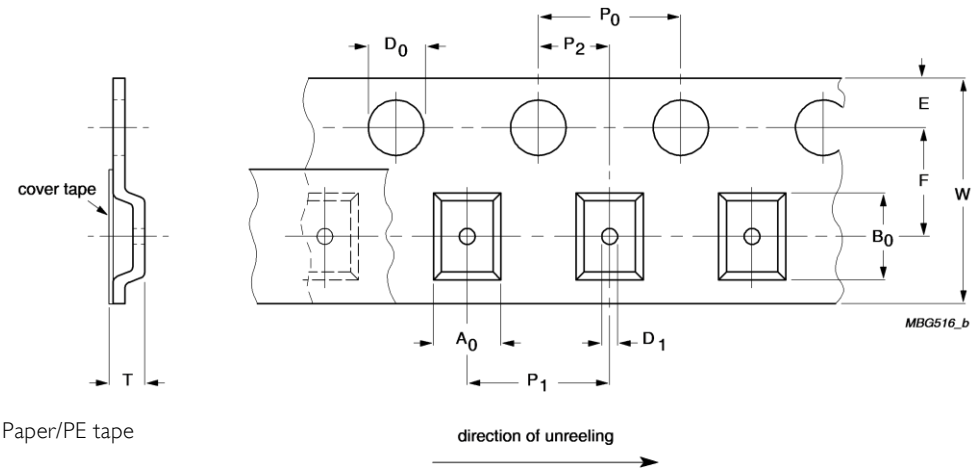

Fig. 3 Paper/PE tape

PACKING METHOD

Leader/trailer tape specification

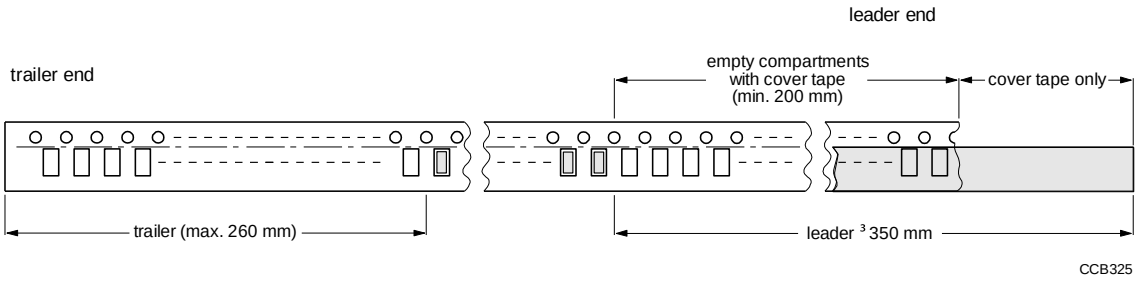

Fig. 4

ELECTRICAL CHARACTERISTICS

Table 5

TYPE	CHARACTERISTICS				
	OPERATING TEMPERATURE RANGE	MAX. WORKING VOLTAGE	POWER RATING(4)	RESISTANCE RANGE	TEMPERATURE COEFFICIENT
PU2726	–65 °C to +170 °C	$\sqrt{(P \times R)}$	12W (PC)	0.2mΩ	±75ppm/°C
			11W (PD)	0.3mΩ	
			9W (P9)	0.5mΩ	
			8W (P8)	0.7mΩ	
			7W (P7)	1mΩ	
			6W (P6)	2mΩ	±50ppm/°C
			5W (P5)	3mΩ	
			4W (P4)	4mΩ	
			3W (P3)	5mΩ	

FOOTPRINT AND SOLDERING PROFILES

Table 6

TYPE	SOLDER PAD DIMENSIONS (MILLIMETERS)				
	w	a	b	c	d
PU2726	7.8	5.6	2.0	0.9	0.9

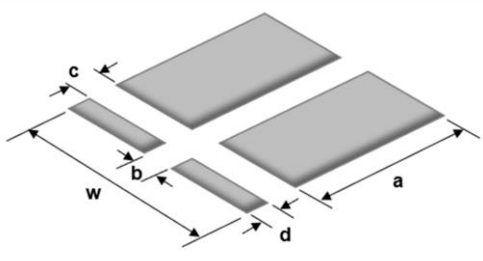

Fig. 5

PACKING STYLE AND PACKAGING QUANTITY

Table 7 Packing style and packaging quantity

PACKING STYLE	PACKING STYLE	REEL DIMENSION	QUANTITY PER REEL
Paper taping reel (R)	Embossed Taping Reel (K)	13" (330 mm)	1,000 (0.2, 0.3, 0.5mΩ) 1,500 (above 0.5mΩ)

NOTE

1. For paper/embossed tape and reel specification/dimensions, please refer to data sheet "Chip resistors packing".

FUNCTIONAL DESCRIPTION

OPERATING TEMPERATURE RANGE

Range: –65 °C to +170 °C

POWER RATING

Standard rated power at 70°C:

PU2726 = 3W~12W

RATED VOLTAGE

The DC or AC (rms) continuous working voltage corresponding to the rated power is determined by the following formula:

$U = \sqrt{(PxR)}$

Where

U=Continuous rated DC or AC (rms) working voltage (V)

P=Rated power

R=Resistance value (Ω)

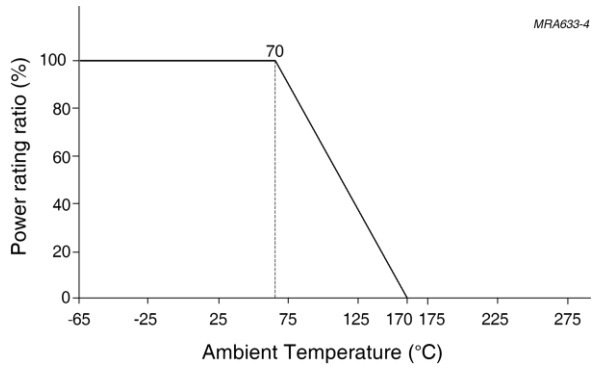

Fig. 6 Maximum dissipation (P_{max}) in percentage of rated power as a function of the operating ambient temperature ($T_{amb.}$)

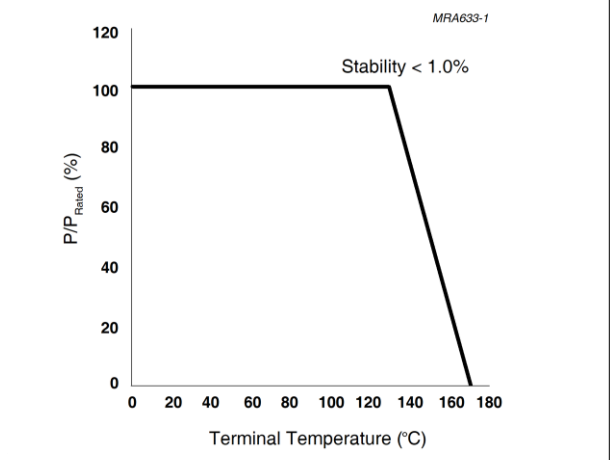

Fig. 7 Stability Performance

TEST CONDITION, PROCEDURE AND

Table 8

TEST	TEST METHOD	PROCEDURE	REQUIREMENTS
Short Time Overload	IEC 60115-1 8.1	5 times of rated power for 5 seconds at room temperature	±(1%+0.0005 Ω) No visible damage
High Temperature Exposure	MIL-STD-202 method 108 IEC 60068-2-2	1,000 hours at maximum operating temperature depending on specification, unpowered,	±(1%+0.0005 Ω)
Temperature Cycling	JESD22-A104	-55/+155°C, 1000 cycles Dwell time is 15 minutes. Devices mounted Air – Air.	±(1%+0.0005 Ω)
Biased Humidity	MIL-STD-202 method 103	1,000 hours; 85 °C / 85% RH 10% of operating power	±(1%+0.0005 Ω)
Life/ Operational Life/ Endurance	MIL-STD-202 method 108 IEC 60115-1 7.1	1,000 hours at 70 °C applied rated power 1.5 hours on, 0.5 hour off, still air required	±(1%+0.0005 Ω)
Resistance to Soldering Heat	MIL-STD-202 method 210	Specimen passed 3 times reflow temperature at 260°C, with solder.	±(0.5%+0.0005 Ω) No visible damage
Board Flex / Bending	AEC-Q200-005	Chips mounted on a glass epoxy resin PCB (FR4) Bending: 2 mm Holding time: minimum 60 seconds	±(1%+0.0005 Ω)
Vibration	MIL-STD-202 method 204	5 g's for 20 min., 12 cycles each of 3 orientations.	±(1%+0.0005 Ω)

REVISION HISTORY

REVISION	DATE	CHANGE NOTIFICATION	DESCRIPTION
Version 0	May 31, 2024	-	- First issue of this specification

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