

Features

- Excellent Matching Ratio: 0.05% Matching (Max)
- Matching Temperature Drift:
0.4 ppm/°C (Typ), 2 ppm/°C (Max)
- Operation Temperature Range: -40°C to 125°C

Applications

- Instrumentation
- Industrial Control
- Building Block for the Precision Amplifier Circuit
- Precision Divider for Voltage Reference

Description

The TPR84xx is a matched resistor network which consists of two matched resistors. The device has excellent matching specifications over the operating temperature range.

These resistor networks provide precise ratio metric stability required in difference amplifiers, instrumentation amplifiers, dividers or inverters for voltage references.

The device is available in the SOT23G-3 package.

Typical Application Circuit

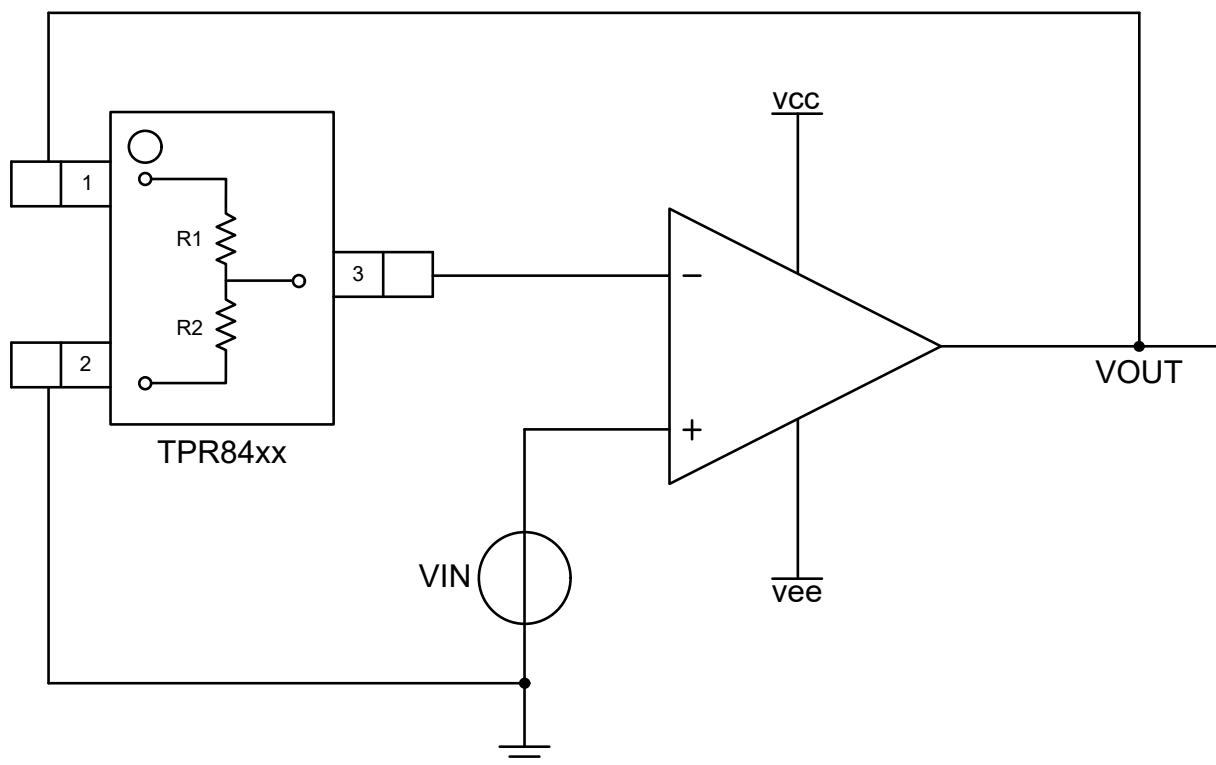


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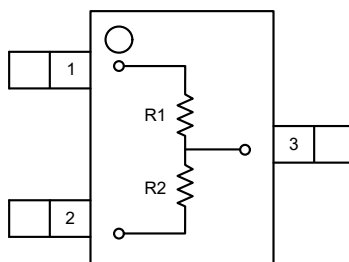
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Revision History

Date	Revision	Notes
2025-11-04	Rev.A.0	Initial version.

Pin Configuration and Functions

TPR84xx
SOT23G-f Package
Top View



Product	R1 (k Ω)	Working Voltage for R1 (V)	R2 (k Ω)	Working Voltage for R2 (V)	Resistor Matching Ratio Temperature Drift(ppm/°C)
TPR8401-3STR-S	1	10	9	36	± 2
TPR8402-3STR-S	2	20	10	60	± 2

Specifications

Absolute Maximum Ratings ⁽¹⁾

Parameter		Min	Max	Unit
T _A	Operating Temperature Range	-40	125	°C
T _J	Maximum Junction Temperature		150	°C
T _{STG}	Storage Temperature Range	-65	150	°C
T _L	Lead Temperature (Soldering 10 sec)		260	°C

(1) Stresses beyond those listed under Absolute Maximum Ratings may cause permanent damage to the device. Exposure to any Absolute Maximum Rating condition for extended periods may affect device reliability and lifetime.

ESD, Electrostatic Discharge Protection

Symbol	Parameter	Condition	Minimum Level	Unit
HBM	Human Body Model ESD	ANSI/ESDA/JEDEC JS-001 ⁽¹⁾	0.5	kV
CDM	Charged Device Model ESD	ANSI/ESDA/JEDEC JS-002 ⁽²⁾	1.5	kV

(1) JEDEC document JEP155 states that 500-V HBM allows safe manufacturing with a standard ESD control process.

(2) JEDEC document JEP157 states that 250-V CDM allows safe manufacturing with a standard ESD control process.

Recommended Operating Conditions

Parameter		Min	Typ	Max	Unit
T _A	Operating Temperature Range	-40		125	°C

Thermal Information

Package Type	θ_{JA}	θ_{JC}	Unit
SOT23G-3	280	62	°C/W

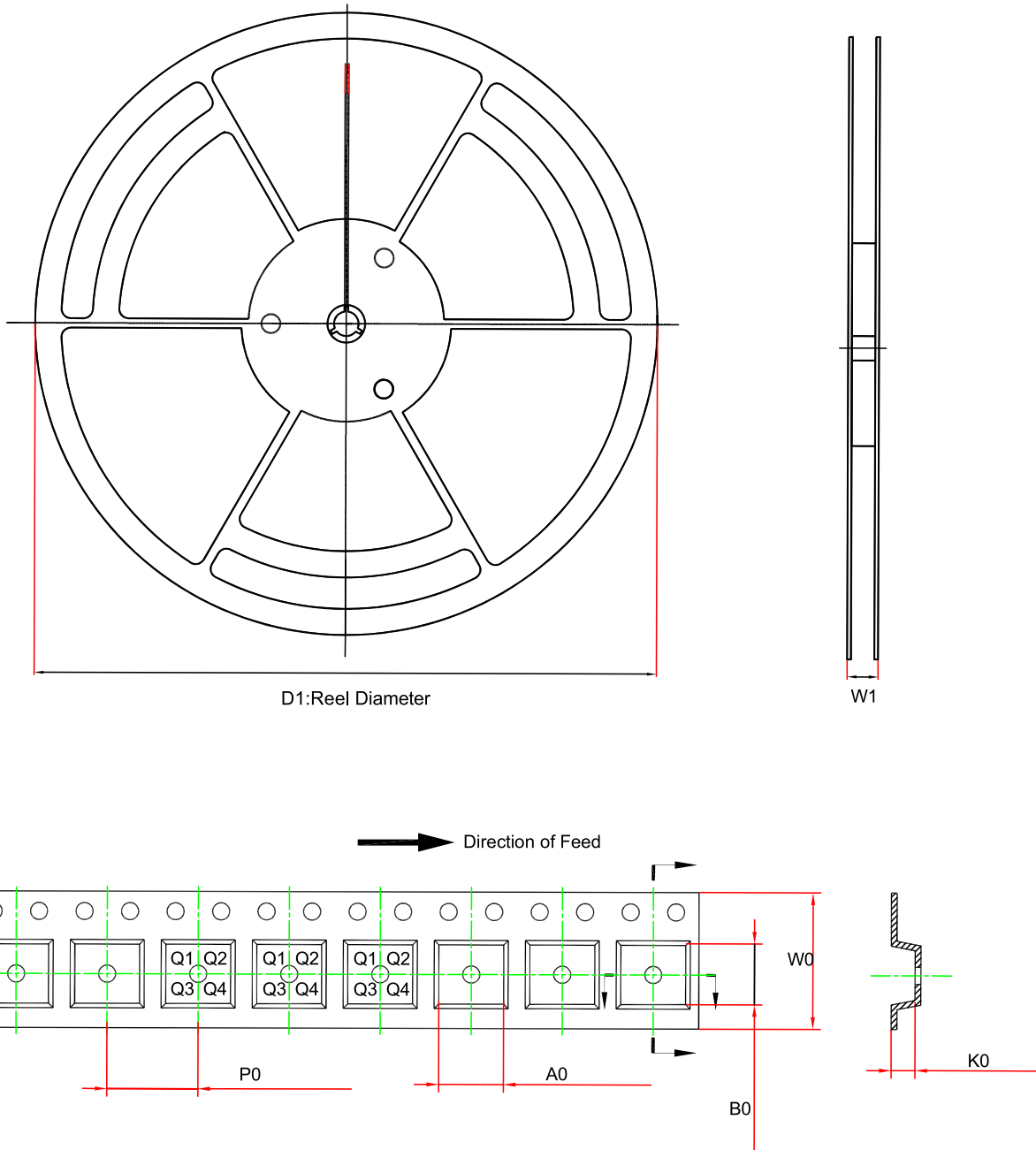
Electrical Characteristics

All test conditions: $T_A = 25^{\circ}\text{C}$, unless otherwise noted.

Parameter		Conditions	Min	Typ	Max	Unit
$\Delta R/R$	Resistor Matching Ratio	-40°C to 125°C	-0.05		0.05	%
$(\Delta R/R)/\Delta T$	Resistor Matching Ratio Temperature Drift ⁽¹⁾	-40°C to 125°C		± 0.4	2	ppm/ $^{\circ}\text{C}$
	Resistor Voltage Coefficient ⁽¹⁾			0.1		ppm/V
ΔR	Absolute Resistor Tolerance	-40°C to 125°C	-15		15	%
$\Delta R/\Delta T$	Absolute Resistor Value Temperature Drift ⁽¹⁾	-40°C to 125°C	-20	± 5	20	ppm/ $^{\circ}\text{C}$

(1) Provided by bench test and design simulation.

Tape and Reel Information



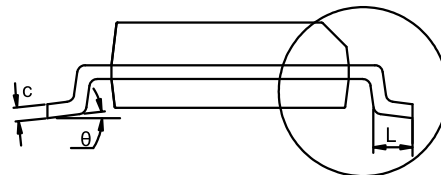
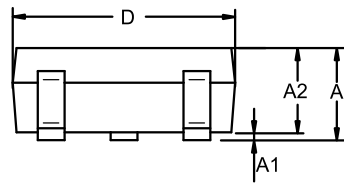
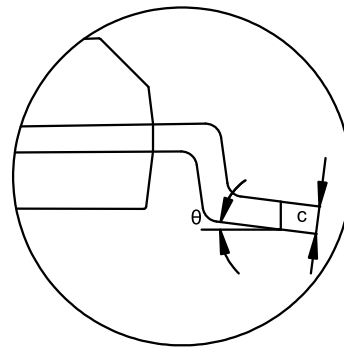
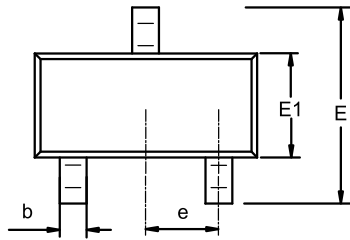
Order Number	Package	D1 (mm)	W1 (mm)	A0 (mm)	B0 (mm)	K0 (mm)	P0 (mm)	W0 (mm)	Pin1 Quadrant
TPR84xx-3STR-S	SOT23G-3	178.0	13.1	3.15	2.77	1.22	4.0	8.0	Q3

Package Outline Dimensions

SOT23G-3

Package Outline Dimensions

3ST(SOT23G-3-A)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	MIN	MAX	MIN	MAX
A	0.890	1.120	0.035	0.044
A1	0.000	0.100	0.000	0.004
A2	0.890	1.100	0.035	0.043
b	0.300	0.500	0.012	0.020
c	0.132	0.230	0.005	0.009
D	2.800	3.000	0.110	0.118
E	2.250	2.640	0.089	0.104
E1	1.200	1.400	0.047	0.055
e	0.950 BSC		0.037 BSC	
L	0.300	0.600	0.012	0.024
θ	0	8°	0	8°

NOTES

1. Do not include mold flash or protrusion.
2. This drawing is subject to change without notice.

Order Information

Order Number	Operating Temperature Range	Package	Marking Information	MSL	Transport Media, Quantity	Eco Plan
TPR8401-3STR-S ⁽¹⁾	-40 to 125°C	SOT23G-3	RT1	3	Tape and Reel, 3000	Green
TPR8402-3STR-S	-40 to 125°C	SOT23G-3	RT2	3	Tape and Reel, 3000	Green

(1) Reflow process is validated for order number with "-S" suffix.

Green: 3PEAK defines "Green" to mean RoHS compatible and free of halogen substances.

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