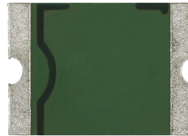


# PTSA1812

## Automotive SMD PTC fuses



### Product features

- AEC-Q200 qualified
- Positive temperature coefficient (PTC)
- Surface mount resettable fuse
- Compact 1812 (4532 metric) footprint
- Low resistance
- Fast time-to-trip
- Current rating from 0.10 A to 2.60 A
- Voltage rating from 16 V to 60 V

### Applications

- Infotainment
- In-vehicle navigation
- Telematics
- Car lighting
- Power window and seat control
- Instrument clusters
- PCB trace protection

### Environmental compliance



### Part number system/ordering:

#### **PTSA181260V010**

- PT= PTC resettable fuse
- S= Surface mount
- A= Automotive
- 1812= Dimension code
- 60V= Maximum voltage
- 010= Ihold current rating (010= 0.10 A)

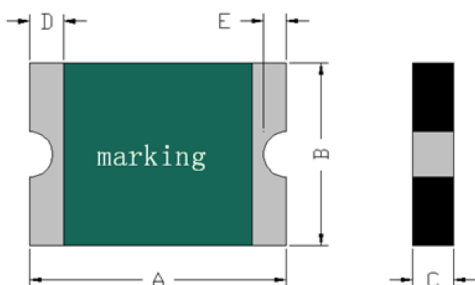
**Product specifications**

Part number	V <sub>max</sub> <sup>1</sup>	I <sub>max</sub> <sup>2</sup>	I <sub>hold</sub> <sup>3</sup>	I <sub>trip</sub> <sup>4</sup>	P <sub>d</sub> <sup>5</sup>	Time-to-trip (maximum)		Resistance <sup>6</sup>		Part marking
	(V <sub>dc</sub> )	(A)	(A)	(A)	typical (W)	(A)	(seconds)	Initial (R <sub>i</sub> ) minimum (Ω)	Post trip (R <sub>p</sub> ) maximum (Ω)	
PTSA181260V010	60	10	0.10	0.3	1.0	1.5	0.15	0.70	15.0	W010
PTSA181260V014	60	10	0.14	0.34	1.0	1.5	0.30	0.65	6.00	W014
PTSA181230V020	30	10	0.20	0.4	1.0	6.0	0.02	0.60	5.00	W020
PTSA181230V030	30	40	0.30	0.6	1.0	8.0	0.15	0.20	1.75	W030
PTSA181224V050	24	50	0.50	1.0	1.0	8.0	0.15	0.10	1.00	W050
PTSA181233V075	33	100	0.75	1.5	1.0	8.0	0.30	0.07	0.48	W075
PTSA181224V110	24	40	1.10	2.2	1.0	8.0	0.30	0.04	0.26	W110
PTSA181216V150	16	40	1.50	3.0	1.0	8.0	0.50	0.03	0.12	W150
PTSA181224V150	24	40	1.50	3.0	1.0	8.0	1.50	0.03	0.12	W150
PTSA181216V200	16	40	2.00	4.0	1.0	8.0	5.00	0.02	0.085	W200
PTSA181216V260	16	40	2.60	5.2	1.0	8.0	5.00	0.015	0.07	W260

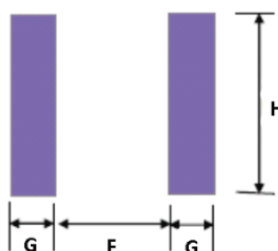
- V<sub>max</sub>: Maximum continuous voltage the device can withstand without damage at rated current
- I<sub>max</sub>: Maximum fault current the device can withstand without damage at rated voltage
- I<sub>hold</sub>: Maximum current the device will pass without interruption at +23 °C still air
- I<sub>trip</sub>: Minimum current that will transition the device from low resistance to high resistance at +23 °C still air
- P<sub>d</sub>: Power dissipated from the device when in tripped state at +23 °C still air

- R<sub>i</sub>: Minimum resistance of the device at +23 °C
- R<sub>p</sub>: Maximum resistance of the device one hour after tripping at +23 °C

**Dimensions—mm**



**Recommended pad layout**



Part number	A typ	A max	B typ	B max	C typ	C max	D min	E min	F	G	H
PTSA181260V010	4.50	4.73	3.20	3.41	0.79	1.0	0.3	0.2	3.10	1.68	3.2
PTSA181260V014	4.50	4.73	3.20	3.41	0.79	1.0	0.3	0.2	3.10	1.68	3.2
PTSA181230V020	4.50	4.73	3.20	3.41	0.79	1.0	0.3	0.2	3.10	1.68	3.2
PTSA181230V030	4.50	4.73	3.20	3.41	0.79	1.0	0.3	0.2	3.10	1.68	3.2
PTSA181224V050	4.50	4.73	3.20	3.41	0.75	1.05	0.3	0.2	3.10	1.68	3.2
PTSA181233V075	4.53	4.73	3.20	3.41	1.15	1.3	0.3	0.2	3.10	1.68	3.2
PTSA181224V110	4.50	4.73	3.20	3.41	0.79	1.3	0.3	0.2	3.10	1.68	3.2
PTSA181216V150	4.53	4.73	3.20	3.41	1.20	1.7	0.3	0.2	3.10	1.68	3.2
PTSA181224V150	4.53	4.73	3.20	3.41	1.20	1.7	0.3	0.2	3.10	1.68	3.2
PTSA181216V200	4.53	4.73	3.20	3.41	1.20	2.0	0.3	0.2	3.10	1.68	3.2
PTSA181216V260	4.53	4.83	3.20	3.41	1.20	2.0	0.3	0.2	3.10	1.68	3.2

**Thermal derating chart - Ihold (A)**

Part number	Maximum ambient temperature (°C)								
	-40	-20	0	25	40	50	60	70	85
PTSA181260V010	0.18	0.16	0.14	0.10	0.08	0.07	0.06	0.05	0.04
PTSA181260V014	0.23	0.20	0.18	0.14	0.12	0.11	0.09	0.07	0.05
PTSA181230V020	0.33	0.29	0.26	0.20	0.175	0.16	0.15	0.13	0.09
PTSA181230V030	0.49	0.44	0.39	0.30	0.27	0.24	0.22	0.18	0.14
PTSA181224V050	0.78	0.69	0.59	0.50	0.45	0.41	0.37	0.33	0.23
PTSA181233V075	1.12	1.02	0.89	0.75	0.66	0.58	0.53	0.47	0.39
PTSA181224V110	1.65	1.49	1.29	1.10	0.95	0.85	0.79	0.66	0.53
PTSA181216V150	2.28	2.05	1.85	1.50	1.26	1.14	1.05	0.92	0.73
PTSA181224V150	2.28	2.05	1.85	1.50	1.26	1.14	1.05	0.92	0.73
PTSA181216V200	2.90	2.61	2.40	2.00	1.70	1.51	1.41	1.21	0.95
PTSA181216V260	3.80	3.51	3.12	2.60	2.28	2.10	1.85	1.61	1.29

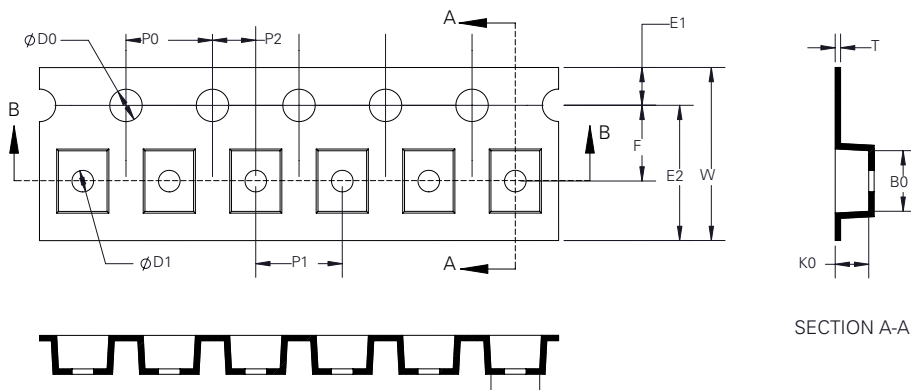
**General specifications**

Operating temperature: -40 °C to +85 °C (with derating)
Storage temperature: -10 °C to +40 °C
Storage relative humidity: ≤70%
Storage condition: Keep away from corrosive atmosphere and sunlight
Passive aging: IEC60738-1, +60 °C, 1000 hours, ≤ 20% IEC60738-1, +85 °C, 1000 hours, ≤ 20%
Humidity aging: +85 °C, 85% RH, 100 hours, ≤ 20%
Thermal shock: IEC60738-1, +85 °C/ -40 °C, 20 cycles, ≤ 50%
Trip cycle life: UL1434, Vmax, Imax, 100 cycles, no arcing or burning
Trip endurance: UL1434, Vmax, Itrip ≤ I ≤ Imax, 2 hours, no arcing or burning
MSL test: J-STD-020, MSL=1, pass and no visible damage

**Packaging information**

PTSA181260V010, PTSA181260V014, PTSA181230V020, PTSA181230V030, PTSA181224V050, PTSA181224V110  
Supplied in tape and reel packaging, 2000 parts per 7.0" (178 mm) diameter reel (EIA-481 compliant)

PTSA181233V075, PTSA181224V150, PTSA181216V150, PTSA181216V200, PTSA181216V260  
Supplied in tape and reel packaging, 1000 parts per 7.0" (178 mm) diameter reel (EIA-481 compliant)



SECTION A-A

PTSA181260V010, PTSA181260V014, PTSA181230V020, PTSA181230V030, PTSA181224V050

W	F	E1	E2	P0	P1	P2	D0	D1	A0	B0	K0	T
12.00 ± 0.30	5.50 ± 0.10	1.75 ± 0.10	-	4.00 ± 0.10	8.00 ± 0.10	1.75 ± 0.10	1.50 + 0.10/-0	-	3.55 ± 0.10	4.90 ± 0.10	0.80 ± 0.10	0.25 ± 0.05

PTSA181233V075, PTSA181224V150, PTSA181224V110, PTSA181216V150, PTSA181216V200, PTSA181216V260

W	F	E1	E2	P0	P1	P2	D0	D1	A0	B0	K0	T
12.00 ± 0.30	5.50 ± 0.10	1.75 ± 0.10	-	4.00 ± 0.10	8.00 ± 0.10	1.75 ± 0.10	1.50 + 0.10/-0	-	3.66 ± 0.10	4.95 ± 0.10	1.85 ± 0.10	0.24 ± 0.05