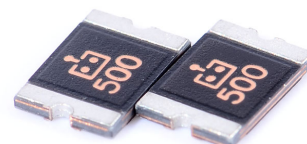
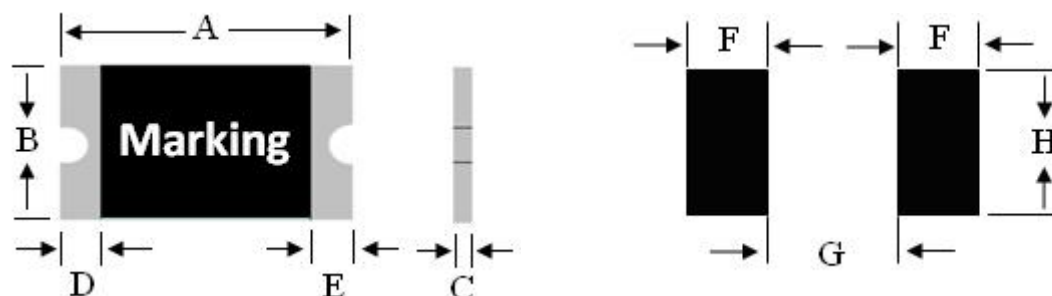


Features :

- ∞ RoHS Compliant & Halogen Free
- ∞ Faster tripping, 1812 Dimension, Surface mountable, Solid state
- ∞ Operating Current: 1.9A~9.0A
- ∞ Maximum Voltage: 6V/12V
- ∞ Operating Temperature : -40°C~ 85°C
- ∞ Certification: CSA , TUV



Product Dimensions (mm)



Model	Marking	A		B		C		D	E
		Min	Max	Min	Max	Min	Max	Min	Min
WDS1812-190L	190L	4.37	4.73	3.07	3.41	0.30	0.70	0.30	0.15
WDS1812-190L-12	190L	4.37	4.73	3.07	3.41	0.30	0.70	0.30	0.15
WDS1812-260L	260L	4.37	4.73	3.07	3.41	0.40	1.00	0.30	0.15
WDS1812-260L-12	260L	4.37	4.73	3.07	3.41	0.40	1.00	0.30	0.15
WDS1812-300L	300L	4.37	4.73	3.07	3.41	0.40	1.00	0.30	0.15
WDS1812-300L-12	300L	4.37	4.73	3.07	3.41	0.40	1.00	0.30	0.15
WDS1812-350L	350L	4.37	4.73	3.07	3.41	0.40	1.20	0.30	0.15
WDS1812-350L-12	350L	4.37	4.73	3.07	3.41	0.40	1.20	0.30	0.15
WDS1812-400L	400L	4.37	4.73	3.07	3.41	0.40	1.20	0.30	0.15
WDS1812-400L-12	400L	4.37	4.73	3.07	3.41	0.40	1.20	0.30	0.15
WDS1812-450L	450L	4.37	4.73	3.07	3.41	0.4	1.40	0.3	0.15
WDS1812-450L-12	450L	4.37	4.73	3.07	3.41	0.4	1.40	0.3	0.15
WDS1812-500L	500L	4.37	4.73	3.07	3.41	0.5	1.40	0.3	0.15

WDS1812-xxxL Series

Model	Marking								
		Min	Max	Min	Max	Min	Max	Min	Min
WDS1812-500L-12	500L	4.37	4.73	3.07	3.41	0.5	1.40	0.3	0.15
WDS1812-550L	550L	4.37	4.73	3.07	3.41	0.5	1.40	0.3	0.15
WDS1812-550L-12	550L	4.37	4.73	3.07	3.41	0.5	1.40	0.3	0.15
WDS1812-600L	600L	4.37	4.73	3.07	3.41	0.6	1.60	0.3	0.15
WDS1812-600L-12	600L	4.37	4.73	3.07	3.41	0.6	1.60	0.3	0.15
WDS1812-650L	650L	4.37	4.73	3.07	3.41	0.6	1.60	0.3	0.15
WDS1812-650L-12	650L	4.37	4.73	3.07	3.41	0.6	1.60	0.3	0.15
WDS1812-700L	700L	4.37	4.73	3.07	3.41	0.6	1.60	0.3	0.15
WDS1812-700L-12	700L	4.37	4.73	3.07	3.41	0.6	1.60	0.3	0.15
WDS1812-750L	750L	4.37	4.73	3.07	3.41	0.6	1.60	0.3	0.15
WDS1812-750L-12	750L	4.37	4.73	3.07	3.41	0.6	1.60	0.3	0.15
WDS1812-800L	800L	4.37	4.73	3.07	3.41	0.6	1.60	0.3	0.15
WDS1812-800L-12	800L	4.37	4.73	3.07	3.41	0.6	1.60	0.3	0.15
WDS1812-850L	850L	4.37	4.73	3.07	3.41	0.6	1.60	0.3	0.15
WDS1812-850L-12	850L	4.37	4.73	3.07	3.41	0.6	1.60	0.3	0.15
WDS1812-900L	900L	4.37	4.73	3.07	3.41	0.6	1.60	0.3	0.15
WDS1812-900L-12	900L	4.37	4.73	3.07	3.41	0.6	1.60	0.3	0.15

Recommended Solder Pad Layout Dimensions (mm)

Device	F	G	H
	Normal Value	Normal Value	Normal Value
WDS1812-xxxL Series	1.78	3.45	3.15

Electrical Characteristics

Model	V _{MAX} (V)	I _{MAX} (A)	I _H (A)	I _T (A)	P _D (W)	Maximum Time-to-Trip		Resistance	
						Current	Time	R _{iMIN}	R _{lMAX}
						(A)	(Sec)	(Ω)	(Ω)
WDS1812-190L	6.0	50.0	1.9	3.8	1.5	8.0	5.0	0.003	0.025
WDS1812-190L-12	12.0	50.0	1.9	3.8	1.5	8.0	5.0	0.003	0.025
WDS1812-260L	6.0	50.0	2.6	5.2	1.5	8.0	5.0	0.003	0.024
WDS1812-260L-12	12.0	50.0	2.6	5.2	1.5	8.0	5.0	0.003	0.024
WDS1812-300L	6.0	50.0	3.0	6.0	1.5	15.0	2.0	0.003	0.022
WDS1812-300L-12	12.0	50.0	3.0	6.0	1.5	15.0	2.0	0.003	0.022
WDS1812-350L	6.0	50.0	3.5	7.0	1.5	17.5	2.0	0.003	0.02

WDS1812-xxxL Series

WDS1812-350L-12	12.0	50.0	3.5	7.0	1.5	17.5	2.0	0.003	0.02
WDS1812-400L	6.0	50.0	4.0	8.0	1.8	20.0	2.0	0.003	0.018
WDS1812-400L-12	12.0	50.0	4.0	8.0	1.8	20.0	2.0	0.003	0.018
WDS1812-450L	6.0	50.0	4.5	9.0	1.8	22.5	2.0	0.003	0.016
WDS1812-450L-12	12.0	50.0	4.5	9.0	1.8	22.5	2.0	0.003	0.016
WDS1812-500L	6.0	50.0	5.0	10.0	1.8	25.0	2.0	0.003	0.014
WDS1812-500L-12	12.0	50.0	5.0	10.0	1.8	25.0	2.0	0.003	0.014
WDS1812-550L	6.0	50.0	5.5	11.0	1.8	27.5	2.0	0.002	0.012
WDS1812-550L-12	12.0	50.0	5.5	11.0	1.8	27.5	2.0	0.002	0.012
WDS1812-600L	6.0	50.0	6.0	12.0	1.8	30.0	2.0	0.002	0.010
WDS1812-600L-12	12.0	50.0	6.0	12.0	1.8	30.0	2.0	0.002	0.010
WDS1812-650L	6.0	50.0	6.5	13.0	1.8	32.5	2.0	0.002	0.008
WDS1812-650L-12	12.0	50.0	6.5	13.0	1.8	32.5	2.0	0.002	0.008
WDS1812-700L	6.0	50.0	7.0	14.0	2.0	35.0	2.0	0.001	0.007
WDS1812-700L-12	12.0	50.0	7.0	14.0	2.0	35.0	2.0	0.001	0.007
WDS1812-750L	6.0	50.0	7.5	15.0	2.0	37.5	2.0	0.001	0.006
WDS1812-750L-12	12.0	50.0	7.5	15.0	2.0	37.5	2.0	0.001	0.006
WDS1812-800L	6.0	50.0	8.0	16.0	2.0	40.0	2.0	0.0008	0.005
WDS1812-800L-12	12.0	50.0	8.0	16.0	2.0	40.0	2.0	0.0008	0.005
WDS1812-850L	6.0	50.0	8.5	17.0	2.2	42.5	2.0	0.0008	0.004
WDS1812-850L-12	12.0	50.0	8.5	17.0	2.2	42.5	2.0	0.0008	0.004
WDS1812-900L	6.0	50.0	9.0	18.0	2.2	45.0	2.0	0.0005	0.003
WDS1812-900L-12	12.0	50.0	9.0	18.0	2.2	45.0	2.0	0.0005	0.003

Thermal Derating Chart-I_H(A)

Model	Maximum ambient operating temperature (°C)								
	-40	-20	0	25	40	50	60	70	85
WDS1812-190L	2.76	2.47	2.22	1.90	1.63	1.46	1.31	1.18	0.95
WDS1812-190L-12	2.76	2.47	2.22	1.90	1.63	1.46	1.31	1.18	0.95
WDS1812-260L	3.78	3.38	3.04	2.60	2.23	2.00	1.79	1.61	1.30
WDS1812-260L-12	3.78	3.38	3.04	2.60	2.23	2.00	1.79	1.61	1.30
WDS1812-300L	4.35	3.90	3.51	3.00	2.58	2.31	2.07	1.86	1.50
WDS1812-300L-12	4.35	3.90	3.51	3.00	2.58	2.31	2.07	1.86	1.50
WDS1812-350L	5.08	4.55	4.10	3.50	3.01	2.70	2.42	2.17	1.75
WDS1812-350L-12	5.08	4.55	4.10	3.50	3.01	2.70	2.42	2.17	1.75
WDS1812-400L	5.80	5.20	4.68	4.00	3.44	3.08	2.76	2.48	2.00
WDS1812-400L-12	5.80	5.20	4.68	4.00	3.44	3.08	2.76	2.48	2.00
WDS1812-450L	6.54	5.85	5.26	4.50	3.86	3.46	3.10	2.79	2.25

WDS1812-450L-12	6.54	5.85	5.26	4.50	3.86	3.46	3.10	2.79	2.25
WDS1812-500L	7.26	6.50	5.84	5.00	4.29	3.84	3.45	3.11	2.50
WDS1812-500L-12	7.26	6.50	5.84	5.00	4.29	3.84	3.45	3.11	2.50
WDS1812-550L	7.99	7.15	6.43	5.50	4.72	4.23	3.79	3.42	2.75
WDS1812-550L-12	7.99	7.15	6.43	5.50	4.72	4.23	3.79	3.42	2.75
WDS1812-600L	8.72	7.80	7.01	6.00	5.15	4.61	4.14	3.73	3.00
WDS1812-600L-12	8.72	7.80	7.01	6.00	5.15	4.61	4.14	3.73	3.00
WDS1812-650L	9.44	8.45	7.59	6.50	5.58	4.99	4.48	4.04	3.25
WDS1812-650L-12	9.44	8.45	7.59	6.50	5.58	4.99	4.48	4.04	3.25
WDS1812-700L	10.17	9.10	8.18	7.00	6.01	5.38	4.83	4.35	3.50
WDS1812-700L-12	10.17	9.10	8.18	7.00	6.01	5.38	4.83	4.35	3.50
WDS1812-750L	10.89	9.75	8.76	7.50	6.44	5.76	5.18	4.66	3.75
WDS1812-750L-12	10.89	9.75	8.76	7.50	6.44	5.76	5.18	4.66	3.75
WDS1812-800L	11.62	10.40	9.34	8.00	6.87	6.15	5.52	4.97	4.00
WDS1812-800L-12	11.62	10.40	9.34	8.00	6.87	6.15	5.52	4.97	4.00
WDS1812-850L	12.34	11.05	9.93	8.50	7.30	6.53	5.87	5.28	4.25
WDS1812-850L-12	12.34	11.05	9.93	8.50	7.30	6.53	5.87	5.28	4.25
WDS1812-900L	13.07	11.70	10.51	9.00	7.73	6.92	6.21	5.59	4.50
WDS1812-900L-12	13.07	11.70	10.51	9.00	7.73	6.92	6.21	5.59	4.50

Test Procedures and Requirements

Test Item	Test Conditions	Accept/Reject Criteria
Initial Resistance	In still air at 25°C	$R_{iMIN} \leq R \leq R_{iMAX}$
Time to Trip	Specified current, V_{MAX} , 25°C	$T \leq$ Maximum Time to Trip
Holding Current	30min, at I_H , 25°C	No trip
Trip Cycle Life	V_{MAX} , I_{MAX} , 100 cycles	No arcing or burning
Trip Endurance	V_{MAX} , I_{MAX} , 1 hour	No arcing or burning

Physical Characteristics

Terminal Materials	Tin-Plated Nickle-copper
Soldering Zone	Meets EIA specification RS 186-9E and ANSI/J-STD-002 Category 3.
Moisture Sensitivity	Level 2a, per IPC/JEDEC J-STD 020C

Environmental Specifications

Test Item	Test Conditions	Resistance Change
Passive Aging	85°C, 1000 hours	±10% typical
Humidity Aging	85°C/85%RH, 100 hours	±5% typical
Thermal Shock	MIL-STD-202, Method 107G +85°C/-40°C, 20 times	-30% typical
Solvent Resistance	MIL-STD-202, Method 215	No change
Vibration	ML-STD-883C, Test Condition A	No change

Electrical Specifications

I_H =Hold current: Maximum current at which the device will not interrupt in 25°C still air.

I_T =Trip current: Minimum current at which the device from low resistance to high resistance in 25°C still air.

V_{MAX} =Maximum continuous voltage device can withstand without damage at rated current.

I_{MAX} =Maximum fault current device can withstand without damage at rated voltage.

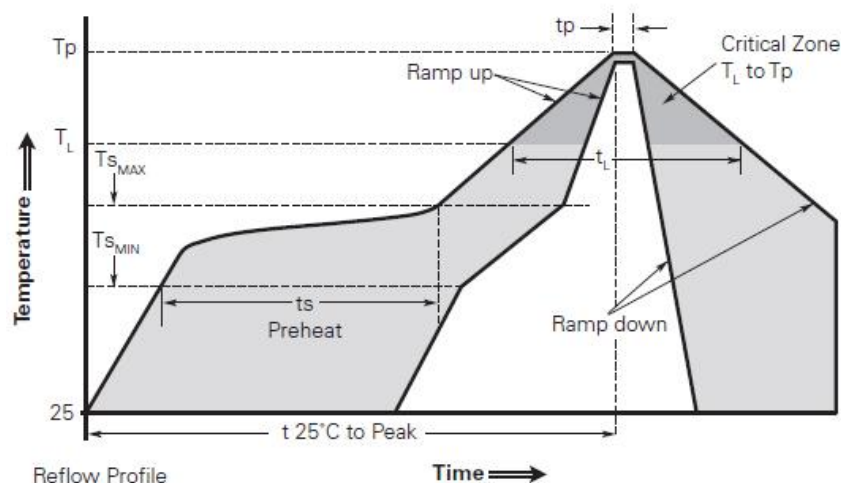
Maximum Time-to-trip: Maximum time to trip at assigned current.

P_D =Typical power dissipation: Typical amount of power dissipated from the device when in 25°C still air environment

R_{iMIN} =Minimum resistance of device at 25°C prior to tripping.

$R1_{MAX}$ = Maximum device resistance is measured one hour post reflow.

Solder Reflow Profiles



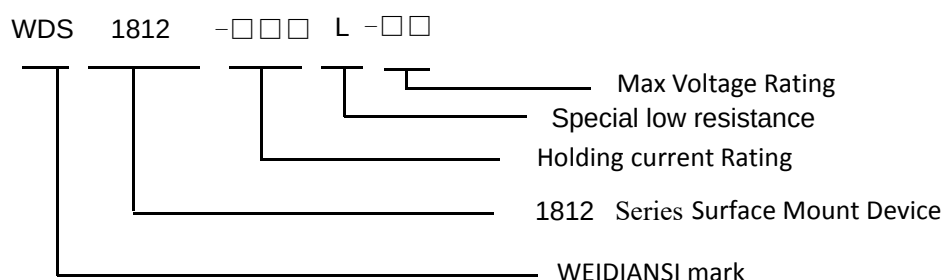
Profile Feature	Pb-Free Assembly
Average ramp up rate($T_{S_{MAX}}$ to T_p)	3°C/second max.
Preheat	
• Temperature min. ($T_{S_{MIN}}$)	150°C
• Temperature max. ($T_{S_{MAX}}$)	200°C
• Time ($T_{S_{MIN}}$ to $T_{S_{MAX}}$)	60-120 seconds
Time maintained above:	
• Temperature (T_L)	217°C
• Time (T_L)	60-150 seconds
Peak/Classification temperature (T_p)	260°C
Time within 5°C of actual peak temperature	
Time (T_p)	30 seconds max.
Ramp down rate	3°C/second max.
Time 25°C to peak temperature	8 minutes max.

- Recommended reflow methods: IR, vapor phase oven, hot air oven, N2 environment for lead-free.
- Devices are not designed to be wave soldered to the bottom side of the board.
- Recommended maximum paste thickness is 0.25mm (0.010inch).
- Devices can be cleaned using standard industry methods and solvents.

Note 1: All temperature refer to topside of the package, measured on the package body surface.

Note 2: If reflow temperature exceed the recommended profile, devices may not meet the performance requirements.

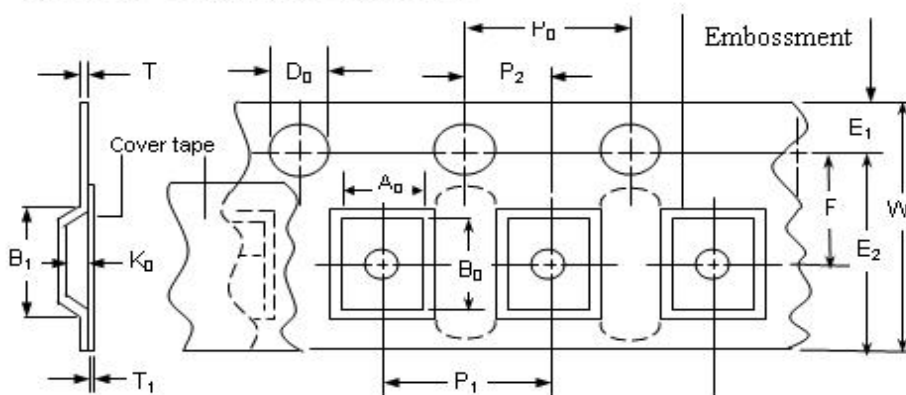
Part Numbering System



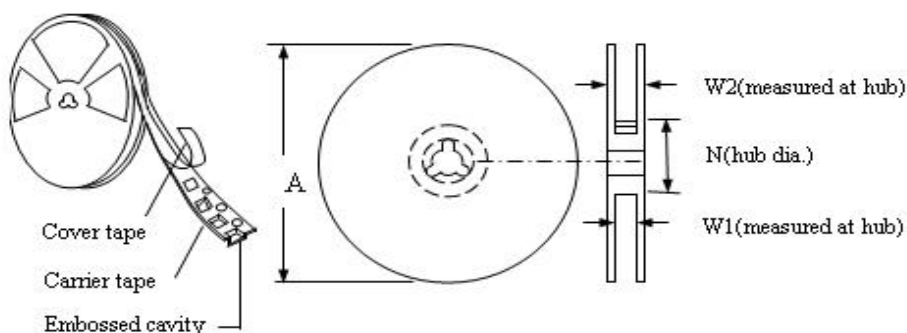
Tape Specifications and Reel Dimensions

Covering Specifications EIA 481-1	
W	$12.0 \pm 0.3/-0$
P_0	4.0 ± 0.1
P_1	8.0 ± 0.1
P_2	2.0 ± 0.1
A_0	3.5 ± 0.1
B_0	4.9 ± 0.1
D_0	$1.5 + 0.1/-0$
F	5.5 ± 0.05
E_1	1.75 ± 0.1
T	0.3 ± 0.1
Leader min.	390
Trailer min.	160
Reel Dimensions	
A	178 ± 1
N	59 ± 1
W_1	$8.5 + 1.0/-0.2$
W_2	12.0 ± 1

EIA Tape Component Dimensions



EIA Reel Dimensions



Packaging Quantity

Model	Quantity	Model	Quantity
WDS1812-190L	2000	WDS1812-550L-12	2000
WDS1812-190L-12	2000	WDS1812-600L	1500
WDS1812-260L	2000	WDS1812-600L-12	1500
WDS1812-260L-12	2000	WDS1812-650L	1500
WDS1812-300L	2000	WDS1812-650L-12	1500
WDS1812-300L-12	2000	WDS1812-700L	1500
WDS1812-350L	2000	WDS1812-700L-12	1500
WDS1812-350L-12	2000	WDS1812-750L	1500
WDS1812-400L	2000	WDS1812-750L-12	1500
WDS1812-400L-12	2000	WDS1812-800L	1500
WDS1812-450L	2000	WDS1812-800L-12	1500
WDS1812-450L-12	2000	WDS1812-850L	1500
WDS1812-500L	2000	WDS1812-850L-12	1500
WDS1812-500L-12	2000	WDS1812-900L	1500
WDS1812-550L	2000	WDS1812-900L-12	1500