

LP-ISM(L) Series

Surface-mount devices

Features

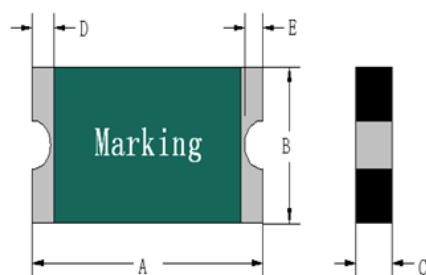
- ✧ Small size of 0805
- ✧ Fast tripping resettable circuit protection
- ✧ Surface mount packaging for automated assembly
- ✧ Agency recognition: UL、CSA、TUV



Product Dimensions

Size 2012mm/0805mils

Part number	A	B	C	D	E
	Max.	Max.	Max.	Min.	Min.
LP-ISM005	2.50	1.60	1.00	0.20	0.10
LP-ISM010	2.50	1.60	1.00	0.20	0.10
LP-ISM020	2.50	1.60	1.00	0.20	0.10
LP-ISM035	2.50	1.60	0.75	0.20	0.10
LP-ISM050	2.50	1.60	1.25	0.20	0.10
LP-ISM075	2.50	1.60	1.30	0.20	0.10
LP-ISM110	2.50	1.60	1.30	0.20	0.10
LP-ISML075	2.50	1.60	0.80	0.20	0.10
LP-ISML075/12	2.50	1.60	0.80	0.20	0.10
LP-ISML110	2.50	1.60	0.80	0.20	0.10
LP-ISML110/12	2.50	1.60	0.80	0.20	0.10
LP-ISML125	2.50	1.60	0.80	0.20	0.10
LP-ISML125/12	2.50	1.60	0.80	0.20	0.10
LP-ISML150	2.50	1.60	0.80	0.20	0.10
LP-ISML150/12	2.50	1.60	0.80	0.20	0.10
LP-ISML160	2.50	1.60	0.80	0.20	0.10
LP-ISML175	2.50	1.60	0.80	0.20	0.10
LP-ISML175/12	2.50	1.60	0.80	0.20	0.10
LP-ISML200	2.50	1.60	0.80	0.20	0.10
LP-ISML200/12	2.50	1.60	0.80	0.20	0.10
LP-ISML260	2.50	1.60	0.80	0.20	0.10
LP-ISML260/12	2.50	1.60	0.80	0.20	0.10
LP-ISML300	2.50	1.60	1.00	0.20	0.10
LP-ISML350	2.50	1.60	1.00	0.20	0.10
LP-ISML380	2.50	1.60	1.00	0.20	0.10
LP-ISML400	2.50	1.60	1.40	0.20	0.10
LP-ISML450	2.50	1.60	1.40	0.20	0.10

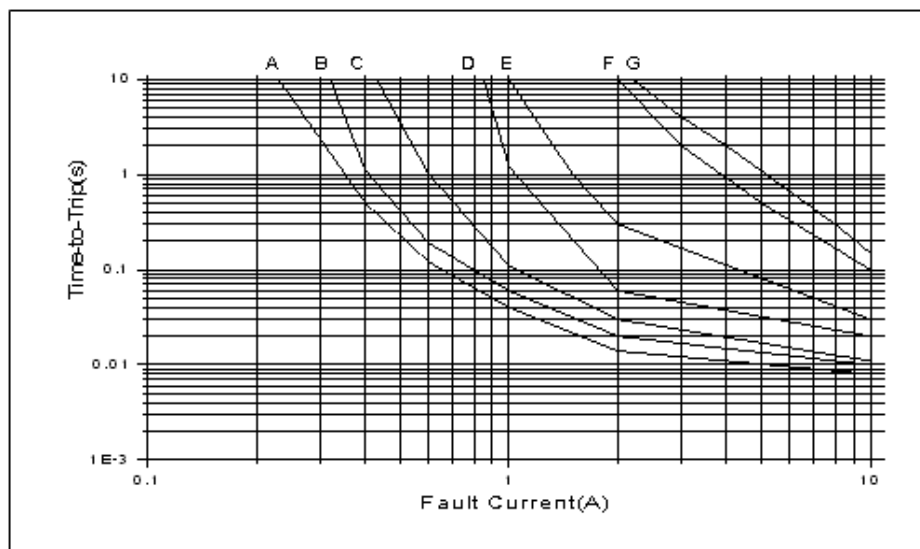


Thermal Derating Chart-IH(A)

Size 2012mm/0805mils

Part number	Maximum ambient operating temperatures(℃)									
	-40	-20	0	20	25	40	50	60	70	85
LP-ISM005	0.08	0.07	0.06	0.05	0.05	0.04	0.04	0.03	0.03	0.02
LP-ISM010	0.14	0.13	0.12	0.10	0.10	0.09	0.08	0.07	0.06	0.04
LP-ISM020	0.29	0.25	0.23	0.20	0.20	0.17	0.15	0.14	0.12	0.08
LP-ISM035	0.51	0.45	0.40	0.36	0.35	0.30	0.26	0.25	0.21	0.16
LP-ISM050	0.76	0.66	0.58	0.51	0.50	0.43	0.38	0.34	0.30	0.24
LP-ISM075	1.09	0.99	0.86	0.77	0.75	0.64	0.56	0.51	0.45	0.34
LP-ISM110	1.59	1.45	1.25	1.12	1.10	0.94	0.83	0.75	0.65	0.51
LP-ISML075	1.11	0.98	0.90	0.79	0.75	0.62	0.56	0.50	0.45	0.33
LP-ISML075/12	1.11	0.98	0.90	0.79	0.75	0.62	0.56	0.50	0.45	0.33
LP-ISML110	1.60	1.45	1.25	1.13	1.10	0.95	0.80	0.75	0.66	0.50
LP-ISML110/12	1.60	1.45	1.25	1.13	1.10	0.95	0.80	0.75	0.66	0.50
LP-ISML125	1.68	1.46	1.36	1.28	1.25	1.04	0.93	0.86	0.71	0.50
LP-ISML125/12	1.68	1.46	1.36	1.28	1.25	1.04	0.93	0.86	0.71	0.50
LP-ISML150	2.01	1.76	1.63	1.53	1.50	1.24	1.11	1.03	0.86	0.60
LP-ISML150/12	2.01	1.76	1.63	1.53	1.50	1.24	1.11	1.03	0.86	0.60
LP-ISML160	2.23	1.95	1.84	1.63	1.60	1.38	1.25	1.10	0.92	0.66
LP-ISML175	2.35	2.05	1.90	1.78	1.75	1.45	1.30	1.20	1.00	0.70
LP-ISML175/12	2.35	2.05	1.90	1.78	1.75	1.45	1.30	1.20	1.00	0.70
LP-ISML200	2.69	2.34	2.17	2.03	2.00	1.66	1.49	1.37	1.14	0.80
LP-ISML200/12	2.69	2.34	2.17	2.03	2.00	1.66	1.49	1.37	1.14	0.80
LP-ISML260	3.45	3.01	2.76	2.62	2.60	2.12	1.90	1.75	1.45	1.00
LP-ISML260/12	3.45	3.01	2.76	2.62	2.60	2.12	1.90	1.75	1.45	1.00
LP-ISML300	4.01	3.50	3.25	3.02	3.00	2.50	2.20	2.05	1.70	1.20
LP-ISML350	4.71	4.10	3.75	3.56	3.50	2.88	2.63	2.40	2.00	1.42
LP-ISML380	6.12	4.76	4.16	4.00	3.80	3.00	2.80	2.50	2.10	1.50
LP-ISML400	6.40	5.00	4.35	4.18	4.00	3.13	2.93	2.60	2.20	1.57
LP-ISML450	7.20	5.60	4.88	4.70	4.50	3.56	3.30	2.90	2.45	1.76

Typical Time-to-Trip Charts at 25°C



LP-ISM Series

A = LP-ISM005

B = LP-ISM010

C = LP-ISM020

D = LP-ISM035

E = LP-ISM050

F = LP-ISM075

G = LP-ISM110

Electrical Characteristics at 25°C

Size 2012mm/0805mil

Part number	I_H	I_T	V_{max}	I_{max}	Max.Time-to-trip		P_{dMax}	R_{min}	R_{1max}
	(A)	(A)	(V)	(A)	(A)	(S)	(W)	(Ω)	(Ω)
LP-ISM005	0.05	0.15	15	10	0.5	2.00	0.5	3.000	50.00
LP-ISM010	0.10	0.30	15	10	0.5	1.50	0.5	1.000	6.000
LP-ISM020	0.20	0.50	9	40	8.0	0.02	0.5	0.650	3.500
LP-ISM035	0.35	0.75	6	40	8.0	0.10	0.5	0.250	1.200
LP-ISM050	0.50	1.00	6	40	8.0	0.10	0.5	0.150	0.850
LP-ISM075	0.75	1.50	6	40	8.0	0.20	0.5	0.100	0.400
LP-ISM110	1.10	2.20	6	40	8.0	0.30	0.5	0.050	0.210
LP-ISML075	0.75	1.50	8	50	8.00	0.20	1	0.060	0.300
LP-ISML075/12	0.75	1.50	12	50	8.00	0.20	1	0.060	0.300
LP-ISML110	1.10	2.20	8	50	8.00	0.30	2	0.050	0.210
LP-ISML110/12	1.10	2.20	12	50	8.00	0.30	2	0.050	0.210
LP-ISML125	1.25	2.50	8	50	8.00	5.00	1.2	0.030	0.160
LP-ISML125/12	1.25	2.50	12	50	8.00	5.00	1.2	0.030	0.160
LP-ISML150	1.50	3.00	8	50	8.00	5.00	1.2	0.020	0.080
LP-ISML150/12	1.50	3.00	12	50	8.00	5.00	1.2	0.020	0.080
LP-ISML160	1.60	3.20	8	50	8.00	5.00	1.2	0.015	0.070
LP-ISML175	1.75	3.50	8	50	8.00	5.00	1.2	0.015	0.065
LP-ISML175/12	1.75	3.50	12	50	8.00	5.00	1.2	0.015	0.065
LP-ISML200	2.00	4.00	8	50	8.00	5.00	1.2	0.008	0.050
LP-ISML200/12	2.00	4.00	12	50	8.00	5.00	1.2	0.008	0.050

Part number	I_H (A)	I_T (A)	V_{max} (V)	I_{max} (A)	Max.Time-to-trip (A)	(S)	P_{dMax} (W)	R_{min} (Ω)	R_{1max} (Ω)
LP-ISML260	2.60	5.20	8	50	8.00	5.00	1.2	0.007	0.030
LP-ISML260/12	2.60	5.20	12	50	8.00	5.00	1.2	0.007	0.030
LP-ISML300	3.00	6.00	8	50	8.00	5.00	1.2	0.005	0.020
LP-ISML350	3.50	7.00	8	50	8.00	5.00	1.2	0.004	0.018
LP-ISML380	3.80	7.60	8	50	8.00	5.00	1.2	0.002	0.016
LP-ISML400	4.00	8.00	6	50	8.00	5.00	1.2	0.002	0.014
LP-ISML450	4.50	9.00	6	50	8.00	5.00	1.2	0.002	0.012

I_H =Hold current: maximum current at which the device will not trip at 25°C still air.

I_T =Trip current: minimum current at which the device will always trip at 25°C still air.

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

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

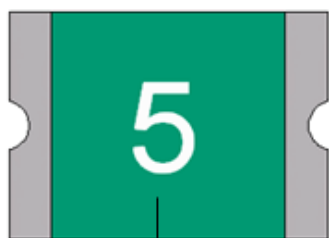
T_{trip} =Maximum time to trip at assigned current.

P_{dtyp} =Typical power dissipation: typical amount of power dissipated by the device when in state air environment.

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

R_{1max} =Maximum device resistance measured in the nontripped state 1 hour post reflow.

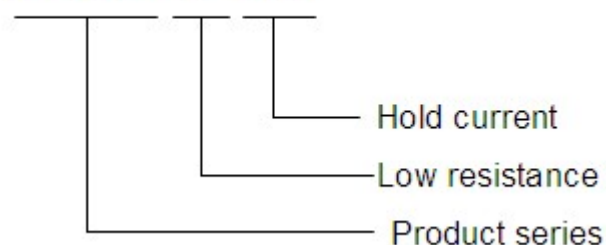
Marking System



Part identification

Part Numbering System

LP-ISM L 200



Test Procedures And Requirements

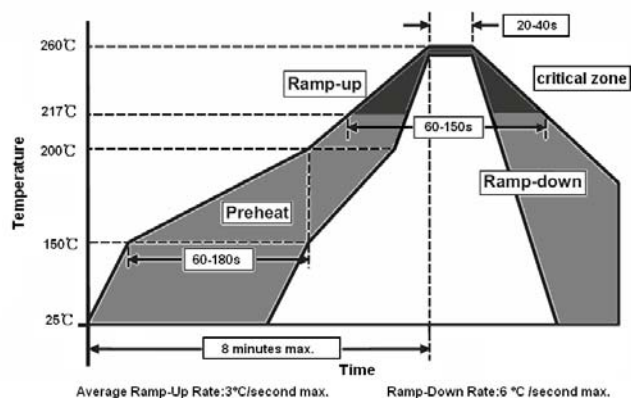
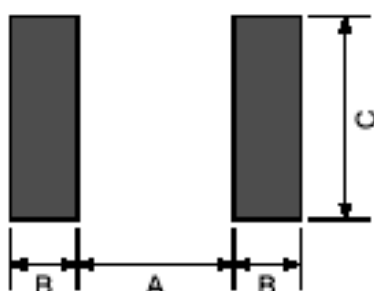
Test	Test Conditions	Accept/Reject Criteria
Resistance	In still air @ 25℃	$R_{min} \leq R \leq R_{max}$
Time to Trip	Specified current, V_{max} , 25℃	$T \leq$ maximum Time to Trip
Hold Current	30min, at I_H	No trip
Trip Cycle Life	V_{max} , I_{max} , 100cycles	No arcing or burning
Trip Endurance	V_{max} , 24hours	No arcing or burning

Packaging and Marking Information

Size 2012mm/0805mils

Part number	Tape & Reel	Tape spc	Part Marking	Recommended Pad Layout Figures[mm(In.)]						Agency Recognition
	Quantity	code		Dimension		Dimension		Dimension		
				A(Nom.)		B(Nom.)		C(Nom.)		
LP-ISM005	4000	0805B	1	1.20	(0.051)	1.00	(0.041)	1.50	(0.061)	UL,CSA,TUV
LP-ISM010	4000	0805B	0	1.20	(0.051)	1.00	(0.041)	1.50	(0.061)	UL,CSA,TUV
LP-ISM020	4000	0805B	2	1.20	(0.051)	1.00	(0.041)	1.50	(0.061)	UL,CSA,TUV
LP-ISM035	4000	0805B	3	1.20	(0.051)	1.00	(0.041)	1.50	(0.061)	UL,CSA,TUV
LP-ISM050	4000	0805B	4	1.20	(0.051)	1.00	(0.041)	1.50	(0.061)	UL,CSA,TUV
LP-ISM075	4000	0805B	5	1.20	(0.051)	1.00	(0.041)	1.50	(0.061)	UL,CSA,TUV
LP-ISM110	4000	0805B	6	1.20	(0.051)	1.00	(0.041)	1.50	(0.061)	UL,CSA,TUV
LP-ISML075	4000	0805B	5	1.20	(0.047)	1.00	(0.039)	1.50	(0.059)	UL,CSA,TUV
LP-ISML075/12	4000	0805B	5	1.20	(0.047)	1.00	(0.039)	1.50	(0.059)	UL,CSA
LP-ISML110	4000	0805B	6	1.20	(0.047)	1.00	(0.039)	1.50	(0.059)	UL,CSA,TUV
LP-ISML110/12	4000	0805B	6	1.20	(0.047)	1.00	(0.039)	1.50	(0.059)	UL,CSA
LP-ISML125	4000	0805B	7	1.20	(0.047)	1.00	(0.039)	1.50	(0.059)	UL,CSA,TUV
LP-ISML125/12	4000	0805B	7	1.20	(0.047)	1.00	(0.039)	1.50	(0.059)	UL,CSA
LP-ISML150	4000	0805B	8	1.20	(0.047)	1.00	(0.039)	1.50	(0.059)	UL,CSA,TUV
LP-ISML150/12	4000	0805B	8	1.20	(0.047)	1.00	(0.039)	1.50	(0.059)	UL,CSA
LP-ISML160	4000	0805B	16	1.20	(0.047)	1.00	(0.039)	1.50	(0.059)	UL,CSA
LP-ISML175	4000	0805B	9	1.20	(0.047)	1.00	(0.039)	1.50	(0.059)	UL,CSA,TUV
LP-ISML175/12	4000	0805B	9	1.20	(0.047)	1.00	(0.039)	1.50	(0.059)	UL,CSA
LP-ISML200	4000	0805B	10	1.20	(0.047)	1.00	(0.039)	1.50	(0.059)	UL,CSA,TUV
LP-ISML200/12	4000	0805B	10	1.20	(0.047)	1.00	(0.039)	1.50	(0.059)	UL,CSA
LP-ISML260	4000	0805B	a	1.20	(0.047)	1.00	(0.039)	1.50	(0.059)	UL,CSA,TUV
LP-ISML260/12	4000	0805B	a	1.20	(0.047)	1.00	(0.039)	1.50	(0.059)	UL,CSA
LP-ISML300	4000	0805B	b	1.20	(0.047)	1.00	(0.039)	1.50	(0.059)	UL,CSA,TUV
LP-ISML350	4000	0805B	e	1.20	(0.047)	1.00	(0.039)	1.50	(0.059)	UL,CSA,TUV
LP-ISML380	4000	0805B	f	1.20	(0.047)	1.00	(0.039)	1.50	(0.059)	UL,CSA,TUV
LP-ISML400	4000	0805B	g	1.20	(0.047)	1.00	(0.039)	1.50	(0.059)	UL,CSA,TUV
LP-ISML450	4000	0805B	h	1.20	(0.047)	1.00	(0.039)	1.50	(0.059)	UL,CSA,TUV

Solder Pad Layouts



* Recommended reflow methods: IR, Vapor phase oven, hot air oven, wave solder.

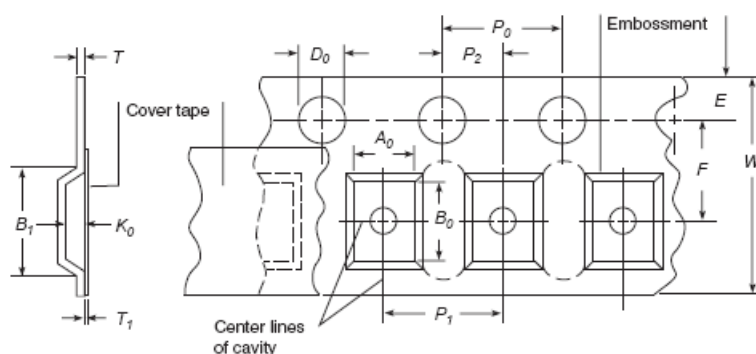
* Devices can be cleaned using standard industry methods and solvents

Notes:

If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.

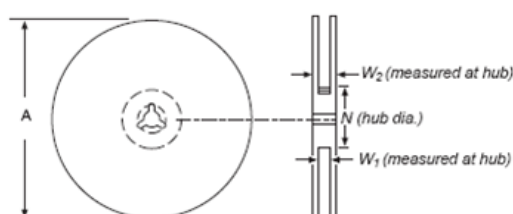
Tape Specification And Reel Dimensions

Tape spc code	W	P0	P1	P2	A	B	D	F	E	T	K
0805(B)	8.00± 0.10	4.00± 0.10	4.00± 0.10	2.00± 0.10	1.68± 0.10	2.44± 0.10	1.55± 0.05	3.50± 0.10	1.75± 0.10	0.22± 0.05	1.04± 0.10



Reel Dimensions

Tape spc code	A	N	W1	W2
0805(B)	180+0/-1.5	60+1/-0	9.0+1/-0	13.0+1/-0



Storage

The maximum ambient temperature shall not exceed 40°C. Storage temperatures higher than 40°C could result in the deformation of packaging materials. The maximum relative humidity recommended for storage is 70%. High humidity with high temperature can accelerate the oxidation of the solder plating on the termination and reduce the solderability of the components. Sealed plastic bags with desiccant shall be used to reduce the oxidation of the termination and shall only be opened prior to use. The products shall not be stored in areas where harmful gases containing sulfur or chlorine are present.

Warning:

PPTC devices are intended for protection against occasional over-current or over-temperature fault conditions, and should not be used when repeated fault conditions are anticipated. Operation beyond maximum ratings or improper use may result in device damage and possible electrical arcing and flame.

Notes:

The specification is intended to present application, product and technical data to assist the user in selecting PPTC circuit protection devices. However, users should independently evaluate and test the suitability of each product. Wayon makes no warranties as to the accuracy or completeness of the information and disclaims any liability resulting from its use. Wayon's only obligations are those in the Wayon Standard Terms and Conditions of Sale and in no case will Wayon be liable for any incidental, indirect, or consequential damages arising from the sale, resale, or misuse of its products. Wayon reserves the right to change or update, without notice, any information contained in this specification.