



Features

- Small size of 1812
- Fast tripping resettable circuit protection
- Surface mount packaging for automated assembly
- Agency recognition: UL CSA TUV

SEL-USE

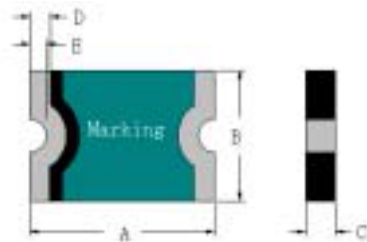


LP-MSM series

Surface-mount devices

Product Dimensions(mm)

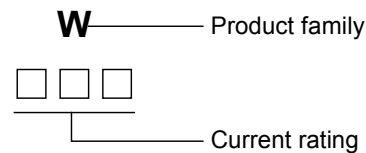
Part number	A	B	C	D	E
	Max.	Max.	Max.	Max.	Min.
LP-MSM010	4.73	3.41	0.81	0.60	0.30
LP-MSM014	4.73	3.41	0.81	0.60	0.30
LP-MSM020	4.73	3.41	0.81	0.60	0.30
LP-MSM050	4.73	3.41	0.61	0.60	0.30
LP-MSM075	4.73	3.41	0.61	0.60	0.30
LP-MSM110	4.73	3.41	0.61	0.60	0.30
LP-MSM125	4.73	3.41	1.25	0.60	0.30
LP-MSM150	4.73	3.41	1.25	0.60	0.30
LP-MSM160	4.73	3.41	1.25	0.60	0.30
LP-MSM190	11.51	5.33	0.55	0.60	0.30
LP-MSM200	4.73	3.41	1.25	0.60	0.30
LP-MSM260	4.73	3.41	2.25	0.60	0.30



Top View

Side View

Marking System



Electrical Characteristics

Part number	I_H	I_T	V_{max}	I_{max}	T_{trip}		Pd_{typ}	R_{min}	R_{1max}
	(A)	(A)	(V)	(A)	Current(A)	Time(S)	(W)	(Ohm)	(Ohm)
LP-MSM010	0.10	0.20	60	10	1.5	0.15	1.0	0.70	6.00
LP-MSM014	0.14	0.34	60	10	1.5	0.15	1.0	0.70	6.00
LP-MSM020	0.20	0.40	30	10	6.0	0.06	1.0	0.60	5.00
LP-MSM050	0.50	1.00	15	40	8.0	0.15	1.0	0.15	1.00
LP-MSM075	0.75	1.50	13.2	40	8.0	0.20	1.0	0.10	0.48
LP-MSM110	1.10	2.20	6	40	8.0	0.30	1.0	0.04	0.26
LP-MSM125	1.25	2.50	6	40	8.0	0.40	1.0	0.07	0.25
LP-MSM150	1.50	3.00	6	40	8.0	0.50	1.0	0.04	0.11
LP-MSM160	1.60	2.80	6	40	8.0	1.00	1.0	0.03	0.10
LP-MSM190	1.90	3.80	16	100	10.0	2.00	1.5	0.024	0.08
LP-MSM200	2.00	3.50	6	40	8.0	2.00	1.0	0.02	0.06
LP-MSM260	2.60	5.20	6	40	8.0	2.50	1.0	0.015	0.047

Test Procedures And Requirements

Test	Test Conditions	Accept/Reject Criteria
Resistance	In still air @ 25 C	$R_{min} < R < R_{max}$
Time to Trip	Specified current, V_{max} , 25 C	$T < \text{maximum Time to Trip}$
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

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.

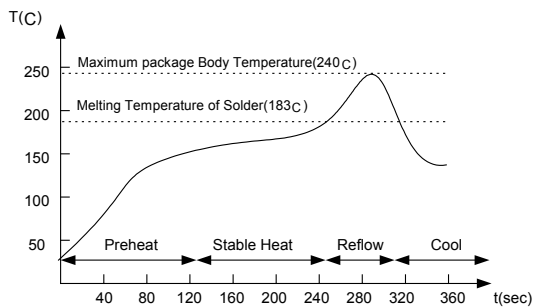
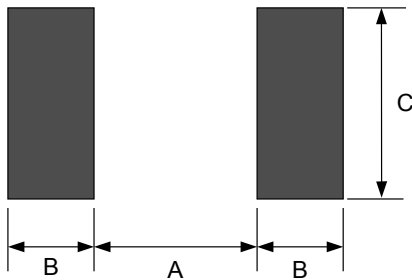
T_{trip} =Maximum time to trip at assigned current.

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.

Solder Reflow Recommendations



Solder Pad Layouts

Part number	A (mm)	B (mm)	C (mm)
LP-MSM010	3.45	1.78	3.15
LP-MSM014	3.45	1.78	3.15
LP-MSM020	3.45	1.78	3.15
LP-MSM050	3.45	1.78	3.15
LP-MSM075	3.45	1.78	3.15
LP-MSM110	3.45	1.78	3.15
LP-MSM125	3.45	1.78	3.15
LP-MSM150	3.45	1.78	3.15
LP-MSM160	3.45	1.78	3.15
LP-MSM190	9.57	1.45	4.75
LP-MSM200	3.45	1.78	3.15
LP-MSM260	3.45	1.78	3.15

* 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.

Package Information

Bulk:

LP-MSM190.....1000pcs per bag

Tape and Reel:

LP-MSM010~ LP-MSM160.....2000pcs per reel

LP-MSM200~ LP-MSM260.....1000pcs per reel