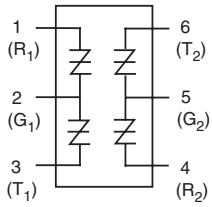
Multiport MicroCapacitance (MC) *SIDACtor*® Device

RoHS

Littelfuse



The multiport MC line protector is an integrated, multichip solution used for protecting multiple twisted pair from overvoltage conditions. It is intended for applications sensitive to load values. Typically, high speed connections require lower capacitance. C_O values for the MC devices are 40% lower than standard UC devices.

This six-pin surface mount SOIC is equivalent to four discrete DO-214AA, which makes it ideal for densely populated, high-speed line cards that cannot tolerate PCB inefficiencies nor the use of series power resistors. Surge current ratings up to 500 A are available.

SIDACtor devices enable equipment to comply with various regulatory requirements including GR 1089, ITU K.20, K.21, and K.45, IEC 60950, UL 60950, and TIA-968-A (formerly known as FCC Part 68).

Electrical Parameters

Part Number *	V_{DRM} Volts	V_S Volts	V_{DRM} Volts	V_S Volts	V_T Volts	I_{DRM} µAmps	I_S mAmps	I_T Amps	I_H mAmps
	Pins 1-2, 3-2, 4-5, 6-5		Pins 1-3, 4-6						
P0084UCMCL	6	25	12	50	4	5	800	2.2	50
P0304UCMCL	25	40	50	80	4	5	800	2.2	50
P0644UCMCL	58	77	116	154	4	5	800	2.2	150
P0724UCMCL	65	88	130	176	4	5	800	2.2	150
P0904UCMCL	75	98	150	196	4	5	800	2.2	150
P1104UCMCL	90	130	180	260	4	5	800	2.2	150
P1304UCMCL	120	160	240	320	4	5	800	2.2	150
P1504UCMCL	140	180	280	360	4	5	800	2.2	150
P1804UCMCL	170	220	340	440	4	5	800	2.2	150
P2304UCMCL	190	260	380	520	4	5	800	2.2	150
P2604UCMCL	220	300	440	600	4	5	800	2.2	150
P3104UCMCL	275	350	550	700	4	5	800	2.2	150
P3504UCMCL	320	400	640	800	4	5	800	2.2	150

* **"L" in part number indicates RoHS compliance.** For non-RoHS compliant device, delete "L" from part number.
For surge ratings, see table below.

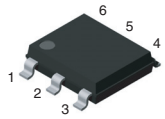
General Notes:
- All measurements are made at an ambient temperature of 25 °C. I_{PP} applies to -40 °C through +85 °C temperature range.
- I_{PP} is a repetitive surge rating and is guaranteed for the life of the product.
- Listed *SIDACtor* devices are bi-directional. All electrical parameters and surge ratings apply to forward and reverse polarities.
- V_{DRM} is measured at I_{DRM}.
- V_S is measured at 100 V/µs.
- Special voltage (V_S and V_{DRM}) and holding current (I_H) requirements are available upon request.

Surge Ratings in Amps

Series	I_{PP}									I_{TSM}	di/dt
	0.2x310 * 0.5x700 **	2x10 * 2x10 **	8x20 * 1.2x50 **	10x160 * 10x160 **	10x560 * 10x560 **	5x320 * 9x720 **	10x360 * 10x360 **	10x1000 * 10x1000 **	5x310 * 10x700 **	50 / 60 Hz	
	Amps	Amps	Amps	Amps	Amps	Amps	Amps	Amps	Amps	Amps	Amps/µs
C	50	500	400	200	150	200	175	100	200	50	500

* Current waveform in µs
** Voltage waveform in µs

Thermal Considerations

Package	Symbol	Parameter	Value	Unit
Modified MS-013 	T_J	Operating Junction Temperature Range	-40 to +150	°C
	T_S	Storage Temperature Range	-65 to +150	°C
	$R_{\theta JA}$	Thermal Resistance: Junction to Ambient63	60	°C/W

Capacitance Values

Part Number	pF Pin 1-2 / 3-2 (4-5 / 6-5) Tip-Ground, Ring-Ground		pF Pin 1-3 (4-6) Tip-Ring	
	MIN	MAX	MIN	MAX
P0084UCMCL	35	75	20	45
P0304UCMCL	25	45	10	25
P0644UCMCL	55	85	30	50
P0724UCMCL	50	75	25	45
P0904UCMCL	45	70	25	40
P1104UCMCL	45	70	25	40
P1304UCMCL	40	60	20	35
P1504UCMCL	35	55	20	35
P1804UCMCL	35	50	15	30
P2304UCMCL	30	50	15	30
P2604UCMCL	30	45	15	30
P3104UCMCL	30	45	15	25
P3504UCMCL	25	40	15	25

Note: Off-state capacitance (C_O) is measured at 1 MHz with a 2 V bias.

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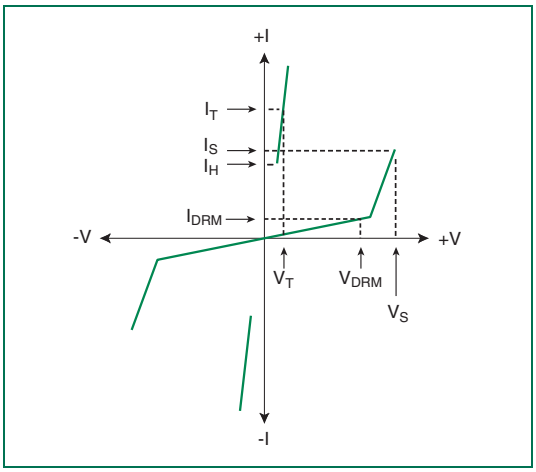
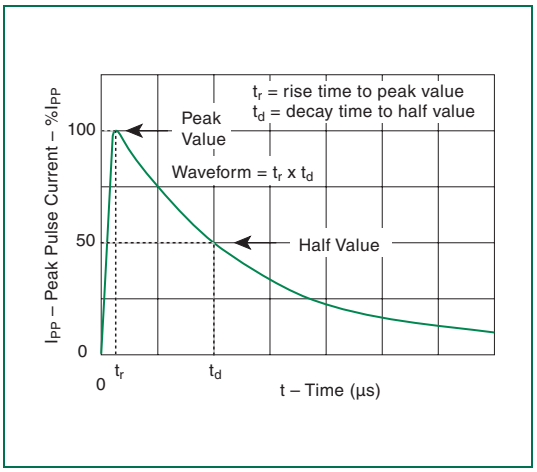
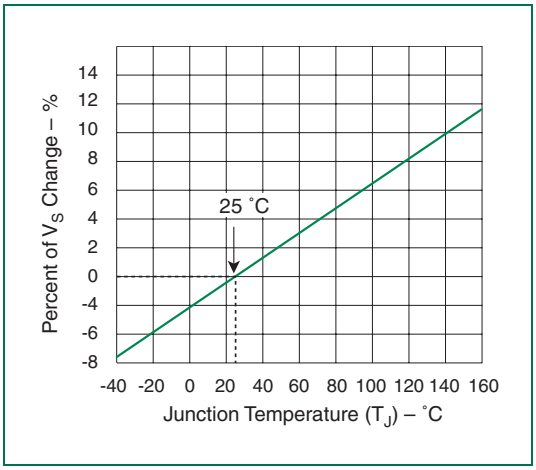


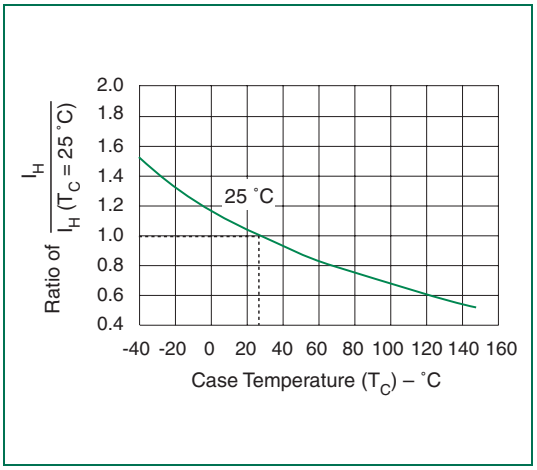
V-I Characteristics



t_r x t_d Pulse Waveform



Normalized V_S Change versus Junction Temperature



Normalized DC Holding Current versus Case Temperature