

RoHS
Compliant



Application

- All high-density boards

Features

- 2920 Dimension
- Surface mountable
- Solid state
- Faster time to trip than standard SMD devices
- UL and TUV Approved

Specifications

Operation Current : 50mA to 160mA
Maximum Operating Voltage : 240V AC/250V AC
Temperature Range : -40°C to +85°C

Electrical Characteristics (23°C)

Part Number	Hold Current	Trip Current	Max. Time to Trip		Max. Current	Max. Oper. Voltage	Max. Int. Voltage	Typ. Power	Resistance		
			Current	Time					R _{MIN}	R _{MAX}	R _{1MAX}
	I _H , A	I _T , A	A	Sec	I _{MAX} , A	V _{MAX} , V _{AC}	V _{I-MAX} , V _{AC}	P _d , W	Ω	Ω	Ω
MCFSMD005-240-2920-R	0.05	0.12	0.25	15	1	240	250	1.5	10	55	70
MCFSMD008-240-2920-R	0.08	0.19	0.4		1.2				6	16	25
MCFSMD012-240-2920-R	0.12	0.3	0.6		1.2				6	14	20
MCFSMD013-240-2920-R	0.13	0.32	0.65		1.2				2	6	12
MCFSMD016-240-2920-R	0.16	0.37	0.8		2				2	5	11

I_H=Hold current-maximum current at which the device will not trip at 23°C still air.

I_T=Trip current-minimum current at which the device will always trip at 23°C still air.

V_{MAX}=Maximum voltage device can withstand without damage at it rated current.(I MAX)

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

P_d=Typical power dissipated-type amount of power dissipated by the device when in the tripped state in 23°C still air environment.

R_{MIN}=Minimum device resistance at 23°C prior to tripping.

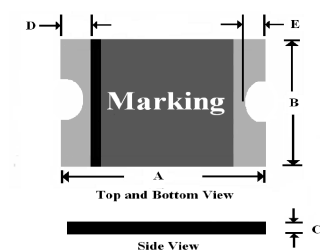
R_{MAX}=Maximum device resistance at 23°C.

R_{1MAX}=Maximum device resistance at 23°C measured 1 hour after tripping or reflow soldering of 260°C for 20 seconds.

Termination pad characteristics

Termination pad materials : Pure Tin

Product Dimensions

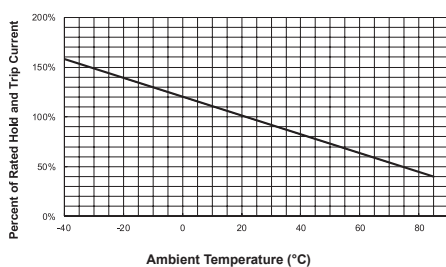


Part Number	A		B		C		D		E	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
MCFSMD005-240-2920-R	6.73	7.98	4.58	5.44	2	2.6	0.5	1.2	0.5	0.9
MCFSMD008-240-2920-R										
MCFSMD012-240-2920-R										
MCFSMD013-240-2920-R										
MCFSMD016-240-2920-R										

Dimensions : Millimetres

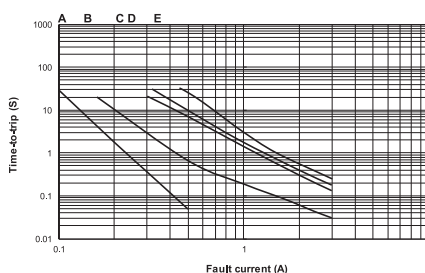
Thermal Derating Curve

MCFSMD 240V AC Series



Typical Time-To-Trip at 23°C

MCFSMD 240V AC Series



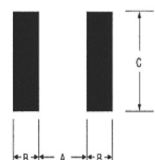
A = MCFSMD005-240-2920-R
 B = MCFSMD008-240-2920-R
 C = MCFSMD012-240-2920-R
 D = MCFSMD013-240-2920-R
 E = MCFSMD016-240-2920-R

Soldering Characteristics

Meets EIA specification RS 186-9E, ANSI/J-std-002 Category 3

Pad Layouts

Solder Reflow and Rework Recommendations



Pad Dimensions

A Nominal	B Nominal	C Nominal
5.1mm	2.3mm	5.6mm

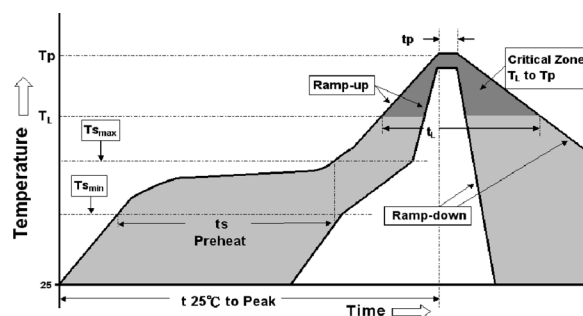
Solder Reflow

Due to "Lead Free" nature, Temperature and Dwelling time for the soldering zone is higher than those for Regular. This may cause damage to other components.

1. Recommended max past thickness > 0.25mm.
2. Devices can be cleaned using standard methods and aqueous solvent.
3. Rework use standard industry practices.
4. Storage Environment : < 30°C / 60%RH

Profile Feature	Pb-Free Assembly
Average Ramp-Up Rate (T _{smax} to T _p)	3°C/second max.
Preheat: Temperature Min (T _{smin}) Temperature Max (T _{smax}) Time (t _{smin} to t _{smax})	150°C 200°C 60-180 seconds
Time maintained above: Temperature(T _L) Time (t _L)	217°C 60-150 seconds
Peak/Classification Temperature(T _p)	260°C
Time within 5°C of actual Peak: Temperature (t _p)	20-40 seconds
Ramp-Down Rate	6°C/second max.
Time 25°C to Peak Temperature	8 minutes max.

Reflow Profile



Part Number Table

Description	Holding Current	Trip Current	Part Number
Surface Mountable PTC Resettable Fuse, 240V AC	0.05A	0.12A	MCFSMD005-240-2920-R
	0.08A	0.19A	MCFSMD008-240-2920-R
	0.12A	0.3A	MCFSMD012-240-2920-R
	0.13A	0.32A	MCFSMD013-240-2920-R
	0.16A	0.37A	MCFSMD016-240-2920-R

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