UN265 Series

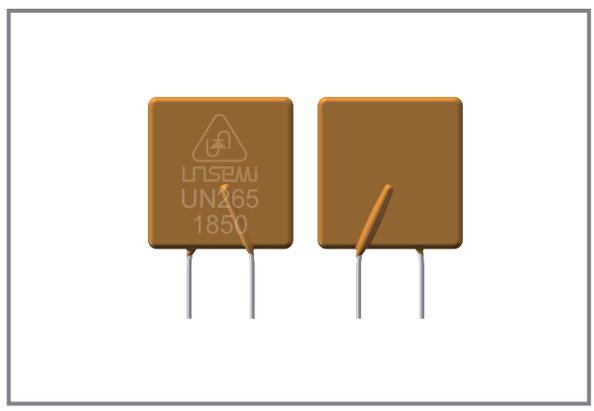
ROHS

Radial Lead Resettable Polymer PTCs

www.unsemi.com.tw

Description

UN265 Series is designed to protect against short duration high voltage fault currents (power cross or power induction surge) typically found in telecom applications (265Vrms). The series can be used to help telecom networking equipment meet the protection requirements specified in ITU K.20 and K.21.



Features

- RoHS compliant, Lead-Free and Halogen-Free
- 0.02-2.0A hold current range
- 265VAC operating voltage
- Fast time-to-trip

Applicables

- Customer Premises Equipment (CPE)
- Power ports
- Central Office (CO)/telecom centers
- LAN/WAN equipment

Electrical Parameters

Part Number	I_{hold} (A)	I_{trip} (A)	V max (Vac)	I max (A)	Pdtyp. (W)	Maximum Time To Trip		Resistance		
						Current (A)	Time (Sec.)	R min (Ω)	R max (Ω)	R 1max (Ω)
UN265-020	0.02	0.04	265	1.0	0.6	0.06	25	60.0	150	200
UN265-030	0.03	0.06	265	1.0	0.6	0.09	20	35.0	90	120
UN265-040	0.04	0.08	265	1.0	0.7	0.12	20	25.0	65	90
UN265-050	0.05	0.10	265	1.0	0.7	0.15	15	22.0	55	75
UN265-060	0.06	0.12	265	1.2	0.8	0.18	15	18.0	45	60
UN265-080	0.08	0.16	265	1.2	0.8	0.24	15	11.0	22	33
UN265-120-C	0.12	0.24	265	1.2	1.0	0.36	15	6.0	12	16
UN265-120-S	0.12	0.24	265	1.2	1.0	0.36	15	6.0	12	16
UN265-160	0.16	0.32	265	2.0	1.4	0.48	25	3.5	7.8	10.4
UN265-200-C	0.20	0.40	265	3.0	1.5	0.60	25	3.0	6.5	8.0
UN265-200-S	0.20	0.40	265	3.0	1.5	0.60	25	3.0	6.5	8.0
UN265-250	0.25	0.50	265	3.5	1.5	0.75	20	2.2	5.0	6.0
UN265-300	0.30	0.60	265	4.5	1.7	0.90	20	1.8	4.0	4.8
UN265-330	0.33	0.66	265	4.5	1.7	0.99	20	1.6	3.6	4.3
UN265-400	0.40	0.80	265	5.5	2.0	1.20	25	1.35	3.0	3.6
UN265-500	0.50	1.00	265	6.5	2.5	1.50	25	0.9	2.0	2.4
UN265-550	0.55	1.10	265	7.0	2.5	1.65	25	0.8	1.65	2.0

Electrical Parameters

UN265-600	0.600	1.200	265	6.0	2.5	1.80	25	0.75	1.50	1.80
UN265-650	0.650	1.300	265	6.5	2.6	1.95	30	0.65	1.30	1.60
UN265-750	0.750	1.500	265	7.5	2.6	2.25	30	0.55	1.10	1.30
UN265-800	0.800	1.600	265	8.0	2.7	2.40	30	0.50	1.00	1.20
UN265-900	0.900	1.800	265	9.0	2.8	2.70	35	0.45	0.90	1.10
UN265-1000-C	1.000	2.000	265	10.0	2.9	3.00	35	0.37	0.75	0.90
UN265-1000-S	1.000	2.000	265	10.0	2.9	3.00	35	0.37	0.75	0.90
UN265-1100	1.100	2.200	265	10.0	3.1	3.30	35	0.33	0.66	0.80
UN265-1250-C	1.250	2.500	265	10.0	3.3	3.75	40	0.27	0.55	0.66
UN265-1250-S	1.250	2.500	265	10.0	3.3	3.75	40	0.27	0.55	0.66
UN265-1350	1.350	2.700	265	10.0	3.5	4.05	40	0.25	0.50	0.60
UN265-1600	1.600	3.200	265	10.0	3.9	4.80	40	0.20	0.40	0.48
UN265-1850	1.850	3.700	265	10.0	4.3	5.55	50	0.165	0.33	0.40
UN265-2000	2.000	4.000	265	10.0	4.5	6.00	50	0.135	0.27	0.33

I_{hold}= Hold current: maximum current device will pass without tripping in 25°C still air.
I_{trip}= Trip current: minimum current at which the device will trip in 25°C still air.
V_{max}= Maximum voltage device can withstand without damage at rated current (Imax)
I_{max}= Maximum fault current device can withstand without damage at rated voltage (Vmax)
$P_{dtyp.}$= Power dissipated from device when in the tripped state at 25°C still air.
R_{min}= Minimum resistance of device in initial (un-soldered) state.
R_{max}= Maximum resistance of device in initial (un-soldered) state.
R_{1max}= Maximum resistance of device at 25°C measured one hour after tripping.
Caution: Operation beyond the specified rating may result in damage and possible arcing and flame.

Temperature Rerating Chart – I hold (A)

Part Number	Ambient Operation Temperature								
	-40°C	-20°C	0°C	25°C	40°C	50°C	60°C	70°C	85°C
	Hold Current (A)								
UN265-020	0.031	0.027	0.024	0.020	0.016	0.015	0.013	0.011	0.008
UN265-030	0.047	0.041	0.036	0.030	0.025	0.022	0.019	0.017	0.012
UN265-040	0.062	0.055	0.048	0.040	0.033	0.029	0.026	0.022	0.016
UN265-050	0.078	0.069	0.060	0.050	0.041	0.037	0.032	0.028	0.021
UN265-060	0.093	0.082	0.070	0.060	0.049	0.044	0.038	0.033	0.025
UN265-080	0.124	0.110	0.095	0.080	0.066	0.059	0.051	0.044	0.033
UN265-120-C	0.186	0.164	0.143	0.120	0.098	0.088	0.077	0.066	0.049
UN265-120-S	0.186	0.164	0.143	0.120	0.098	0.088	0.077	0.066	0.049
UN265-160	0.248	0.219	0.190	0.160	0.131	0.117	0.102	0.088	0.064
UN265-200-C	0.310	0.274	0.238	0.200	0.164	0.146	0.128	0.110	0.082
UN265-200-S	0.310	0.274	0.238	0.200	0.164	0.146	0.128	0.110	0.082
UN265-250	0.390	0.340	0.300	0.250	0.210	0.180	0.160	0.140	0.100
UN265-300	0.470	0.410	0.360	0.300	0.250	0.220	0.190	0.170	0.012
UN265-330	0.510	0.450	0.390	0.330	0.270	0.240	0.210	0.180	0.140

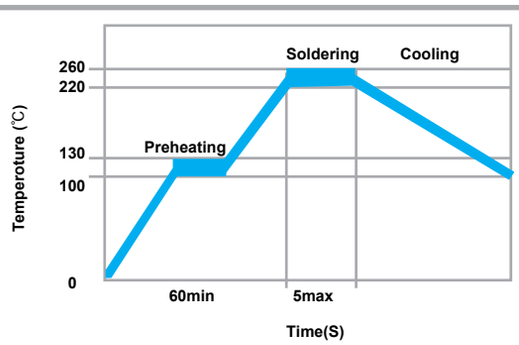
Temperature Rerating Chart – I hold (A)

UN265-400	0.620	0.550	0.480	0.400	0.330	0.290	0.260	0.220	0.160
UN265- 500	0.780	0.690	0.600	0.500	0.410	0.370	0.320	0.280	0.210
UN265- 550	0.850	0.750	0.660	0.550	0.450	0.400	0.350	0.300	0.230
UN265-600	0.930	0.820	0.710	0.600	0.490	0.440	0.380	0.330	0.250
UN265-650	1.010	0.890	0.770	0.650	0.530	0.470	0.420	0.360	0.270
UN265-750	1.160	1.030	0.890	0.750	0.620	0.550	0.480	0.410	0.310
UN265- 800	1.240	1.100	0.950	0.800	0.660	0.580	0.510	0.440	0.330
UN265- 900	1.400	1.230	1.070	0.900	0.740	0.660	0.580	0.500	0.370
UN265-1000-C	1.550	1.370	1.190	1.000	0.820	0.730	0.640	0.550	0.410
UN265-1000-S	1.550	1.370	1.190	1.000	0.820	0.730	0.640	0.550	0.410
UN265-1100	1.710	1.510	1.310	1.100	0.900	0.800	0.700	0.610	0.450
UN265-1250-C	1.940	1.710	1.490	1.250	1.030	0.910	0.800	0.690	0.510
UN265-1250-S	1.940	1.710	1.490	1.250	1.030	0.910	0.800	0.690	0.510
UN265-1350	2.090	1.850	1.610	1.350	1.110	0.990	0.860	0.740	0.550
UN265-1600	2.480	2.190	1.900	1.600	1.310	1.170	1.020	0.880	0.660
UN265-1850	2.870	2.530	2.200	1.850	1.520	1.350	1.180	1.020	0.760
UN265-2000	3.100	2.740	2.380	2.000	1.640	1.460	1.280	1.100	0.820

Test Procedures and Requirement

Test	Test Conditions	Accept/Reject Criteria
Resistance	In still air @25°C±2°C	Rmin ≤ R ≤ Rmax
Hold Current	60 min, at Ihold, In still air @25°C±2°C	No trip
Time to Trip	Specified current, 3Vmax, @25°C±2°C	T ≤ Maximum Time To Trip
Trip Cycle Life	Vmax;Imax,15min	Resistance change rate ≤ 50%
Trip Endurance	Vmax,24hours	No arcing or burning

Soldering Parameters



Pre-Heating Zone	Refer to the condition recommended by the manufacturer. Max.ramping rate should not exceed 4°C/Sec
Soldering Zone	Max.solder temperature should not exceed 260°C
Cooling Zone	Cooling by natural convection in air

Dimensions

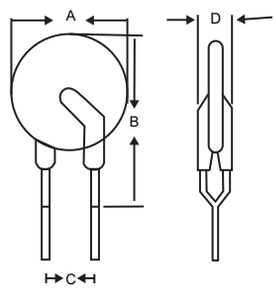


Figure1

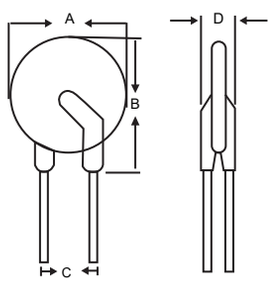


Figure2

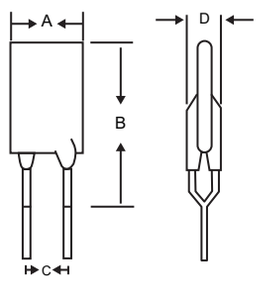


Figure3

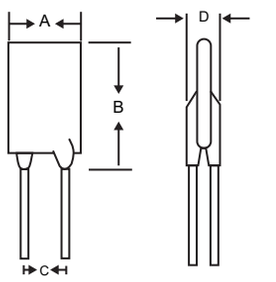


Figure4

Part Number	Figure	A	B	C	D	Lead (dia)	Packaging mm (Bulk Pack)
		mm (Max.)	mm (Max.)	mm (Typ.)	mm (Max.)	mm	
UN265-020	Figure1	6.0	8.7	5.1±0.5	4.6	0.5	1000
UN265-030	Figure1	6.0	8.7	5.1±0.5	4.6	0.5	1000
UN265-040	Figure1	6.0	9.3	5.1±0.5	4.6	0.5	1000
UN265-050	Figure1	6.0	9.3	5.1±0.5	4.6	0.5	1000
UN265-060	Figure2	6.0	10.0	5.1±0.5	4.6	0.6	1000
UN265-080	Figure1	6.0	10.0	5.1±0.5	4.6	0.6	1000
UN265-120-C	Figure1	7.2	11.2	5.1±0.5	4.6	0.6	1000
UN265-120-S	Figure3	6.5	10.5	5.1±0.5	4.6	0.6	1000
UN265-160	Figure1	9.3	12.8	5.1±0.5	4.6	0.6	1000
UN265-200-C	Figure1	10.0	13.5	5.1±0.5	4.6	0.6	1000
UN265-200-S	Figure3	9.3	12.8	5.1±0.5	4.6	0.6	1000
UN265-250	Figure3	9.3	12.8	5.1±0.5	4.6	0.6	1000
UN265-300	Figure3	9.3	14.5	5.1±0.5	4.6	0.6	1000
UN265-330	Figure3	9.3	14.5	5.1±0.5	4.6	0.6	1000
UN265-400	Figure4	10.5	16.5	5.1±0.5	4.6	0.8	1000
UN265-500	Figure4	11.8	17.5	5.1±0.5	4.6	0.8	500
UN265-550	Figure4	11.8	17.5	5.1±0.5	4.6	0.8	500
UN265-600	Figure4	11.8	17.5	5.1±0.5	4.6	0.8	500
UN265-650	Figure4	14.0	18.8	5.1±0.5	4.6	0.8	500
UN265-750	Figure4	14.5	22.2	5.1±0.5	4.6	0.8	500
UN265-800	Figure4	14.5	22.2	5.1±0.5	4.6	0.8	500
UN265-900	Figure4	16.5	24.5	10.2±0.5	4.6	0.8	200

Dimensions

UN265-1000-C	Figure1(2)	21.1	25.1	10.2±0.5	4.6	0.8	200
UN265-1000-S	Figure4	19.0	25.5	10.2±0.5	4.6	0.8	200
UN265-1100	Figure4	19.0	25.5	10.2±0.5	4.6	0.8	200
UN265-1250-C	Figure1(2)	24.2	28.2	10.2±0.5	4.6	0.8	200
UN265-1250-S	Figure4	19.0	29.0	10.2±0.5	4.6	0.8	200
UN265-1350	Figure4	19.0	29.0	10.2±0.5	4.6	0.8	200
UN265-1600	Figure4	21.5	29.0	10.2±0.5	4.6	0.8	200
UN265-1850	Figure4	25.0	29.0	10.2±0.5	4.6	0.8	100
UN265-2000	Figure4	25.0	33.5	10.2±0.5	4.6	0.8	100

Physical Specifications

Lead Material	0.02-0.04A Tin-plated Copper clad steel 0.05-2.00A Tin-plated Copper
Soldering Characteristics	Solder ability per MIL -STD-202, Method 208E
Insulating Material	Cured, flame retardant epoxy polymer meets UL 94V-0 requirements.
Device Labeling	Marked with “UN” voltage, current rating

Warning

- This product should not be used in an application where the maximum interrupt voltage or maximum interrupt current in a fault condition, Operation beyond the maximum rating or improper use may result in device damage and possible electrical arcing and flame.
- A PPTC device is not a fuse, It is a nonlinear thermistor that limits current, Because under a fault condition all PPTC devices go into a high resistance state but not open circuit hazardous voltage may be present at PPTC.
- The devices are intended for protection against occasional over-current or over-temperature fault conditions and should not be used when repeated fault conditions or prolonged trip events
- In most application, power must be removed and the fault condition cleared in order to reset a PPTC device
- PPTC devices are not recommended to be installed in applications where the device is constrained such that its PPTC properties are inhibited, for example in rigid potting materials or Add devices surface coating, Bundled devices ontology, which lack adequate clearance to accommodate device expansion.
- Contamination on of the PPTC material with certain silicone-based oils or some aggressive solvents can adversely impact the performance of the devices. For example, Organic solvents to cleaning.

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