


- | Features | Applications |
|--|---|
| <ul style="list-style-type: none"> <input type="checkbox"/> compact design saves board space <input type="checkbox"/> RoHS compliant and lead-free <input type="checkbox"/> Halogen-free <input type="checkbox"/> Fast reponse to fault current <input type="checkbox"/> Symmetrical design | <ul style="list-style-type: none"> <input type="checkbox"/> USB port protection - USB 2.0, 3.0&OTG <input type="checkbox"/> HDMI 1.4 Source protection <input type="checkbox"/> PDAs / digital cameras <input type="checkbox"/> Game console port protection <input type="checkbox"/> PC motherboards-plug and play protection |

HF RoHS REACH Pb Free

1. Electrical Characteristics

Model	I-hold	I-trip	Vmax	Imax	Pd typ	Max. Time to trip		R0 min	R1max	Agency Approval
						Current	Time			
	(A)	(A)	(Vdc)	(A)	(W)	(A)	(Sec.)	(Ohm)	(Ohm)	
DT-2018-030	0.30	0.60	60.00	40.00	1.40	1.50	3.00	0.50	2.30	×
DT-2018-050	0.50	1.00	60.00	40.00	1.40	2.50	5.00	0.20	1.00	×
DT-2018-075	0.75	1.50	33.00	40.00	1.40	8.00	0.50	0.11	0.63	×
DT-2018-075/60	0.75	1.50	60.00	40.00	1.40	8.00	0.50	0.11	0.63	×
DT-2018-100	1.00	2.00	15.00	40.00	1.40	8.00	0.50	0.06	0.36	×
DT-2018-100/33	1.00	2.00	33.00	40.00	1.40	8.00	0.50	0.06	0.36	×
DT-2018-150	1.50	3.00	15.00	40.00	1.40	8.00	1.00	0.05	0.17	×
DT-2018-150/33	1.50	3.00	33.00	40.00	1.40	8.00	1.00	0.05	0.17	×
DT-2018-200	2.00	4.00	12.00	40.00	1.40	8.00	3.00	0.03	0.10	×
DT-2018-200/16	2.00	4.00	16.00	40.00	1.40	8.00	3.00	0.03	0.10	×
DT-2018-200/24	2.00	4.00	24.00	40.00	1.40	8.00	3.00	0.03	0.10	×
DT-2018-260	2.60	5.20	24.00	40.00	1.60	8.00	5.00	0.020	0.075	×
DT-2018-300	3.00	6.00	16.00	40.00	1.60	8.00	10.00	0.015	0.050	×
DT-2018-350	3.50	7.00	12.00	40.00	1.60	8.00	10.00	0.010	0.040	×

I-hold: Holding Current: maximum current at which the device will not trip in 25°C still air.

I-trip: Tripping Current: minimum current at which the device will trip in 25°C still air.

Vmax: Maximum voltage device can withstand without damage at rated current(Imax).

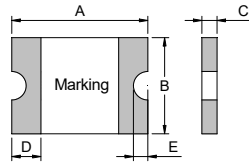
I max: Maximum fault current device can withstand without damage at rated voltage(Vmax).

Pd typ: Typical power dissipated from device when in the tripped state at 25°C still air.

R0 min: Minimum resistance of device in initial (un-soldered) state.

R1 max: Maximum resistance of device at 25°C measured one hour after tripping or reflow soldering of 260°C for 20 sec.

2.Product Dimensions(mm)&Marking



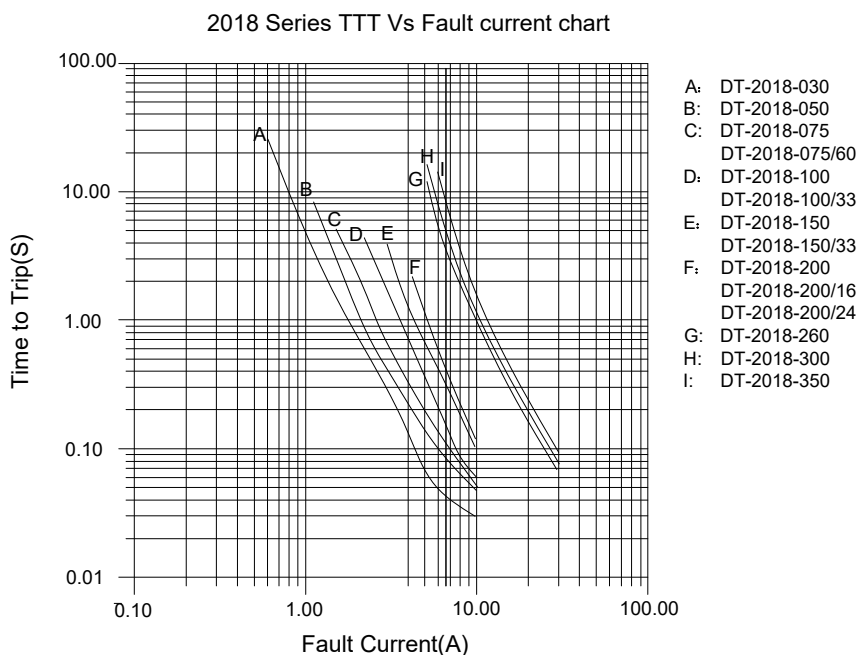
Model	A		B		C		D		E	Marking
	Min	Max	Min	Max	Min	Max	Min	Max	Min	
DT-2018-030	5.05	5.45	4.05	4.45	0.65	1.15	0.30	1.50	0.25	D 030
DT-2018-050	5.05	5.45	4.05	4.45	0.65	1.15	0.30	1.50	0.25	D 050
DT-2018-075	5.05	5.45	4.05	4.45	0.35	0.85	0.30	1.50	0.25	D 075
DT-2018-075/60	5.05	5.45	4.05	4.45	0.65	1.15	0.30	1.50	0.25	D075 60
DT-2018-100	5.05	5.45	4.05	4.45	0.35	0.85	0.30	1.50	0.25	D 100
DT-2018-100/33	5.05	5.45	4.05	4.45	0.35	0.85	0.30	1.50	0.25	D 100
DT-2018-150	5.05	5.45	4.05	4.45	0.35	0.85	0.30	1.50	0.25	D 150
DT-2018-150/33	5.05	5.45	4.05	4.45	0.65	1.15	0.30	1.50	0.25	D150 33
DT-2018-200	5.05	5.45	4.05	4.45	0.35	0.85	0.30	1.50	0.25	D 200
DT-2018-200/16	5.05	5.45	4.05	4.45	0.35	0.85	0.30	1.50	0.25	D 200
DT-2018-200/24	5.05	5.45	4.05	4.45	0.65	1.15	0.30	1.50	0.25	D20
DT-2018-260	5.05	5.45	4.05	4.45	0.85	1.35	0.30	1.50	0.25	D 260
DT-2018-300	5.05	5.45	4.05	4.45	0.65	1.15	0.30	1.50	0.25	D 300
DT-2018-350	5.05	5.45	4.05	4.45	0.65	1.15	0.30	1.50	0.25	D 350

3.Thermal Derating Chart

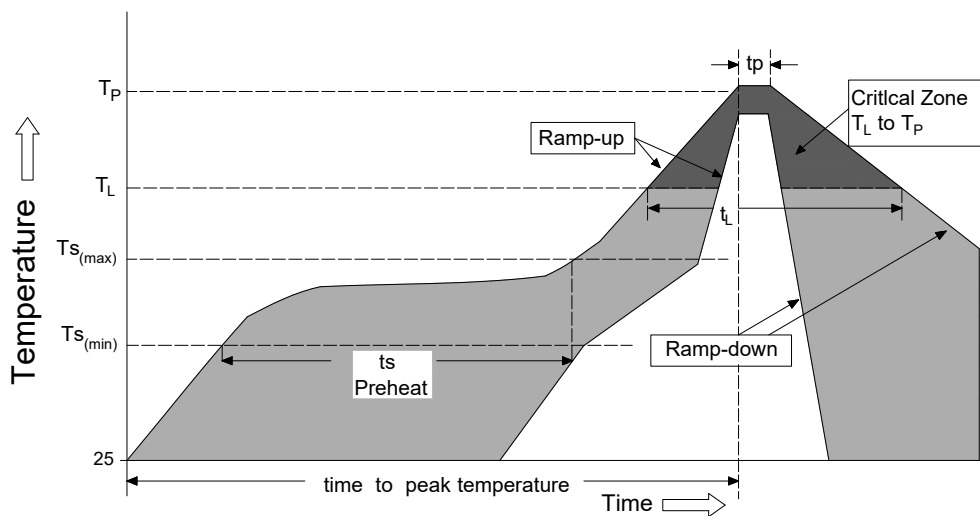
Recommended hold current(A) at ambient Temperature(°C)

Model	Ambient Operating Temperature								
	-40°C	-20°C	0°C	25°C	40°C	50°C	60°C	70°C	85°C
DT-2018-030	0.45	0.40	0.35	0.30	0.25	0.23	0.20	0.18	0.14
DT-2018-050	0.93	0.80	0.65	0.50	0.42	0.38	0.33	0.30	0.23
DT-2018-075	1.05	0.95	0.85	0.75	0.60	0.55	0.45	0.40	0.30
DT-2018-075/60	1.05	0.95	0.85	0.75	0.60	0.55	0.45	0.40	0.30
DT-2018-100	1.66	1.47	1.29	1.00	0.91	0.83	0.73	0.64	0.50
DT-2018-100/33	1.66	1.47	1.29	1.00	0.91	0.83	0.73	0.64	0.50
DT-2018-150	2.26	2.00	1.76	1.50	1.24	1.13	1.00	0.87	0.68
DT-2018-150/33	2.26	2.00	1.76	1.50	1.24	1.13	1.00	0.87	0.68
DT-2018-200	2.80	2.50	2.19	2.00	1.84	1.74	1.50	1.34	1.14
DT-2018-200/16	2.80	2.50	2.19	2.00	1.84	1.74	1.50	1.34	1.14
DT-2018-200/24	2.80	2.50	2.19	2.00	1.84	1.74	1.50	1.34	1.14
DT-2018-260	3.82	3.46	3.06	2.60	2.24	2.03	1.82	1.60	1.26
DT-2018-300	4.40	3.96	3.52	3.00	2.65	2.43	2.20	1.96	1.59
DT-2018-350	5.13	4.62	4.11	3.50	3.09	2.84	2.57	2.29	1.86

4. Typical time to trip at 25°C



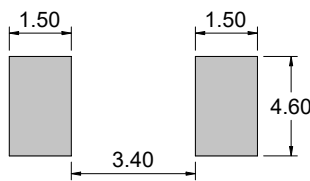
5. Soldering parameters



Profile Feature		Pb-Free Assembly
Average Ramp-Up Rate ($T_{s(max)}$ to T_P)		3°C/second max
Pre Heat:	Temperature Min ($T_{s(min)}$)	150°C
	Temperature Max ($T_{s(max)}$)	200°C
	Time (Min to Max) (t_s)	60 – 180 secs
Time Maintained Above:	Temperature (T_L)	217°C
	Temperature (t_L)	60 – 150 seconds
Peak / Classification Temperature (T_P)		260 ^{+0/-5} °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 (T_P)		8 minutes Max.

- ◆ All temperature refer to toposide of the package, measured on the package body surface
- ◆ If reflow temperature exceeds the recommended profile, devices may not meet the performance requirements
- ◆ Recommended reflow methods: IR, vapor phase oven, hot air oven, N2 environment for lead
- ◆ Recommended maximum paste thickness is 0.25mm (0.010inch)
- ◆ Devices can be cleaned using standard industry methods and solvents

6. Recommended Pad Layout(mm) & Physical Specifications



Terminal Material	Tin-Plated Nickle-Copper (Solder Material: Matte Tin (Sn))
Lead Solderability	Meets EIA Specification RS186-9E, ANSI/J-STD-002 Category 3.

7. Environmental Specifications

Operating Temperature	-40 °C to +85 °C
Maximum Device Surface Temperature in Tripped State	125°C
Passive Aging	+85 °C, 1000 hours ; ±5 % typical resistance change
Humidity Aging	+85 °C, 85 % R.H. 1000 hours; ±5 % typical resistance change
Thermal Shock	MIL-STD-202, Method 107; +85 °C to -40 °C, 20 times;-30 % typical resistance change
Solvent Resistance	MIL-STD-202, Method 215 ; No change
Vibration	MIL-STD-883, Method 2007, Condition A; No change
Moisture Sensivity Level	Level 1, J-STD-020
Storage Conditions	+40 °C Max. 70% RH Max. Packed in original packaging.

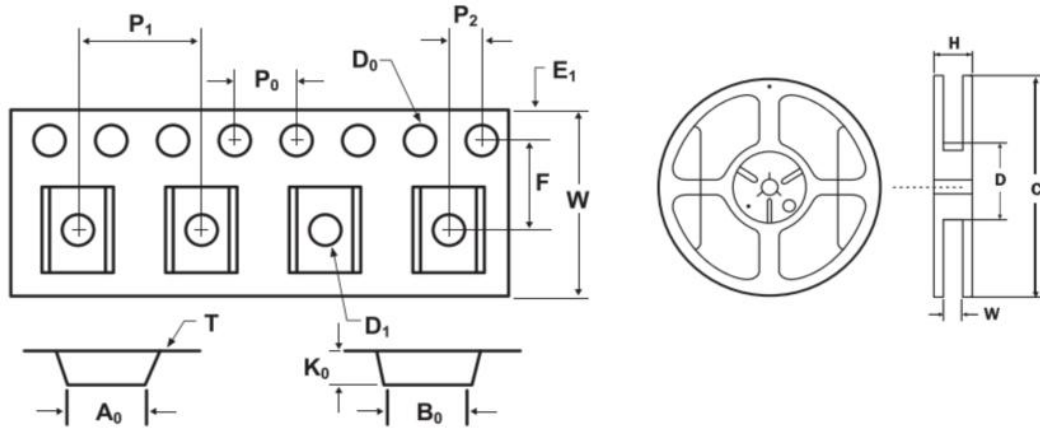
8. Test Procedures And Requirements

No.	Test	Test Conditions	Accept/Reject Criteria
1	R0 min	Resistance measurement at 25°C	$R0min \leq R \leq R1max$
2	R1 max	Resistance measurement one hour after post trip	$R0min \leq R \leq R1max$
3	I-hold	Hold rated current 1800 second without trip, @ 25°C	No trip
4	I-trip	Device must trip within 900 second under rated current, @25°C	Trip
5	Max. time to trip	At specified current, 25 °C	$T \leq \text{max. time to trip (seconds)}$
6	Trip Cycle Life	V_{max} , I_{max} , 100 cycles	No arcing or burning
7	Trip Endurance	V_{max} , I_{max} 24 hours	No arcing or burning
8	Solderability	ANSI/J-STD-002	95 % min. coverage

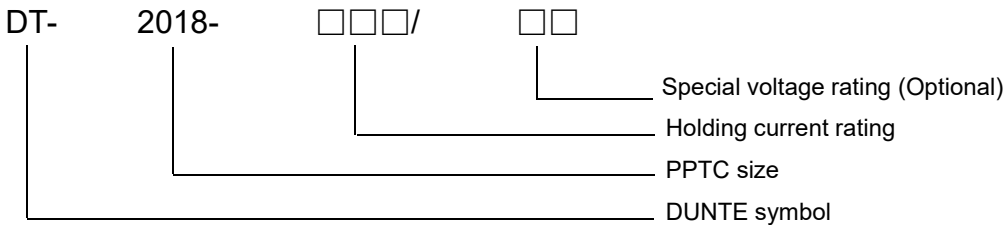
9. Tape and Reel Specifications&Packaging quantity per Reel

TAPE SPECIFICATIONS: EIA-481-1 (mm)				REEL DIMENSIONS: EIA-481-1 (mm)		
Item	DT-2018-075	DT-2018-100	DT-2018-030	DT-2018-050	C	Ø178±1.0
	DT-2018-100/33	DT-2018-150	DT-2018-075/60	DT-2018-150/33	D	Ø60.2±0.5
	DT-2018-200	DT-2018-200/16	DT-2018-200/24	DT-2018-260	W	9.0±1.5
			DT-2018-300	DT-2018-350	H	11.0±0.5
W	12.0±0.10		12.0±0.10			
F	5.50±0.05		5.50±0.05			
E1	1.75±0.10		1.75±0.10			
D0	1.55±0.05		1.55±0.05			
D1	1.50 min		1.50 min			
P0	4.0±0.10		4.0±0.10			
P1	8.0±0.10		8.0±0.10			
P2	2.0±0.05		2.0±0.05			
A0	4.61±0.10		4.61±0.10			
B0	5.62±0.10		5.62±0.10			

T	0.25±0.05	0.25±0.05
K0	0.78±0.10	1.35±0.10
Leader	390mm	390mm
Trailer	160mm	160mm
Q'ty	2500pcs/Reel	1500pcs/Reel



10. Part Ordering Number System



Warning:

- Users shall independently assess the suitability of these devices for each of their applications
- Operation of these devices beyond the stated maximum ratings could result in damage to the devices and lead to electrical arcing and/or fire
- These devices are intended to protect against the effects of temporary over-current or over-temperature conditions and are not intended to perform as protective devices where such conditions are expected to be repetitive or prolonged in duration
- Exposure to silicon-based oils, solvents, electrolytes, acids, and similar materials can adversely affect the performance of these PPTC devices
- These devices undergo thermal expansion under fault conditions, and thus shall be provided with adequate space and be protected against mechanical stresses
- Circuits with inductance may generate a voltage ($L di/dt$) above the rated voltage of the PPTC device.