

# TS3



**CANTHERM**

*Supplying high-quality bimetal and thermal sensor products.*

**Thermal Sensors  
(NTC) MOXIE®**



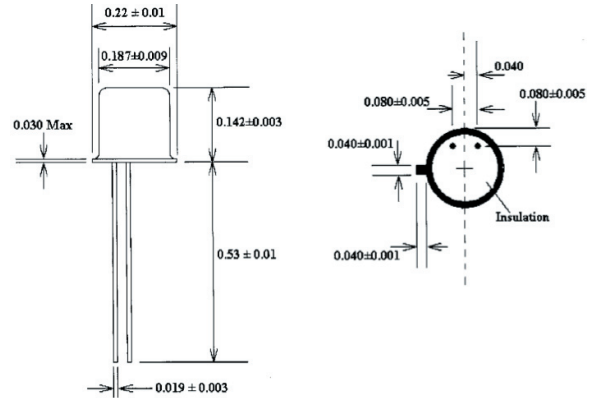
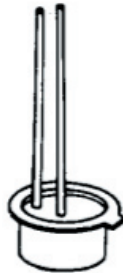
**Thermal Sensors MOXIE (NTC)** are a family of variable resistance thermal sensors having a highly specific 'transition region.' Within this transition region the devices typically exhibit a negative temperature coefficient ranging from 40% per °C to 200% per °C. Below the transition region they exhibit a linear "thermistor" characteristic of -2 to -4%/°C.

**Applications:** Sensors for temperature protection, control and limiting. Voltage, current and frequency limiters in electronics.

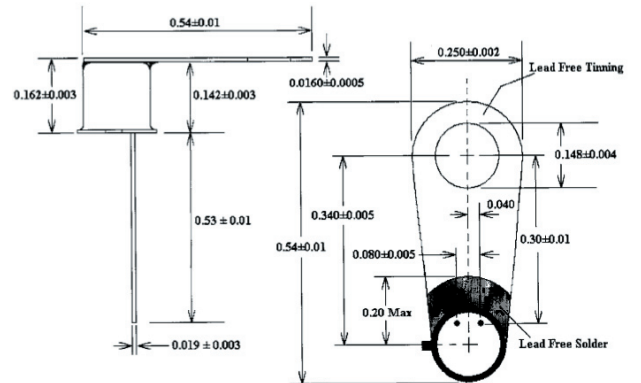
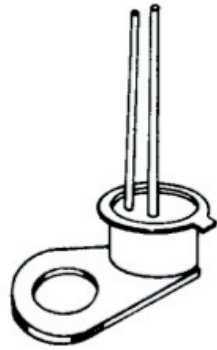
**Examples:** Overtemperature protector for power semi-conductors, such as transistors, power output stages, amplifiers.



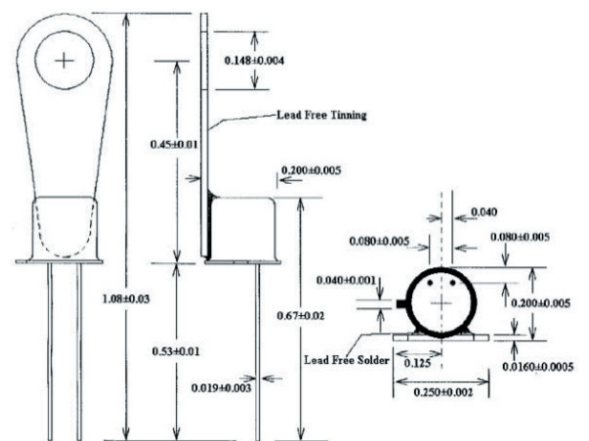
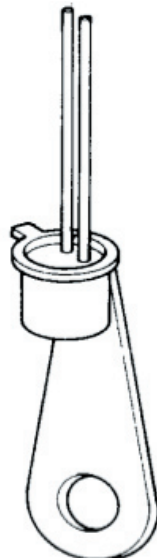
## — Dimensions (mm)



**TS3**



**TS3 B3**



**TS3 C3**

## Specifications

Type	Parameter	Temp, (°C)	Condition	Min.	Typ.	Max.	Units
TS3-57	Resistance	35	Heating	35	85	230	kΩ
	Resistance	57	Heating		1.0		kΩ
	Resistance	75	Heating	15	45	100	Ω
	Sensitivity <sup>1</sup>	57	Heating	40	100		% / °C
	Latching Current <sup>2</sup>	–	D.C. Volts	0.6	1.8	3.2	mA
TS3-60	Resistance	35	Heating	50	130	350	kΩ
	Resistance	60	Heating		5.0		kΩ
	Resistance	75	Heating	15	75	250	Ω
	Sensitivity <sup>1</sup>	60	Heating	40	100		% / °C
	Latching Current <sup>2</sup>	–	D.C. Volts	0.6	1.6	2.8	mA
TS3-65	Resistance	40	Heating	120	620	1700	kΩ
	Resistance	65	Heating		5.0		kΩ
	Resistance	80	Heating	10	50	100	Ω
	Sensitivity <sup>1</sup>	65	Heating	80	200		% / °C
	Latching Current <sup>2</sup>	–	D.C. Volts	0.14	0.33	0.52	mA
TS3-75	Resistance	55	Heating	40	80	300	kΩ
	Resistance	75	Heating		3.0		kΩ
	Resistance	95	Heating	20	115	200	Ω
	Sensitivity <sup>1</sup>	75	Heating	50	70		% / °C
	Latching Current <sup>2</sup>	–	D.C. Volts	0.7	1.9	3.1	mA
TS3-85	Resistance	65	Heating	25	45	180	kΩ
	Resistance	85	Heating		1.5		kΩ
	Resistance	100	Heating	75	150	330	Ω
	Sensitivity <sup>1</sup>	85	Heating	30	40		% / °C
	Latching Current <sup>2</sup>	–	D.C. Volts	1.4	2.0	2.6	mA

<sup>1</sup> Sensitivity is defined as the percentage of resistance change per variation of 1°C in temperature.

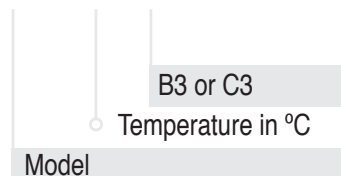
<sup>2</sup> Latching current is the smallest current that will cause the device to make changes in resistance while it's cooling to a lower temp.

Typical Characteristics	TS3-XX	TS3-XXB3
Thermal Resistance(°C/W)		
- Die to tab (or casing)	250	300
- Tab (or case) to air	200	200
Time Constant (sec)		
- Air to tab (or casing)	60	60
- Tab (or case) to die	2.0	2.5
Shunt Capacitance (pF)		
- Lead to lead	0.5	0.5
- Lead to tab (or casing)	0.2	0.2
Dielectric Withstanding (V dc)		
- Lead to tab (or casing)	600	600
Storage Temp. (°C)	120	120
Solder Temp.		
(1/16" from case, 10 sec)	260	260

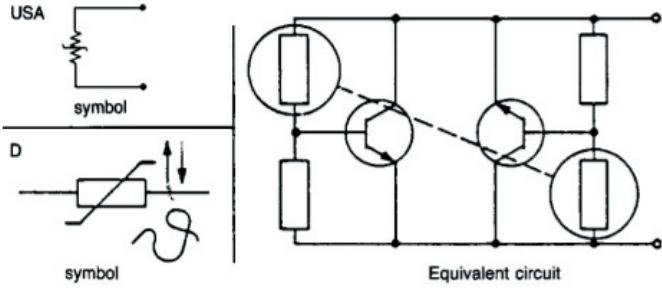
Typical Response Characteristics	TS3-57	T	TS3-65	TS3-75	TS3-85
Temp.Coef. (%/°C)					
Pre-Transition	-2.0	-2.5	-4.0	-3.5	-3.0
Transition	-100	-100	-200	-70	-40
Post-Transition	-0.25	-0.25	-0.5	-1.0	-1.5

## Ordering

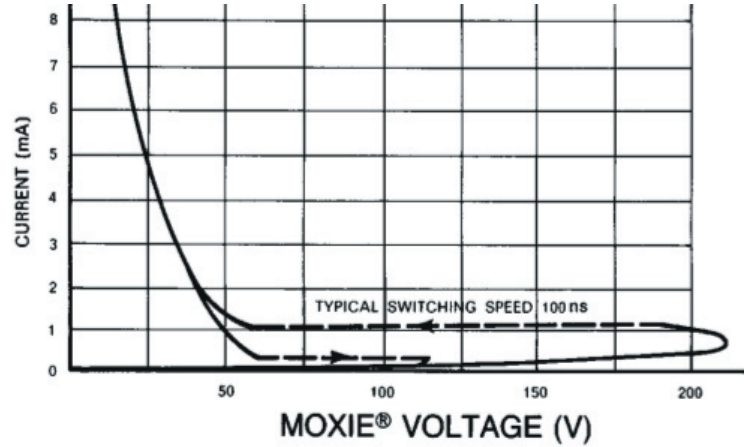
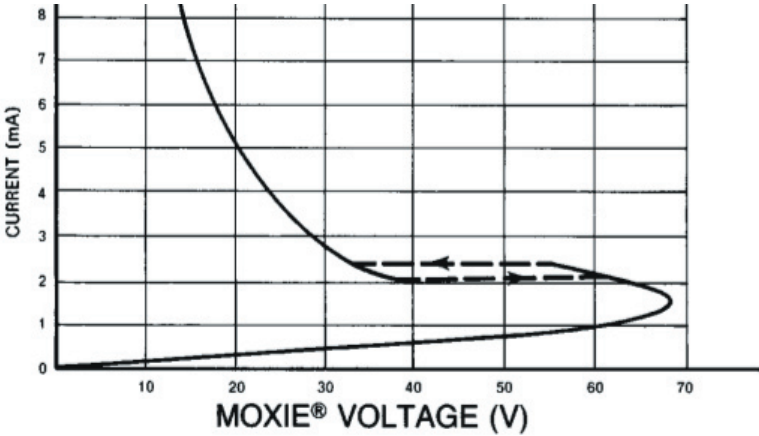
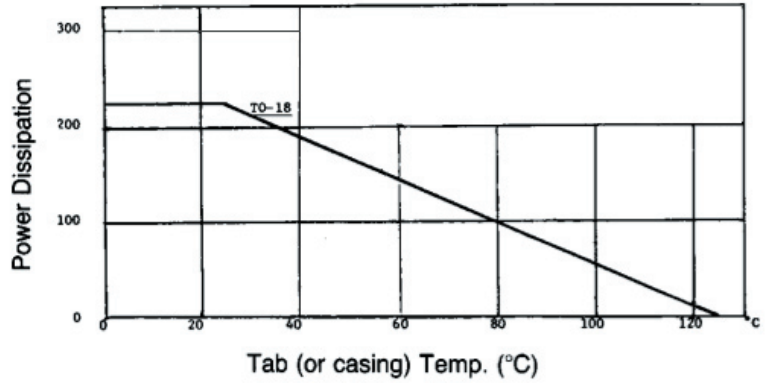
### TS3 XX Mounting Tab



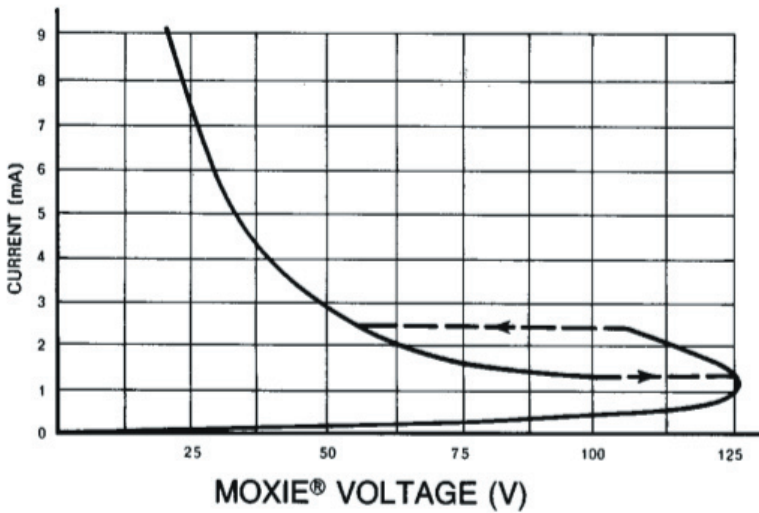
# Equivalent Circuit



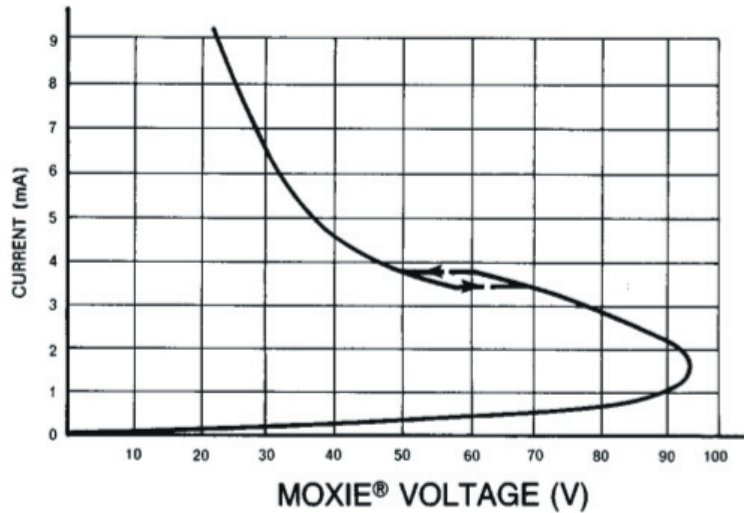
# Power Derating Curves in Free Air



## TS3-75



## TS3-85



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