Applications

- Overcurrent protection
- Short circuit protection

Features

- Lead-free terminals
- Manufacturer's logo and type designation stamped on in black or red for T_{ref} = 80 °C and for T_{ref} = 120 °C and 130 °C stamped on in white
- Short response times
- UL approval for T_{ref} = 130 °C to UL 1434 with V_{max} = 220 V and V_R = 220 V (file number E69802)
- UL approval for T_{ref} = 120 °C to UL 1434 with V_{max} = 230 V and V_R = 220 V (file number E69802)
- UL approval for T_{ref} = 80 °C to UL 1434 with V_{max} = 165 V and V_R = 145 V (file number E69802)
- VDE approval (license number 104843 E)
- RoHS-compatible

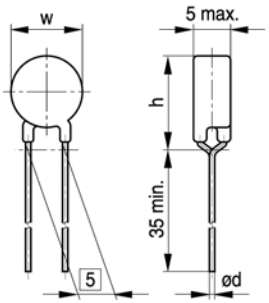
Options

- Leadless disks and leaded disks without coating available on request
- Thermistors with diameter w ≤11.0 mm are also available on tape (to IEC 60286-2)

Delivery mode

- Cardboard strips (standard)
- Cardboard tape reeled or in Ammo pack on request

Dimensional drawing



TPT0648-4

Dimensions (mm)

Type	T_{ref} °C	w_{max}	h_{max}	∅d
C810	130	22.0	25.5	0.8
C830	80	22.0	25.5	0.6
C830	120	22.0	25.5	0.6
C830	130	17.5	21.0	0.8
C840	80	17.5	21.0	0.6
C840	120	17.5	21.0	0.6
C840	130	13.5	17.0	0.6
C850	80	13.5	17.0	0.6
C850	120	13.5	17.0	0.6
C850	130	11.0	14.5	0.6
C860	80	11.0	14.5	0.6
C860	120	11.0	14.5	0.6
C860	130	9.0	12.5	0.6
C870	80	9.0	12.5	0.6
C870	120	9.0	12.5	0.6
C870	130	6.5	10.0	0.6
C872	120	9.0	12.5	0.6
C873	120	9.0	12.5	0.6
C874	120	9.0	12.5	0.6
C875	120	9.0	12.5	0.6
C880	80	6.5	10.0	0.6
C880	120	6.5	10.0	0.6
C880	130	4.0	7.5	0.6
C883	120	6.5	10.0	0.6
C890	80	4.0	7.5	0.5
C890	120	4.0	7.5	0.5

General technical data

Max. operating voltage	(T_A = 60 °C)	V_{max}	265	V DC or V AC
Rated voltage		V_R	230	V DC or V AC
Switching cycles		N	100	
Tolerance of R_R	(T_{ref} = 80 °C or 120 °C)	ΔR_R	±25	%
Tolerance of R_R	(T_{ref} = 130 °C)	ΔR_R	±20	%
Operating temperature range	(V = 0)	T_{op}	−40/+125	°C
Operating temperature range	(V = V_{max})	T_{op}	0/+60	°C

Electrical specifications and ordering codes

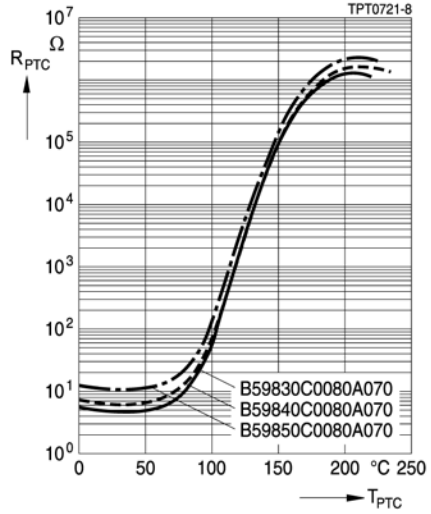
Type	I_R	I_S	I_{Smax} (V = V_{max})	I_r (typ.) (V = V_{max})	T_{ref} (typ.)	R_R	R_{min}	Approvals		Ordering code
	mA	mA	A	mA	°C	Ω	Ω			
C810	650	980	7.0	20	130	3.5	2.3	X	–	B59810C0130A070
C830	460	920	7.0	20	120	3.7	2.4	X	–	B59830C0120A070
C830	450	680	4.1	15	130	5	3.3	X	–	B59830C0130A070
C840	330	660	4.1	15	120	6	3.8	X	–	B59840C0120A070
C840	330	500	2.2	13	130	9	5.9	X	–	B59840C0130A070
C830	250	510	7.0	15	80	3.7	2.2	X	–	B59830C0080A070
C850	200	400	2.2	13	120	10	6.4	X	–	B59850C0120A070
C850	200	320	1.5	10	130	13	8.6	X	–	B59850C0130A070
C840	170	350	4.1	10	80	6	3.6	X	X	B59840C0080A070
C860	140	280	1.5	10	120	15	9	X	–	B59860C0120A070
C860	140	230	1.0	9	130	25	16.5	X	–	B59860C0130A070
C850	110	230	2.2	8	80	10	6	X	X	B59850C0080A070
C870	100	200	1.0	9	120	25	15	X	–	B59870C0120A070
C870	100	150	0.4	6	130	50	33	X	X	B59870C0130A070
C860	90	180	1.5	6	80	15	7.8	X	X	B59860C0080A070
C872	80	160	1.0	9	120	35	21	X	–	B59872C0120A070
C873	70	140	1.0	9	120	45	27	X	–	B59873C0120A070
C870	60	130	1.0	5	80	25	13	X	X	B59870C0080A070
C874	60	125	1.0	9	120	55	31	X	–	B59874C0120A070
C875	55	110	1.0	9	120	65	36	X	–	B59875C0120A070
C880	55	110	0.4	6	120	70	39	X	X	B59880C0120A070
C880	55	90	0.2	5	130	160	106	X	X	B59880C0130A070
C883	35	70	0.4	5	120	120	67	X	X	B59883C0120A070
C880	30	70	0.4	4	80	70	36.7	X	X	B59880C0080A070
C890	30	60	0.2	5	120	150	84	X	X	B59890C0120A070
C890	15	40	0.2	3	80	150	78.7	X	X	B59890C0080A070

Reliability data

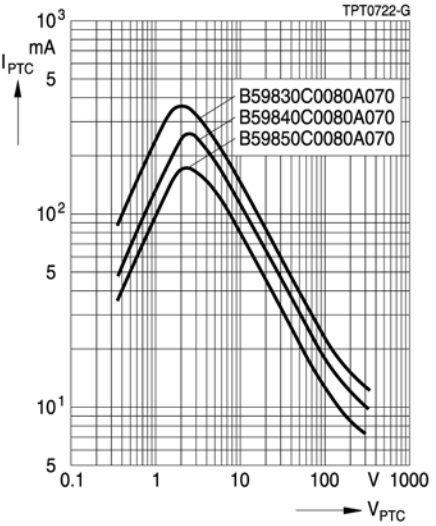
Test	Standard	Test conditions	$\lvert\Delta R_{25}/R_{25}\rvert$
Electrical endurance, cycling	IEC 60738-1	Room temperature, I_{Smax}; V_{max} Number of cycles: 100	< 25%
Electrical endurance, constant	IEC 60738-1	Storage at V_{max} /$T_{op,max}$ (V_{max}) Test duration: 1000 h	< 25%
Damp heat	IEC 60738-1	Temperature of air: 40 °C Relative humidity of air: 93% Duration: 56 days Test according to IEC 60068-2-78	< 10%
Rapid change of temperature	IEC 60738-1	$T_1 = T_{op,min}$ (0 V), $T_2 = T_{op,max}$ (0 V) Number of cycles: 5 Test duration: 30 min Test according to IEC 60068-2-14, Test Na	< 10%
Vibration	IEC 60738-1	Frequency range: 10 to 55 Hz Displacement amplitude: 0.75 mm Test duration: 3 × 2 h Test according to IEC 60068-2-6, Test Fc	< 5%
Shock	IEC 60738-1	Acceleration: 390 m/s² Pulse duration: 6 ms; 6 × 4000 pulses	< 5%
Climatic sequence	IEC 60738-1	Dry heat: T = $T_{op,max}$ (0 V) Test duration: 16 h Damp heat first cycle Cold: T = $T_{op,min}$ (0 V) Test duration: 2 h Damp heat 5 cycles Tests performed according to IEC 60068-2-30	< 10%

Characteristics (typical) for T_{ref} = 80 °C

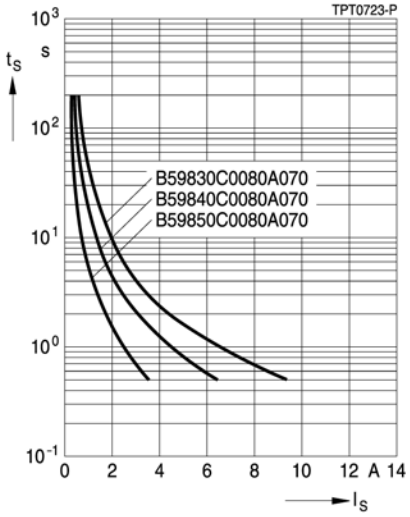
PTC resistance R_{PTC} versus PTC temperature T_{PTC} (measured at low signal voltage)



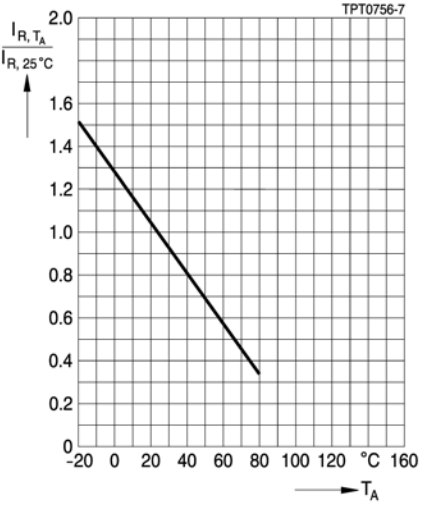
PTC current I_{PTC} versus PTC voltage V_{PTC} (measured at 25 °C in still air)



Switching time t_S versus switching current I_S (measured at 25 °C in still air)

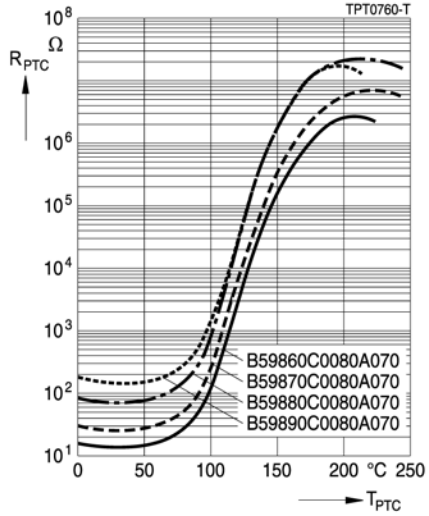


Rated current I_R versus ambient temperature T_A (measured in still air)

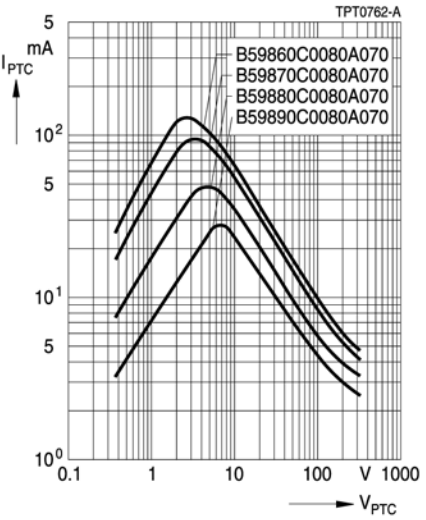


Characteristics (typical) for T_{ref} = 80 °C

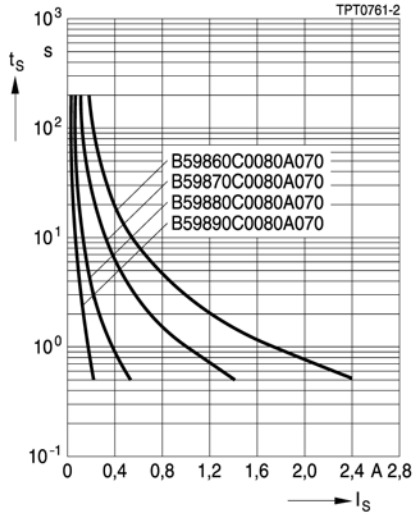
PTC resistance R_{PTC} versus PTC temperature T_{PTC} (measured at low signal voltage)



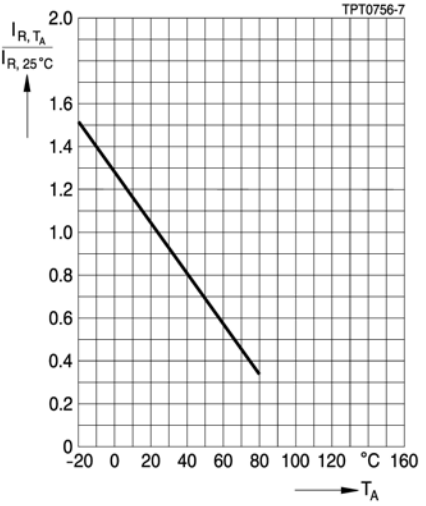
PTC current I_{PTC} versus PTC voltage V_{PTC} (measured at 25 °C in still air)



Switching time t_S versus switching current I_S (measured at 25 °C in still air)

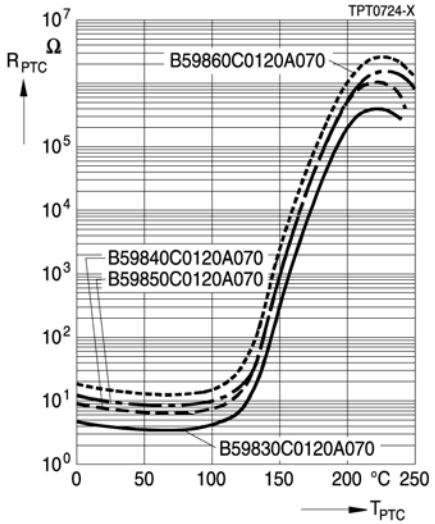


Rated current I_R versus ambient temperature T_A (measured in still air)

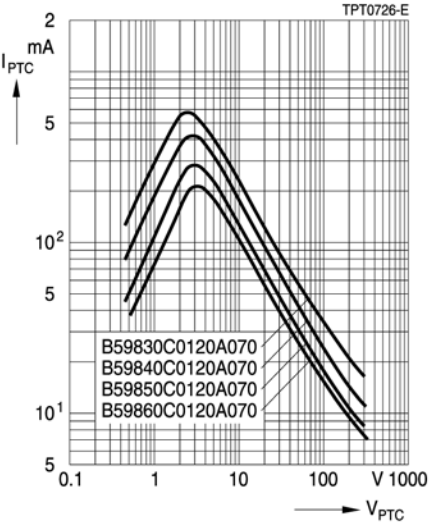


Characteristics (typical) for T_{ref} = 120 °C

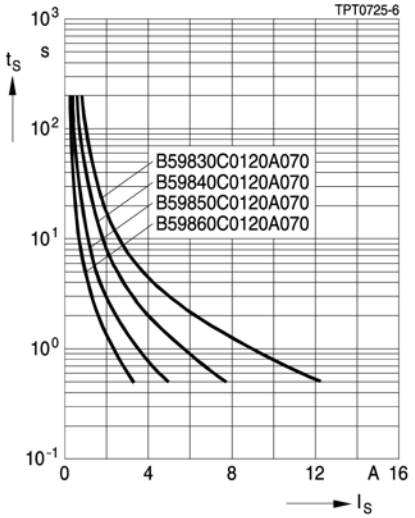
PTC resistance R_{PTC} versus PTC temperature T_{PTC} (measured at low signal voltage)



PTC current I_{PTC} versus PTC voltage V_{PTC} (measured at 25 °C in still air)



Switching time t_S versus switching current I_S (measured at 25 °C in still air)



Rated current I_R versus ambient temperature T_A (measured in still air)