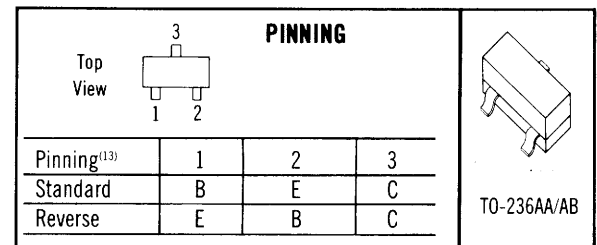


SERIES TMPT MICROMINIATURE TRANSISTORS

- Series TMPT consists of standard Asian and U.S.A. transistor types.
- These devices are molded in TO-236AA (high profile) or TO-236AB (low profile) packages. They are intended as an alternate to conventional "chip-and-wire" hybrid assembly techniques.
- P_D (Max.) = 350 mW, $T_J = +150^\circ\text{C}$ (Max.)



FOR PACKAGE DIMENSIONS, SEE PAGE 112.

See Note 13

Catalog Number	Marking	Polarity	V _{CBO} (V) Min.	V _{CEO} (V) Min.	V _{EBO} (V) Min.	I _{CBO} (nA) Max.	V _{CB} α (V)	I _{EBO} (nA) Max.	V _{EB} α (V)	h _{FE} I _C & V _{CE} Min. Max. α (mA) (V)				V _{CE(SAT)} (V) & V _{BE(SAT)} (V) Max. Min. α (mA)			I _B (mA)	C _{ob} (pF) Max.	f _T (MHz) Min.	I _C α (mA)	t _{off} (ns) Max.	NF (dB) Typ.	
TMPT811C5	C5	PNP	−50	−45	−5	−50	−40	−50	−5	135	270	−0.5	−3	−0.3	—	—	−20	−2	—	50	−1	—	—
TMPT811C6	C6	PNP	−50	−45	−5	−50	−40	−50	−5	200	400	−0.5	−3	−0.3	—	—	−20	−2	—	50	−1	—	—
TMPT811C7	C7	PNP	−50	−45	−5	−50	−40	−50	−5	300	600	−0.5	−3	−0.3	—	—	−20	−2	—	50	−1	—	—
TMPT811C8	C8	PNP	−50	−45	−5	−50	−40	−50	−5	450	900	−0.5	−3	−0.3	—	—	−20	−2	—	50	−1	—	—
TMPT812M3	M3	PNP	−50	−40	−5	−100	−40	−100	−5	60	120	−1	−6	−0.5	—	—	−30	−3	—	150	−10	—	—
TMPT812M4	M4	PNP	−50	−40	−5	−100	−40	−100	−5	90	180	−1	−6	−0.5	—	—	−30	−3	—	150	−10	—	—
TMPT812M5	M5	PNP	−50	−40	−5	−100	−40	−100	−5	135	270	−1	−6	−0.5	—	—	−30	−3	—	150	−10	—	—
TMPT812M6	M6	PNP	−50	−40	−5	−100	−40	−100	−5	200	400	−1	−6	−0.5	—	—	−30	−3	—	150	−10	—	—
TMPT812M7	M7	PNP	−50	−40	−5	−100	−40	−100	−5	300	600	−1	−6	−0.5	—	—	−30	−3	—	150	−10	—	—
TMPT813S2	S2	PNP	−60	−45	−5	−100	−45	−100	−5	50	100	−50	−1	−0.5	—	−1.2	−150	−15	—	100	−10	—	—
TMPT813S3	S3	PNP	−60	−45	−5	−100	−45	−100	−5	75	150	−50	−1	−0.5	—	−1.2	−150	−15	—	100	−10	—	—
TMPT813S4	S4	PNP	−60	−45	−5	−100	−45	−100	−5	100	200	−50	−1	−0.5	—	−1.2	−150	−15	—	100	−10	—	—
TMPT956H3	H3	PNP	−60	−40	−5	−50	−30	−50	−4	80	130	−10	−1	−0.3	−0.65	−0.85	−10	−1	5	150	−10	270 ⁽¹³⁾	—
TMPT956H4	H4	PNP	−60	−40	−5	−50	−30	−50	−4	110	170	−10	−1	−0.3	−0.65	−0.85	−10	−1	5	150	−10	270 ⁽¹³⁾	—
TMPT956H5	H5	PNP	−60	−40	−5	−50	−30	−50	−4	150	240	−10	−1	−0.3	−0.65	−0.85	−10	−1	5	150	−10	270 ⁽¹³⁾	—
TMPT956H6	H6	PNP	−60	−40	−5	−50	−30	−50	−4	200	320	−10	−1	−0.3	−0.65	−0.85	−10	−1	5	150	−10	270 ⁽¹³⁾	—
TMPT1621B3	B3	NPN	25 ⁽⁴⁾	20	5	100	15	100	4	60	120	1	0.5	0.25	—	0.85	10	1	—	200	10	25 ⁽³⁾	—
TMPT1621B4	B4	NPN	25 ⁽⁴⁾	20	5	100	15	100	4	90	180	1	0.5	0.25	—	0.85	10	1	—	200	10	25 ⁽³⁾	—
TMPT1622D6	D6	NPN	40	35	5	50	25	50	5	200	400	0.5	3	0.5	—	—	100	10	—	100	1	—	—
TMPT1622D7	D7	NPN	40	35	5	50	25	50	25	300	600	0.5	3	0.5	—	—	100	10	—	100	1	—	—
TMPT1622D8	D8	NPN	40	35	5	50	25	50	25	450	900	0.5	3	0.5	—	—	100	10	—	100	1	—	—
TMPT1623L3	L3	NPN	50	40	5	100	40	100	5	60	120	0.5	3	0.5	—	—	100	10	—	100	1	—	—
TMPT1623L4	L4	NPN	50	40	5	100	40	100	5	90	180	0.5	3	0.5	—	—	100	10	—	100	1	—	—
TMPT1623L5	L5	NPN	50	40	5	100	40	100	5	135	270	0.5	3	0.5	—	—	100	10	—	100	1	—	—
TMPT1623L6	L6	NPN	50	40	5	100	40	100	5	200	400	0.5	3	0.5	—	—	100	10	—	100	1	—	—
TMPT1623L7	L7	NPN	50	40	5	100	40	100	5	300	600	0.5	3	0.5	—	—	100	10	—	100	1	—	—
TMPT1653N2	N2	NPN	150	130	5	100	100	100	5	50	130	15	3	0.5	—	1	10	1	6	120	15	—	—
TMPT1653N3	N3	NPN	150	130	5	100	100	100	5	100	220	15	3	0.5	—	1	10	1	6	120	15	—	—
TMPT1653N4	N4	NPN	150	130	5	100	100	100	5	150	330	15	3	0.5	—	1	10	1	6	120	15	—	—
TMPT1654N5	N5	NPN	180	160	5	100	100	100	5	50	130	15	3	0.5	—	1	10	1	6	120	10	—	—
TMPT1654N6	N6	NPN	180	160	5	100	100	100	5	100	220	15	3	0.5	—	1	10	1	6	120	10	—	—
TMPT1654N7	N7	NPN	180	160	5	100	100	100	5	150	330	15	3	0.5	—	1	10	1	6	120	10	—	—
TMPT2107G3	G3	NPN	60	40	6	50	30	50	5	80	130	10	1	0.3	0.65	0.85	10	1	4.5	200	10	250 ⁽¹³⁾	—
TMPT2107G4	G4	NPN	60	40	6	50	30	50	5	110	170	10	1	0.3	0.65	0.85	10	1	4.5	200	10	250 ⁽¹³⁾	—
TMPT2107G5	G5	NPN	60	40	6	50	30	50	5	150	240	10	1	0.3	0.65	0.85	10	1	4.5	200	10	250 ⁽¹³⁾	—
TMPT2107G6	G6	NPN	60	40	6	50	30	50	5	200	320	10	1	0.3	0.65	0.85	10	1	4.5	200	10	250 ⁽¹³⁾	—
TMPT2221	N12	NPN	60	30	5	50	50	50	3	40	120	150	10	0.4	0.6	2	150	15	8	250	20	—	—
TMPT2221A	N54	NPN	75	40	6	50	60	50	3	40	120	150	10	0.3	0.6	1.2	150	15	8	250	20	—	—

continued on next page

SERIES TMPT MICROMINIATURE TRANSISTORS, continued

Catalog Number	Marking	Polarity	V _{CE0} (V) Min.	V _{CE0} (V) Min.	V _{EB0} (V) Min.	I _{CE0} (nA) Max.	V _{CE} (V) @	I _{EB0} (nA) Max.	V _{EB} (V) @	h _{FE} Min.	I _C (mA) @	V _{CE} (V) @	V _{CE(SAT)} (V) Max.	V _{BE(SAT)} (V) Min.	I _C (mA) @	I _B (mA) @	C _{ob} (pF) Max.	f _T (MHz) Min.	I _C (mA) @	t _{off} (ns) Max.	NF (dB) Typ.	
TMPT2222	1B	NPN	60	30	5	50	50	50	3	100	300	150	10	0.4	0.6	2	150	15	8	250	20	—
TMPT2222A	1P	NPN	75	40	6	50	60	50	3	100	300	150	10	0.3	0.6	1.2	150	15	8	300	20	— 4 ⁽⁶⁾
TMPT2484	1U	NPN	60	60	6	10	5	10	5	100	500	.01	—	0.35	—	—	1	0.1	6	60	.05	— 3 ⁽⁷⁾
TMPT2906	P01	PNP	−60	−40	−5	−20	−50	−50	−3	40	120	−150	−10	−0.4	—	1.3	−150	−15	8	200	50	—
TMPT2906A	P12	PNP	−60	−60	−5	−10	−50	−15	−3	40	120	−150	−10	−0.3	—	1.3	−150	−15	8	200	50	—
TMPT2907	2B	PNP	−60	−40	−5	−20	−50	50	3	100	300	−150	−10	−0.4	—	1.3	−150	−15	8	200	50	—
TMPT2907A	2F	PNP	−60	−60	−5	−10	−50	15	3	100	300	−150	−10	−0.4	—	1.3	−150	−15	8	200	50	—
TMPT3798	ABB	PNP	60	60	5	10	−50	20	−4	150	600	1	−10	−0.25	—	0.80	1	0.1	7	100	1	— 3.5
TMPT3798A	98A	PNP	90	90	5	10	−50	20	−4	150	600	1	−10	−0.25	—	0.80	1	0.1	7	100	1	— 3.5
TMPT3903	N72	NPN	60	40	6	50 ⁽⁸⁾	30	—	—	50	150	10	1	0.2	0.65	0.85	10	1	4	250	10	— 6 ⁽⁹⁾
TMPT3904	1A	NPN	60	40	6	50 ⁽⁸⁾	30	—	—	100	300	10	1	0.2	−0.65	−0.85	10	1	4	300	10	— 5 ⁽⁹⁾
TMPT3905	P26	PNP	−40	−40	−5	−50 ⁽⁸⁾	−30	—	—	50	150	−10	−1	−0.25	−0.65	−0.85	−10	1	4.5	200	10	— 5 ⁽⁹⁾
TMPT3906	2A	PNP	−40	−40	−5	−50 ⁽⁸⁾	−30	—	—	100	300	−10	−1	−0.25	0.65	0.85	−10	1	4.5	250	10	— 4 ⁽⁹⁾
TMPT4401	2X	NPN	60	40	6	100	35	100	35	100	300	150	1	0.4	0.75	0.95	150	15	6.5	250	20	—
TMPT4402	2W	PNP	−40	−40	−5	−100	−35	—	—	50	150	−150	−3	−0.4	—	—	−150	−15	8.5	150	20	—
TMPT4403	2T	PNP	−40	−40	−5	−100	−35	—	—	100	300	−150	−3	−0.4	—	—	−150	−15	8.5	200	20	—
TMPT5086	2P	PNP	−60	−50	−3	−50	−35	−50	−3	150	600	−0.1	−5	−0.3	—	—	−10	−1	4	40	0.5	—
TMPT5087	2Q	PNP	−60	−50	−3	−50	−35	−50	−3	250	800	−0.1	−5	−0.3	—	—	−10	−1	4	40	0.5	—
TMPT5088	1Q	NPN	35	30	4.5	50	20	50	3	300	900	0.1	5	0.5	—	—	10	1	4	50	0.5	—
TMPT5089	1R	NPN	30	25	4.5	50	15	100	4.5	400	1200	0.1	5	0.5	—	—	10	1	4	50	0.5	—
TMPT5401	2L	PNP	−160	−150	−5	−50	−100	−50	−3	60	240	−10	−5	−0.2	—	−1	−10	−1	6	100	10	— 8 ⁽¹⁰⁾
TMPT5550	1F	NPN	160	140	6	100	100	50	4	60	250	10	5	0.15	—	1	10	1	6	100	10	—
TMPT5551	1FF	NPN	180	160	6	50	120	50	4	80	250	10	5	0.15	—	1	10	1	6	100	10	— 8
TMPT6427	1V	NPN	40	40	12	50	30	10	5	20K	200K	100	5	1.5	—	—	500	0.5	7	130	1	—
TMPT6428	1K	NPN	60	50	6	10	30	10	5	250	650	1	5	0.2	—	—	10	0.5	4	100	1	— 3 ⁽¹¹⁾
TMPT6429	1L	NPN	55	45	5	10	30	10	5	500	1250	1	5	0.2	—	—	10	0.5	3	100	1	—
TMPTA05	1H	NPN	60	60	4	100	60	—	—	50	—	10	1	0.25	—	—	100	10	—	100	10	—
TMPTA06	1G	NPN	80	80	4	100	80	—	—	50	—	10	1	0.25	—	—	100	10	—	100	10	—
TMPTA12	3W	NPN	20	20	10	100	15	100	10	20K	—	10	5	1	—	—	10	.01	8	—	—	—
TMPTA13	1M	NPN	30	30	10	100	30	100	10	10K	—	100	5	1.5	—	—	100	0.1	—	125	10	— 2 ⁽¹²⁾
TMPTA14	1N	NPN	30	30	10	100	30	100	10	20K	—	100	5	1.5	—	—	100	0.1	—	125	10	— 2 ⁽¹²⁾
TMPTA20	1C	NPN	40	40	4	100	30	—	—	40	400	5	10	0.25	—	—	10	1	4	125	5	—
TMPTA42	1D	NPN	300	300	6	100	200	100	6	40	—	10	10	0.5	—	0.9	20	2	3	50	10	—
TMPTA43	1E	NPN	200	200	6	100	160	100	4	40	—	10	10	0.4	—	0.9	20	2	4	50	10	—
TMPTA55	2H	PNP	−60	−60	−4	−100	−60	—	—	50	—	−10	−1	−0.25	—	—	−100	−10	—	100	10	—
TMPTA56	2G	PNP	−80	−80	−4	−100	−80	—	—	50	—	−10	−1	−0.25	—	—	−100	−10	—	100	10	—
TMPTA63	2U	PNP	−30	−30	−10	−100	−30	−100	−10	10K	—	−100	−5	−1.5	—	—	−100	−0.1	—	125	10	—
TMPTA64	2V	PNP	−30	−30	−10	−100	−30	−100	−10	20K	—	−100	−5	−1.5	—	—	−100	−0.1	—	125	10	—
TMPTA70	2C	PNP	−40	−40	−4	−100	−30	—	—	40	400	−5	−10	−0.25	—	—	−10	−1	4	125	5	—
TMPTA92	2D	PNP	−300	−300	−5	−250	−200	−100	−3	40	—	−10	−10	−0.5	—	−0.9	−20	−2	6	50	10	—
TMPTA93	2E	PNP	−200	−200	−5	−250	−160	−100	−3	40	—	−10	−10	−0.4	—	−0.9	−20	−2	8	50	10	—

 Notes: 1. I_C = 3 mA, I_{B1} = I_{B2} = 1 mA, V_{CC} = 3 V.

 2. I_C = 500 μ A, V_{CE} = 6 V, f = 1 MHz, R_G = 500 Ω .

 3. Typical Value, I_C = 10 mA, I_{B1} = 3 mA, I_{B2} = 1.5 mA, V_{CC} = 3 V.

 4. BV_{CE0}.

 5. T_A = +25°C.

 6. I_C = 100 μ A, V_{CE} = 10 V, R_S = 1 k Ω , f = 1 kHz, BW = 200 Hz.

 7. I_C = 10 μ A, V_{CE} = 5 V, R_S = 10 k Ω , f = 1 kHz, BW = 200 Hz.

 8. I_C with 3 V on Base.

 9. I_C = 100 μ A, V_{CE} = 5 V, R_S = 1 k Ω , f = 10 Hz to 15.7 kHz.

 10. I_C = 250 μ A, V_{CE} = 5 V, R_S = 1 k Ω , f = 10 Hz to 15.7 kHz.

 11. I_C = 1 mA, V_{CE} = 5 V, R_S = 100 k Ω , f = 10 Hz to 15.7 kHz.

 12. I_C = 1 mA, V_{CE} = 5 V, R_S = 100 k Ω , f = 1 kHz.

13. Available in standard and reverse pin-out. Standard pin-out catalog numbers are shown. For reverse pin-out add 'R' suffix to catalog number. Example: TMPT811C5, standard pin-out; TMPT811C5R, reverse pin-out.