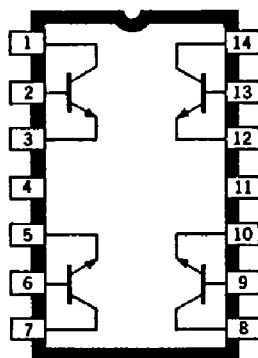


SERIES TPQ QUAD TRANSISTOR ARRAYS

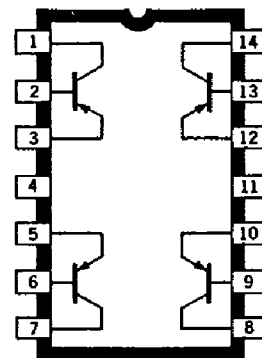
SPRAGUE SERIES TPQ quad transistor arrays are general-purpose silicon transistor arrays consisting of four independent devices. Shown are 10 NPN types, 15 PNP types, and 12 NPN/PNP complementary pairs.

All of these devices are furnished in a 14-pin dual in-line plastic package. The molded package is identical to that used with most consumer integrated circuits and offers superior mechanical protection during insertion into printed wiring boards.



Dwg. No. A-10,050A

TPQ2221	TPQ4002A
TPQ2221A	TPQ5550
TPQ2222	TPQ5551
TPQ2222A	TPQ6426
TPQ2483	TPQ6427
TPQ2484	TPQ7041
TPQ3724	TPQ7042
TPQ3725	TPQ7043
TPQ3904	TPQA05
TPQ4001A	TPQA06



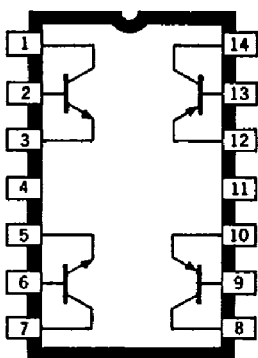
Dwg. No. A-10,051A

TPQ2906	TPQ4354
TPQ2906A	TPQ5400
TPQ2907	TPQ5401
TPQ2907A	TPQ7091
TPQ3798	TPQ7092
TPQ3799	TPQ7093
TPQ3906	TPQA55
	TPQA56

ABSOLUTE MAXIMUM RATINGS

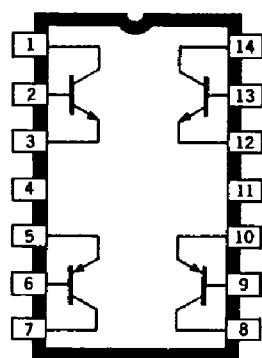
Power Dissipation, P_D (Each Transistor) 500 mW
 (Total Package) 2.0 W*
 Operating Temperature Range, T_A -55°C to $+150^{\circ}\text{C}$
 Storage Temperature Range, T_S -65°C to $+150^{\circ}\text{C}$

*Derate at the rate of 16 mW/ $^{\circ}\text{C}$ above $T_A = +25^{\circ}\text{C}$



Dwg. No. A-10,052A

TPQ6001
TPQ6002
TPQ6100
TPQ6100A
TPQ6501
TPQ6502



Dwg. No. A-10,053A

TPQ6600
TPQ6600A
TPQ6700
TPQ7051
TPQ7052
TPQ7053

SERIES TPQ QUAD TRANSISTOR ARRAYS

ELECTRICAL CHARACTERISTICS at $T_A = +25^\circ\text{C}$

Part Number	V _{(BR)CBO} (V)	V _{(BR)CEO} (V)	V _{(BR)EBO} (V)	I _{CBO}		DC Current Gain			Saturation Voltage			f _T		C _{ob} Max. (pF)	Similar Discrete Devices
						h _{FE} Min.	Conditions		V _{CE} Max. (V)	V _{BE} Max. (V)	@ I _C (mA)				
				Max. (nA)	@ V _{CB} (V)		I _C (mA)	V _{CE} (V)				Min. (MHz)	@ I _C (mA)		
Four NPN Devices															
TPQ2221	60	40	5.0	50	50	35 40 20	10 150 300	10 10 10	0.40 1.60	1.30 2.60	150 300	200	20	8.0	2N2221
TPQ2221A	75	40	6.0	50	50	35 40 20	10 150 300	10 10 10	0.40 1.60	1.30 2.60	150 300	200	20	8.0	2N2221A
TPQ2222	60	40	5.0	50	50	75 100 30	10 150 300	10 10 10	0.40 1.60	1.30 2.60	150 300	200	20	8.0	2N2222
TPQ2222A	75	40	6.0	50	50	75 100 30	10 150 300	10 10 10	0.40 1.60	1.30 2.60	150 300	200	20	8.0	2N2222A
TPQ2483	60	40	6.0	20	45	100 150 150	0.1 1.0 10	5.0 5.0 5.0	0.35 0.50 (See Note 1)	0.70 0.80	1.0 10	50	0.5	6.0	2N2483
TPQ2484	60	40	6.0	20	45	200 300 300	0.1 1.0 10	5.0 5.0 5.0	0.35 0.50 (See Note 1)	0.70 0.80	1.0 10	50	0.5	6.0	2N2484
TPQ3724	60 (Note 2)	30	5.0	500	40	35 25	100 500	1.0 2.0	0.45	1.00	500	250	50	10	2N3724
TPQ3725	60 (Note 2)	40	5.0	500	40	35 25	100 500	1.0 2.0	0.45	1.00	500	250	50	10	2N3725
TPQ3904	60	40	6.0	50	40	30 50 75	0.1 1.0 10	1.0 1.0 1.0	0.20	0.85	10	250	10	4.0	2N3904
TPQ4001A	60	40	6.0	500	30	50 30 20	100 500 1000	1.0 1.0 5.0	0.26 0.52 0.95	0.86 1.1 1.7	100 500 1000	200	50	10	—
TPQ4002A	70	45	6.0	500	30	50 30 20	100 500 1000	1.0 1.0 5.0	0.26 0.52 0.95	0.86 1.1 1.7	100 500 1000	200	50	10	—
TPQ5550	160	140	6.0	100	100	60 60 20	1.0 10 50	5.0 5.0 5.0	0.15 0.25	1.00 1.20	10 50	100	10	6.0	2N5550
TPQ5551	180	160	6.0	50	120	80 80 30	1.0 10 50	5.0 5.0 5.0	0.15 0.25	1.00 1.20	10 50	100	10	6.0	2N5551
TPQ6426	40	30	12	100	30	5k 10k	10 100	5.0 5.0	1.5	2.0	100	125	10	8.0	2N6426
TPQ6427	50	40	12	100	30	5k 10k	10 100	5.0 5.0	1.5	2.0	100	125	10	8.0	2N6427

NOTES:

1. Base-emitter voltage shown is $V_{BE(ON)}$ at indicated I_C , $V_{CE} = 5.0\text{ V}$.
2. BV_{CES}

SERIES TPQ QUAD TRANSISTOR ARRAYS

ELECTRICAL CHARACTERISTICS at $T_A = +25^\circ\text{C}$

Part Number	$V_{(BR)CBO}$ (V)	$V_{(BR)CEO}$ (V)	$V_{(BR)EBO}$ (V)	I_{CBO}		DC Current Gain			Saturation Voltage			f_T		C_{ob} Max. (pF)	Similar Discrete Devices
						h_{FE} Min.	Conditions		V_{CE} Max. (V)	V_{BE} Max. (V)	@ I_C (mA)				
				Max. (nA)	@ V_{CB} (V)		I_C (mA)	V_{CE} (V)				Min. (MHz)	@ I_C (mA)		

Four NPN Devices (Continued)

TPQ7041	150	150	5.0	100	120	25 40 40	1.0 10 30	10 10 10	0.5	0.9	20	50	10	5.0	—
TPQ7042	200	200	5.0	100	150	25 40 40	1.0 10 30	10 10 10	0.5	0.9	20	50	10	5.0	—
TPQ7043	250	250	5.0	100	180	25 40 40	1.0 10 30	10 10 10	0.5	0.9	20	50	10	5.0	—
TPQA05	60	60	4.0	100	(Note 1)	50 50	10 100	1.0 2.0	0.25	—	100	—	—	10	MPSA05
TPQA06	80	80	4.0	100	(Note 2)	50 50	10 100	1.0 2.0	0.25	—	100	—	—	10	MPSA06

Four PNP Devices

TPQ2906	-60	-40	-5.0	50	-30	35 40 30	10 150 300	-10 -10 -10	-0.40 -1.60	-1.30 -2.60	150 300	200	50	8.0	2N2906
TPQ2906A	-60	-40	-5.0	50	-30	35 40 30	10 150 300	-10 -10 -10	-0.40 -1.60	-1.30 -2.60	150 300	200	50	8.0	2N2906A
TPQ2907	-60	-40	-5.0	50	-30	75 100 50	10 150 300	-10 -10 -10	-0.40 -1.60	-1.30 -2.60	150 300	200	50	8.0	2N2907
TPQ2907A	-60	-60	-5.0	50	-30	75 100 50	10 150 300	-10 -10 -10	-0.40 -1.60	-1.30 -2.60	150 300	200	50	8.0	2N2907A
TPQ3798	-60	-40	-5.0	10	-50	100 150 150 125	0.01 0.1 0.5 10	-5.0 -5.0 -5.0 -5.0	-0.20 -0.25	-0.70 -0.80	0.1 1.0	60	1.0	4.0	2N3798
TPQ3799	-60	-60	-5.0	10	-50	225 300 300 250	0.01 0.1 0.5 10	-5.0 -5.0 -5.0 -5.0	-0.20 -0.25	-0.70 -0.80	0.1 1.0	60	1.0	4.0	2N3799
TPQ3906	-40	-40	-5.0	50	-30	40 60 75	0.1 1.0 10	-1.0 -1.0 -1.0	-0.25	-0.85	10	200	10	4.5	2N3906

NOTES:

1. I_{CES} at $V_{CE} = 50\text{ V}$, $V_{BE} = 0$.
2. I_{CES} at $V_{CE} = 60\text{ V}$, $V_{BE} = 0$.

SERIES TPQ QUAD TRANSISTOR ARRAYS

ELECTRICAL CHARACTERISTICS at $T_A = +25^\circ\text{C}$

Part Number	$V_{(BR)CBO}$ (V)	$V_{(BR)CEO}$ (V)	$V_{(BR)EBO}$ (V)	I_{CBO}		DC Current Gain			Saturation Voltage			f_T		C_{ob} Max. (pF)	Similar Discrete Devices
						h_{FE} Min.	Conditions		V_{CE} Max. (V)	V_{BE} Max. (V)	@ I_C (mA)				
				Max. (nA)	@ V_{CB} (V)		I_C (mA)	V_{CE} (V)				Min. (MHz)	@ I_C (mA)		

Four PNP Devices (Continued)

TPQ4354	-60	-60	-5.0	50	-50	25	0.1	-10	-0.15	-0.90	150	100	50	30 (Note 1)	2N4354
						40	1.0	-10							
						50	10	-10							
						40	100	-10							
TPQ5400	-130	-120	-5.0	100	(Note 2)	30	1.0	-5.0	-0.20	-1.00	10	100	10	6.0	2N5400
						40	10	-5.0							
						40	50	-5.0							
TPQ5401	-160	-150	-5.0	100	(Note 3)	50	1.0	-5.0	-0.20	1.00	10	100	10	6.0	2N5401
						60	10	-5.0							
						50	50	-5.0							
TPQ7091	150	150	5.0	250	120	25	1.0	10	0.5	0.9	20	50	10	5.0	—
						35	10	10							
						25	30	10							
TPQ7092	200	200	5.0	250	160	25	1.0	10	0.5	0.9	20	50	10	5.0	—
						35	10	10							
						25	30	10							
TPQ7093	250	250	5.0	250	180	25	1.0	10	0.5	0.9	20	50	10	5.0	—
						35	10	10							
						25	30	10							
TPQA55	-60	-60	-4.0	100	(Note 4)	50	10	-1.0	-0.25	—	100	—	—	15	MPSA55
						50	100	-2.0							
TPQA56	-80	-80	-4.0	100	(Note 5)	50	10	-1.0	-0.25	—	100	—	—	15	MPSA56
						50	100	-2.0							

Two NPN/Two PNP Devices

TPQ6001 (Note 6)	60	30	5.0	30	50	25	1.0	10	0.40	1.30	150	200	50	8.0	2N2221 and 2N2906
						35	10	10							
						40	150	10							
						20	300	10							
TPQ6002 (Note 6)	60	30	5.0	30	50	50	1.0	10	0.40	1.30	150	200	50	8.0	2N2222 and 2N2907
						75	10	10							
						100	150	10							
						30	300	10							
TPQ6100 (Note 6)	60	40	5.0	10	50	50	0.1	5.0	0.25	0.80	1.0	100	0.5	4.0	2N2483 and 2N3798
						75	0.5	5.0							
						75	1.0	5.0							
						60	10	5.0							
TPQ6100A (Note 6)	60	45	5.0	10	50	100	0.1	5.0	0.25	0.80	1.0	100	0.5	4.0	2N2484 and 2N3799
						150	0.5	5.0							
						150	1.0	5.0							
						125	10	5.0							

NOTES:

1. C_{ob}
2. I_{CES} at $V_{CE} = 100\text{ V}$, $V_{BE} = 0$.
3. I_{CES} at $V_{CE} = 120\text{ V}$, $V_{BE} = 0$.
4. I_{CES} at $V_{CE} = 50\text{ V}$, $V_{BE} = 0$.
5. I_{CES} at $V_{CE} = 60\text{ V}$, $V_{BE} = 0$.
6. NPN/PNP complementary pairs. Polarity shown is for NPN devices.

SERIES TPQ QUAD TRANSISTOR ARRAYS

ELECTRICAL CHARACTERISTICS at $T_A = +25^\circ\text{C}$

Part Number (See Note)	$V_{(BR)CBO}$ (V)	$V_{(BR)CEO}$ (V)	$V_{(BR)EBO}$ (V)	I_{CBO}		DC Current Gain			Saturation Voltage			f_T		C_{ob} Max. (pF)	Similar Discrete Devices
						h_{FE} Min.	Conditions		V_{CE} Max. (V)	V_{BE} Max. (V)	@ I_C (mA)				
				Max. (nA)	@ V_{CB} (V)		I_C (mA)	V_{CE} (V)							
												Min. (MHz)	@ I_C (mA)		
Two NPN/Two PNP Devices (Continued)															
TPQ6501	60	30	5.0	30	50	25	1.0	10	0.40	1.30	150	200	50	8.0	2N2221 and 2N2906
						35	10	10	1.40	2.00	300				
						40	150	10							
						20	300	10							
TPQ6502	60	30	5.0	30	50	50	1.0	10	0.40	1.30	150	200	50	8.0	2N2222 and 2N2907
						75	10	10	1.40	2.00	300				
						100	150	10							
						30	300	10							
TPQ6600	60	40	5.0	10	50	50	0.1	5.0	0.25	0.80	1.0	100	0.5	4.0	2N2483 and 2N3738
						75	0.5	5.0							
						75	1.0	5.0							
						60	10	5.0							
TPQ6600A	60	45	5.0	10	50	100	0.1	5.0	0.25	0.80	1.0	100	0.5	4.0	2N2434 and 2N3799
						150	0.5	5.0							
						150	1.0	5.0							
						60	10	5.0							
TPQ6700	40	40	5.0	50	30	30	0.1	1.0	0.25	0.90	10	200	10	4.5	2N3904 and 2N3906
						50	1.0	1.0							
						70	10	1.0							
TPQ7051	150	150	5.0	250	120	25	1.0	10	0.7	0.9	20	50	10	6.0	—
						35	10	10							
						25	30	10							
TPQ7052	200	200	5.0	250	150	25	1.0	10	0.7	0.9	20	50	10	6.0	—
						35	10	10							
						25	30	10							
TPQ7053	250	200	5.0	250	180	25	1.0	10	0.7	0.9	20	50	10	6.0	—
						35	10	10							
						25	30	10							

NOTE:

NPN/PNP complementary pairs. Polarity shown is for NPN devices.