T-03-01

NPN Darlington Transistors TO-204MA (TO-3)

Part Number	Ic Amps	VCEO (SUS) Volts	VCE (SAT) Volts	hFE (Typical)	Switch Time		S	PD Watts	Circuit Diagram	Technical Publication
					tr	ts	tf			
PTC 10002 PTC 10003	10	350 400	1.9	30-300	0.6	3.0	1.5	150	A	PTC 10002/03
PTC 10006 PTC 10007	10	350 400	1.9	30-300	0.6	1.5	0.5	150	B	PTC 10006/07
PTC 6251 PTC 6252 PTC 6253	10	350 400 450	2.0	10-120	0.4	2.5	1.0	150	C	Consult Factory
PTC 6000 PTC 6001	15	300 350	2.0	40-160	0.4	2.5	1.0	125	C	PTC 6000/03
PTC 6002 PTC 6003	15	400 500	2.0	40-160	0.4	2.5	1.0	125	C	PTC 6000/03
PTC 10000 PTC 10001	20	350 400	1.9	50-600	0.6	3.5	2.4	175	A	PTC 10000/01
PTC 10004 PTC 10005	20	350 400	1.9	50-600	0.6	1.5	0.5	175	B	PTC 10004/05
PTC 10008 PTC 10009	20	450 500	2.0	40-400	1.5	2.0	0.6	175	B	PTC 10008/09
PTC 6060 PTC 6061 PTC 6062 PTC 6063	20	300 350 400 500	1.5	30-120	0.4	2.5	1.0	125	C	PTC 6060/63
PTC 9000 PTC 9001 PTC 9002	20	750 850 900	2.0	20	3.0	6.0	3.0	125	C	PTC 9000/02
PTC 6022 PTC 6023	30	350 400	2.0	50-750	0.4	6.5	1.0	125	C	PTC 6022/6023
PTC 6072 PTC 6073	40	350 400	2.0	50-250	0.4	6.5	1.0	125	B	PTC 6072/6073
PTC 10022 PTC 10023	40	350 400	2.2	50-600	1.2	2.5	0.9	250	B	PTC 10022/23
PTC 10015 PTC 10016	50	400 500	2.2	25	1.0	2.5	1.0	250	B	PTC 10015/16
PTC 7000 PTC 7001 PTC 7002 PTC 7003	50	300 350 400 500	2.0	40-120	0.4	2.5	0.7	175	C	PTC 7000/03
PTC 10020 PTC 10021	60	200 250	2.2	75-1000	1.0	3.5	0.5	250	B	PTC 10020/21

NPN Transistors TO-204MA (TO-3)

PTC 401	2	300	2.0	20-100	—	—	0.8	75	—	PTC 401/402
PTC 413	2	325	0.8	20-80	0.25	2.5	0.8	75	—	PTC 413/423
PTC 410	3.5	200	0.8	30-90	0.25	2.5	0.8	100	—	PTC 410/411
PTC 411	3.5	300	0.8	30-90	0.25	2.5	0.8	100	—	PTC 410/411
PTC 402	3.5	325	2.0	20-100	—	—	0.8	100	—	PTC 401/402
PTC 403	3.5	325	2.0	20-100	—	—	0.8	100	—	PTC 403/409
PTC 409	3.5	325	2.0	20-100	0.25	2.5	0.8	100	—	PTC 403/409
PTC 423	3.5	325	0.8	20-80	0.25	2.5	0.8	100	—	PTC 413/423
PTC 424	3.5	350	0.8	30-90	0.25	2.5	0.8	100	—	PTC 424/425
PTC 425	3.5	400	0.8	30-90	0.25	2.5	0.8	100	—	PTC 424/425
PTC 430	7	300	0.9	15-45	0.4	2.5	0.8	125	—	PTC 430/431
PTC 431	7	325	0.7	15-35	0.4	2.5	0.8	125	—	PTC 430/431
PTC 484	10	700	2.0	7.5	2.0	4.0	2.0	175	—	*
PTC 485	10	800	2.0	7.5	2.0	4.0	2.0	175	—	*
2N6674	10	300	1.0	8-20	0.6	2.5	0.5	175	—	2N6674/75
2N6675	10	400	1.0	8-20	0.6	2.5	0.5	175	—	2N6674/75
2N6676	15	300	1.5	8-20	0.6	2.5	0.5	175	—	2N6676/78
2N6677	15	350	1.5	8-20	0.6	2.5	0.5	175	—	2N6676/78
2N6678	15	400	1.5	8-20	0.6	2.5	0.5	175	—	2N6676/78
PTC 6679	30	300	1.5	8-20	0.6	2.5	0.5	230	—	PTC6679/81
PTC 6680	30	350	1.5	8-20	0.6	2.5	0.5	230	—	PTC6679/81
PTC 6681	30	400	1.5	8-20	0.6	2.5	0.5	230	—	PTC6679/81
PTC 6682	40	300	1.5	8-20	0.6	2.5	0.5	230	—	PTC6682/83
PTC 6683	40	350	1.5	8-20	0.6	2.5	0.5	230	—	PTC6682/83

* Consult Factory

NPN Transistors TO-247

Part Number	Ic Amps	VCEO (SUS) Volts	VCE (SAT) Volts	hFE (Typical)	Switch Time S			PD Watts	Circuit Diagram	Technical Publication
					tr	ts	tf			
PTC 401P	2	300	2.0	20-100	—	—	0.8	75	—	*
PTC 413P	2	325	0.8	20-80	0.25	2.5	0.8	75	—	*
PTC 410P	3.5	200	0.8	30-90	0.25	2.5	0.8	100	—	*
PTC 411P	3.5	300	0.8	30-90	0.25	2.5	0.8	100	—	*
PTC 402P	3.5	325	2.0	20-100	—	—	0.8	100	—	*
PTC 403P	3.5	325	2.0	20-100	—	—	0.8	100	—	*
PTC 409P	3.5	325	2.0	20-100	0.25	2.5	0.8	100	—	*
PTC 423P	3.5	325	0.8	20-80	0.25	2.5	0.8	100	—	*
PTC 424P	3.5	350	0.8	30-90	0.25	2.5	0.8	100	—	*
PTC 425P	3.5	400	0.8	30-90	0.25	2.5	0.8	100	—	*
PTC 430P	7	300	0.9	15-45	0.4	2.5	0.8	125	—	*
PTC 431P	7	325	0.7	15-35	0.4	2.5	0.8	125	—	*
PTC 484P	10	700	2.0	7.5	2.0	4.0	2.0	125	—	*
PTC 485P	10	800	2.0	7.5	2.0	4.0	2.0	125	—	*
PTC 6674P	10	300	1.0	8-20	0.6	2.5	0.5	125	—	*
PTC 6675P	10	400	1.0	8-20	0.6	2.5	0.5	125	—	*
PTC 6676P	15	300	1.5	8-20	0.6	2.5	0.5	125	—	*
PTC 6677P	15	350	1.5	8-20	0.6	2.5	0.5	125	—	*
PTC 6678P	15	400	1.5	8-20	0.6	2.5	0.5	125	—	*

NPN Darlington Transistors TO-247

PTC 10000P PTC 10001P	20	350 400	1.9	50-600	0.6	3.5	2.4	125	A	PTC 10000/01P
PTC 10002P PTC 10003P	10	350 400	2.0	30-300	0.6	3.0	1.5	125	A	PTC 10002/03P

NPN Powermode Transistors

PTC 8003 PTC 8004 PTC 8005	50	350	1.5	8-20	0.6	2.5	0.5	580	Isolated Collector	*
PTC 8000 PTC 8001 PTC 8002	60	350	1.5	8-20	0.6	2.5	0.5	580	Isolated Collector	*

* Consult Factory

Fast Recovery Rectifiers

Part Number	Io Amps	VR Volts	IFSM Amps	VF Volts	trr nS	Case Type	Technical Publication
PTC 862 PTC 864 PTC 866	40	200 400 600	600	1.5	500	DO-5	PTC 862/66
PTC 872 PTC 874 PTC 876	50	200 400 600	600	1.5	500	DO-5	PTC 872/76
PTC 920 PTC 921 PTC 922 PTC 923	50	900 1000 1100 1200	600	1.5	500	DO-5	PTC 920/23
PTC 940 PTC 941 PTC 942 PTC 943	100	900 1000 1100 1200	2200	1.5	575	DO-8	PTC 940/43

For specific test conditions and performance specifications, refer to the Referenced Technical Publication.

Powermode Fast Recovery Rectifiers

PTC 700 PTC 701 PTC 702	100	1000 1100 1200	600	1.5	600	Isolated Anode	*
PTC 710 PTC 711 PTC 712	125	1000 1100 1200	600	1.5	600	Isolated Anode	*

* Consult Factory

Circuit Diagrams

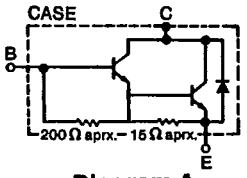


Diagram A

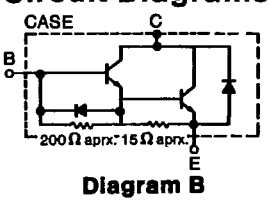


Diagram B

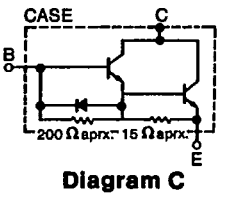
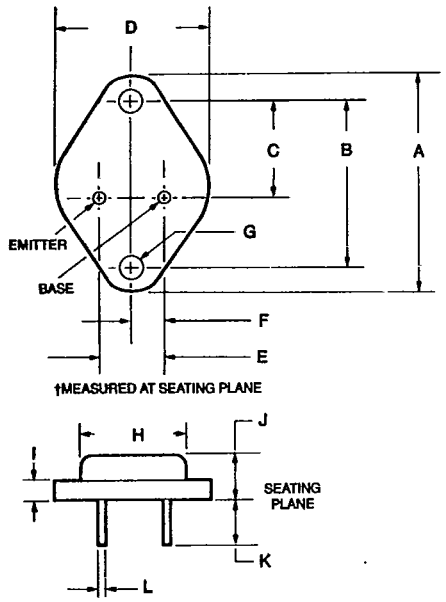


Diagram C

3

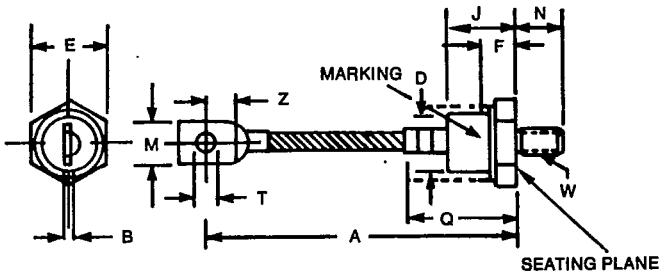
Dimensions

Transistors TO-204MA (Formerly TO-3)



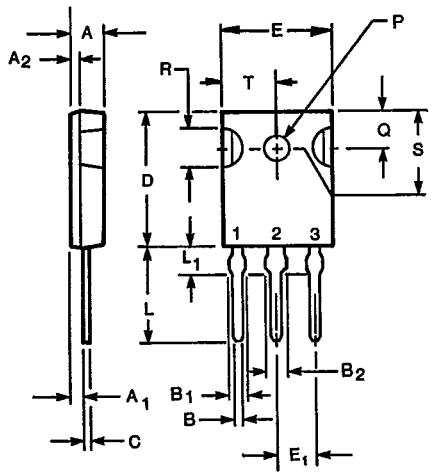
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	—	39.95	—	1.573
B	29.90	30.40	1.177	1.197
C	16.64	17.15	0.655	0.675
D	—	26.67	—	1.050
E	10.67	11.18	0.420	0.440
F	5.21	5.72	0.205	0.225
ØG	3.84	4.09	0.151	0.161
ØH	—	22.23	—	0.875
I	—	3.43	—	0.135
J	6.35	11.43	0.250	0.450
K	8.13	—	0.32	—
ØL	0.97	1.09	0.038	0.043

Rectifiers DO-8



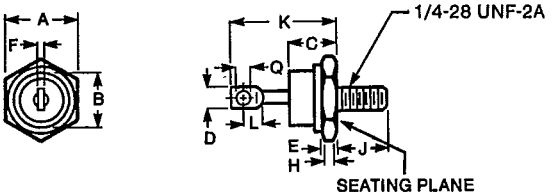
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	98.43	117.47	3.875	4.625
B	2.03	3.05	.080	.120
ØD	21.97	22.86	.865	.900
E	26.19	27.00	1.031	1.063
F	7.37	7.87	.290	.310
J	22.10	23.88	.870	.940
M	11.10	16.51	.437	.650
N	15.37	16.38	.605	.645
Q		42.54		1.675
ØT	5.33	7.87	.210	.310
Z	7.62		.300	
ØW	⅜-24 UNF-2A			

Plastic Transistor TO-247



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.70	5.31	.185	.209
A	2.21	2.59	.087	.102
A	1.50	2.49	.059	.098
B	1.02	1.40	.040	.055
B	2.01	2.39	.079	.094
B	3.00	3.38	.118	.133
C	0.41	0.79	.016	.031
D	19.71	20.29	.776	.799
E	15.29	15.88	.602	.625
E1	5.13	5.79	.202	.228
L	14.20	14.78	.559	.582
L1	3.71	4.29	.146	.169
ØP	3.00	3.38	.118	.133
Q	5.31	5.69	.209	.224
ØR	4.52	5.49	.178	.216
S	5.31	5.72	.209	.225
T	7.16	8.13	.282	.320

Rectifiers DO-5



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	16.94	17.45	0.667	0.687
ØB	—	16.94	—	0.667
C	—	11.43	—	0.450
D	—	9.53	—	0.375
E	2.92	5.08	0.115	0.200
F	—	2.03	—	0.080
H	1.52	—	0.060	—
J	10.72	11.51	0.422	0.453
K	—	25.40	—	1.000
L	3.86	—	.156	—
ØQ	3.56	4.45	0.140	.175