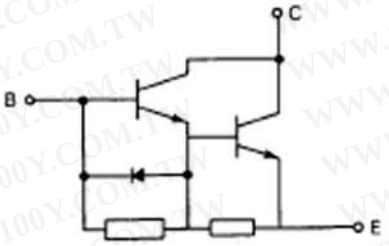
POWER BIPOLAR

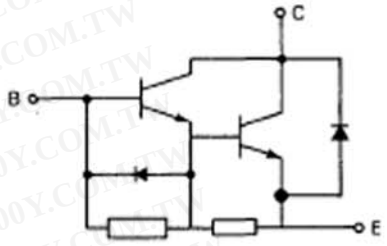
FAST SWITCHING TRANSISTORS AND DARLINGTONS

Internal schematic diagrams



Bipolar transistors

Darlingtons
except BUD 48 DI



Darlington BUD 48 DI

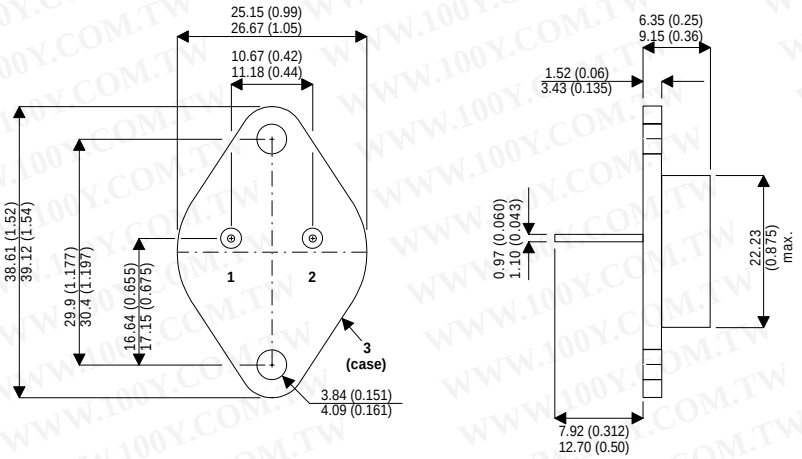
120 / 300 V V_{CBO} RANGE

I_C (A)	V_{CBO} (V)	V_{CEO} (V)	P_{tot} (W)	Package	Type NPN	$V_{CE(sat)}$ max (V)	I_C (A)	I_B (A)	t_r $t_d + t_r$* (1) max (µs)	t_{sj} t_s* max (µs)	t_{fj} t_f* max (µs)
4	200	125	31	TO 220	D44 Q1	1	2	0.2	0.4	2 * (1)	1.7 * (1)
4	250	175	31	TO 220	D44 Q3	1	2	0.2	0.4	2 * (1)	1.7 * (1)
4	300	225	31	TO 220	D44 Q5	1	2	0.2	0.4	2 * (1)	1.7 * (1)
10	160	125	106	SOT 93	BUX 10 P	0.6	10	1	1.5	1.2 * (1)	0.3 * (1)
12	240	120	85	TO 220	BUV 27	0.7	4	0.4	0.8*	2 *	0.15*
14	180	90	85	TO 220	BUV 26	1.5	12	1.2	0.6*	2 *	0.15* (1)
15	200	125	125	TO 220	BUT 60	0.9	24	2.4	—	1.5	0.2
15	300	200	120	TO 3	BUV 41	1.2	8	1	0.5	2	0.3
15	300	200	125	SOT 93	BUW 91	0.9	6	0.6	0.5	2	0.3
20	220	160	150	TO 3	BUX 11 N	0.6	8	0.8	1.5	1.5 * (1)	0.5 * (1)
20	250	125	120	TO 3	BUV 40	1.2	15	1.9	1	1.7	0.3
20	250	125	125	SOT 93	BUW 90	0.9	11	1.1	1	1.7	0.3
20	250	200	150	TO 3	BUX 11	0.6	6	0.6	1	1.8 * (1)	0.4 * (1)
20	300	200	150	SOT 93	BUW 51	0.9	10	1	0.6	2	0.3
20	300	200	150	TO 3	BUV 51	1.2	14	1.75	0.6	2	0.3
20	300	250	150	TO 3	BUX 12	1	5	0.5	1	2 * (1)	0.5 * (1)
25	160	90	120	TO 3	BUV 39	1.2	20	2.5	1.1	1.7	0.3
25	160	90	125	SOT 93	BUW 89	0.9	15	1.5	1.1	1.7	0.3
25	160	125	150	TO 3	BUX 10	0.6	10	1	1.5	1.2 * (1)	0.3 * (1)
25	250	125	150	SOT 93	BUW 50	0.9	20	2	0.6	1.7	0.3
25	250	125	150	TO 3	BUV 50	1.2	24	3	0.6	1.7	0.3
30	120	60	150	SOT 93	BUW 48	1.4	40	4	1.5*	1.65*	0.5 *
30	120	60	150	TO 3	BUW 38	1.4	40	4	1.5*	1.65*	0.5 *
30	160	80	150	SOT 93	BUW 49	1.2	30	3	1.2*	1.65*	0.5 *
30	160	80	150	TO 3	BUW 39	1.2	30	3	1.2*	1.65*	0.5 *
40	200	125	115	TOP 3 I	BUT 70 I	0.9	70	7	—	1.8	0.2
40	200	125	200	SOT 93	BUT 70	0.9	70	7	—	1.8	0.2
40	250	125	100	TOP 3 I	BUW 60 I	0.9	50	5	—	1.5	0.25
40	250	125	175	SOT 93	BUW 60	0.9	50	5	—	1.5	0.25
40	250	200	250	TO 3	BUV 21	0.6	12	1.2	1.2*	1.8 * (1)	0.4 * (1)
40	250	200	250	TO 3	BUX 21	1.5	25	3	1.2*	1.8 * (1)	0.4 * (1)
40	300	200	100	TOP 3 I	BUW 61 I	0.9	25	2.5	—	2.4	0.25
40	300	200	100	TOP 3 I	BUT 71 I	0.9	40	4	—	2.4	0.25
40	300	200	175	SOT 93	BUT 71	0.9	40	4	—	2.4	0.25
40	300	200	175	SOT 93	BUW 61	0.9	25	2.5	—	2.4	0.25
40	300	250	250	TO 3	BUV 22	0.6	25	2.5	1.3	2 * (1)	0.5 * (1)
40	300	250	350	TO 3	BUX 22	1.5	20	2.5	1.3*	2 * (1)	0.5 * (1)
47	120	60	250	TO 3	BUV 18	1.5	60	8	1.5*	1.7 *	0.5 *
47	160	80	250	TO 3	BUV 19	1.2	60	6	1.3*	1.7 *	0.5 *
50	160	125	250	TO 3	BUV 20	0.6	25	2.5	1.5	1.2 * (1)	0.3 * (1)
50	160	125	350	TO 3	BUX 20	1.2	50	5	1.5*	1.2 * (1)	0.3 * (1)
50	200	125	250	TO 3	BUT 90	0.9	70	7	1.2*	2 (1)	0.3 (1)
50	200	125	300	TO 3	BUT 100	0.9	100	10	—	2	0.2
50	250	125	250	TO 3	BUV 60	1.2	60	7.5	0.8	1.5	0.25
50	300	200	250	TO 3	BUV 61	1.2	40	5	0.7	2.4	0.25
50	300	200	250	TO 3	BUT 91	1.2	40	4	0.8	1.5 *	0.65*
60	300	200	350	TO 3	BUR 51	1	30	2	1	2 * (1)	0.6 * (1)
70	200	125	350	TO 3	BUR 50 S	1	35	2	1.2	2 * (1)	0.5 * (1)

For switching times, T_j = 100°C, unless otherwise specified. (1) T_j = 25°C

BUV51

Dimensions in mm (inches).



Bipolar NPN Device in a Hermetically sealed TO3 Metal Package.

Bipolar NPN Device.

V_{CEO} = 200V

I_C = 20A

TO3 (TO204AA)

PINOUTS

1 – Base 2 – Emitter Case - Collector

Parameter	Test Conditions	Min.	Typ.	Max.	Units
V_{CEO}*				200	V
$I_{C(CONT)}$				20	A
h_{FE}	@ (V_{CE} / I_C)	10			-
f_t					Hz
P_D				150	W

* Maximum Working Voltage