

Bipolar (continued)

Table 1. High Voltage Switching Power Transistors (continued)

V _{CEO(sus)} Volts Min	I _C Cont Amps Max	V _{CEV} Volts Min	Device Type NPN unless otherwise noted	h _{FE} Min/Max	@ I _C Amp	Resistive Switching			f _T MHz Min	P _D (Case) Watts @ 25°C	Case JEDEC/MOT
						t _s μs Max	t _f μs Max	@ I _C Amp			
400	40	600	MJ10023##★	50/600	10	2.5	0.9	20		250	TO-204/197
	30	850	BUS98	8 min	20	2.3	0.4	20		250	TO-204/197
	28	600	BUT13##	20 min	20	2.6	0.8	18		175	TO-204/1
	20	500	MJ10001#★	40/400	10	3	1.8	10	10**	175	TO-204/1
		500	MJ10005#★	40/400	10	1.5	0.5	10	10**	175	TO-204/1
		500	MJ13333★	10/60	5	4	0.7	10		175	TO-204/1
	15	650	MJ13090★	8 min	10	2.5	0.5	10	6 to 24	175	TO-204/1
		650	MJ16110	6/20	15	0.8 typ	0.1 typ	10		175	TO-204/1
		650	MJH16110	6/20	15	0.8 typ	0.1 typ	10		135	TO-218/340
		850	2N6547★	6/30	10	4	0.7	10		175	TO-204/1
		850	BUX48	8 min	10	2	0.4	10		175	TO-204/1
		850	BUV48	8 min	10	2	0.4	10		150	TO-218/340D
	12	700	MJE13009★	6/30	8	3	0.7	8	4	100	TO-220/221A
		700	MJF13009	6/30	8	3	0.7	8	4	40	—/221D
	10	950	MJ12010	4.2 min	5		1	5	6 typ	100	TO-204/1
		550	MJ10012#	100/2k	6	6	15	15	6	175	TO-204/1
		550	MJH10012#	100/2k	6	6	15	15	6	118	TO-218/340
		500	MJ10007##★	30/300	5	1.1	0.25	5	10**	150	TO-204/1
		600	MJ13015★	8/20	5	2	0.5	5		150	TO-204/1
	9	850	BUX47	7 min	6	2	0.4	6		150	TO-204/1
		850	BUV47	7 min	5	2	0.4	6		128	TO-218/340D
	8	850	2N6545★	7/35	5	4	1	5	6	125	TO-204/1
		800	MJE5742#	200/400	4	8 typ	2 typ	6		80	TO-220/221A
		800	MJE16080	5 min	8	2	0.5	5		80	TO-220/221A
		850	BUW12	6 min	6	4	0.8	5		125	TO-218/340
		850	BUX84	30 min	0.1	3.5	1.4	1	4	50	TO-220/221A
		700	MJE13007★	6/30	5	3	0.7	5	4	80	TO-220/221A
		700	MJE13007E	6/30	5	3	0.7	5	4	80	TO-220/221A
		700	MJF13007	6/30	5	3	0.7	5	4	40	—/221D
		650	MJ13080★	8 min	5	1.5	0.5	5		150	TO-204/1
		650	MJE16106	6/25	8	2 typ	0.1 typ	5		100	TO-220/221A
		650	MJH16106	6/25	8	2 typ	0.1 typ	5		125	TO-218/340
		450	MJ6503-PNP★	15 min	2	2	0.5	4		125	TO-204/1
		450	MJE5852-PNP★	15 min	2	2	0.5	4		80	TO-220/221A
	6	900	BU326A	30 typ	0.6	3.5	1**	2.5	6	90	TO-204/1
		900	BU426A	30 typ	0.6	2 typ	0.5 typ	2.5	6 typ	113	TO-218/340D
		850	BUV46	5 min	3.5	3	0.8	3.5	12	85	TO-220/221A
	5	850	2N6543★	7/35	3	4	0.8	3	6	100	TO-204/1
		850	BUW11	6 min	3	4	0.8	3	12 typ	125	TO-218/340
		700	BUL45	7 min	2	3	0.5	2		100	TO-220/221A
		650	MJ13070★	8 min	3	1.5	0.5	3		125	TO-204/1
		650	MJE13070★	8 min	3	1.5	0.5	3		80	TO-220/221A
	4	700	MJE13005★	6/30	3	3	0.7	3	4	75	TO-220/221A
	1.5	700	MJE13003★	5/25	1	4	0.7	1	5	40	TO-225AA/77R
	0.5	400	MJ4647-PNP	20 min	0.5	0.72*		0.05	40	5	TO-205AD/79
375	6	800	BU326	30 typ	0.6	3.5	1**	2.5	6	90	TO-204/1
		800	BU426	30 typ	0.6	2 typ	0.5 typ	2.5	6 typ	113	TO-218/340D
350	40	450	MJ10022##★	50/600	10	2.5	0.9	20		250	TO-204/197

★ Designers Data Sheet characterization

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Darlington with speed-up diode

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** |h_{fe}| @ 1 MHz

(continued)

Table 1. High Voltage Switching Power Transistors (continued)

V _{CEO(sus)} Volts Min	I _C Cont Amps Max	V _{CEV} Volts Min	Device Type NPN unless otherwise noted	h _{FE} Min/Max	@ I _C Amp	Resistive Switching			f _T MHz Min	P _D (Case) Watts @ 25°C	Case JEDEC/MOT
						t _s μs Max	t _f μs Max	@ I _C Amp			
200	15	225 250 200 200	2N6249 BUX41 MJ11019#-PNP MJ11020#	10/50 8 min 100 min 100 min	10 8 15 15	3.5 1.5	1 0.4	10 8	2.5 8 3# 3#	175 120 175 175	TO-204/1 TO-204/1 TO-204/1 TO-204/1
	3	250	BUY49P	30 min	0.5				25	20	TO-225AA/77
125	70	200	BUS50★	15 min	40	2	0.3	40		350	TO-204 Mod/197
	50	250 160	BUV60 BUV20★	10 min 10 min	50 50	1.2 1.2	0.25 0.25	50 50	8	250	TO-204/1 TO-204 Mod/197
	25	160	BUV10★	10 min	20	1.55	0.45	15		175	TO-204/1
	20	160	BUX40★	8 min	15	1	0.25	15		120	TO-204/1
100	80	120	BUV18A	10 min	80	1.1	0.25	80	8	250	TO-204/1
90	30	120	BUX39	8 min	20	1	0.25	20	8	120	TO-204/1
80	15	100 100	D44VH-10★ D45VH-10★-PNP	20 min 20 min	4 4	0.7 0.7	0.09 0.09	8 8	50 50	83 83	TO-220/221 TO-220/221
	10	80	D44E-3#★	1000 min	5	2	0.5	10		50	TO-220/221
		80	D45E-3#★-PNP	1000 min	5	2	0.5	10		50	TO-220/221
		80	D44H-10★	20 min	4	0.5	0.14	5	50	50	TO-220/221
		80	D45H-10★-PNP	20 min	4	0.5	0.14	5	40	50	TO-220/221

★ Designers Data Sheet characterization

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** |h_{FE}| @ 1 MHz

Table 2. Switchmode Technology Portfolio

DC Current Rating	Bipolar Tech- nology	RATED V _{CEO} * AND PACKAGE														
		200-350 V			400 V			450 V			500 V			700-800 V		
		TO-220	TO-204	TO-218	TO-220	TO-204	TO-218	TO-220	TO-204	TO-218	TO-220	TO-204	TO-218	TO-220	TO-204	TO-218
2-4 A	I	MJE13004	2N5838		MJE13005									MJE8500		
	II															
	III													MJE16032		MJH16032
5 A	I	2N6497				2N6543								MJE8502	MJ8502	
	II				MJE13070	MJ13070		MJE13071	MJ13070							
	III							MJE16002	MJ16002	MJH16002		MJ16002A	MJH16002A			
8 A	I	MJE13006			MJE13007	2N6545										
	II					MJ13080										
	III				MJE16080 MJE16106		MJH16106	MJE16081	MJ16006	MJH16006		MJ16006A	MJH16006A			
10-12 A	I	MJE13008			MJE13009										MJ8504	
	II		MJ13014			MJ13015										
	III														MJ16018	MJH16018
15 A	I		2N6546													
	II															
	III					MJ16110	MJH16110		MJ16010	MJH16010		MJ16010A	MJH16010A			
20 A	I		MJ13331			2N6547			MJ13334			MJ13335				
	II					MJ13100			MJ13101							
	III								MJ16014							

*Some devices listed may represent a family of devices within the voltage category, please check data sheets for voltage and gain variations.