National Semiconductor

Surface Mount Transistors

Saturated Switches—PNP

Type No.	Case Style	V_{CES}* V_{CBO} (V) Min	V_{CEO} (V) Min	V_{EBO} (V) Min	I_{CES}* I_{CBO} @ (nA) Max	@ V_{CB} (V)	h_{FE} Min	h_{FE} Max	@ I_C (mA)	& V_{CE} (V)	$V_{CE(SAT)}$ (V) Max	$V_{BE(SAT)}$ (V) Min	$V_{BE(SAT)}$ (V) Max	@ I_C (mA) ($I_B = \frac{I_C}{10}$)	C_{ob} (pF) Max	f_T (MHz) Min	f_T (MHz) Max	@ I_C (mA)	t_{off} (ns) Max	Test Conditions	Process No.
MMBT 3639	TO-236 (49)	6	6	4	50*	3	30	120	10	0.3	0.16			10	5.5	300		10	60	(Note 7)	65
							20		50	1	0.5			50							
MMBT 3640	TO-236 (49)	12	12	4	50*	6	20		50	1	0.2			10	5.5	300		10	75	(Note 7)	65
							30	120	10	0.3	0.6			50							
MMBT 4258	TO-236 (49)	12	12	4.5	10*	6	30	120	10	3	0.15	0.75	0.95	10	3	500		10	20	(Note 6)	65
							15		1	0.5											
							30		50	1	0.5		1.5	50							
MMBT 5228	TO-236 (49)	5	5	3	100*	4	30		10	3	0.4	0.65	1.25	10	5	300		10			65
MMBT 5771	TO-236 (49)	15	15	4.5	10	8	50	120	10	0.3	0.15		0.8	1	3	700		10	20	(Note 6)	65
							40		50	1	0.18	0.8	0.95	10							
							35		1	0.3	0.6		1.5	50							
MMBT 5771-1	TO-236 (49)	15	15	4.5	10	8	30	150	10	0.3	0.15		0.8	1	3	700		10	30	(Note 6)	65
							20		50	1	0.18	0.8	0.95	10							
							30		1	0.5	0.6		1.5	50							
MMBT 5571-2	TO-236 (49)	15	15	4.5	10	8	40	150	10	0.3	0.15		0.8	1	3	700		10	30	(Note 6)	65
							30		50	1	0.18	0.8	0.95	10							
							35		1	0.5	0.6		1.5	50							
MMBT 5910	TO-236 (49)	20	20	4.5	10*	10	30		50	1	0.15	0.75	0.95	10	3	700		10	20	(Note 6)	65
							30	120	10	0.3											
							15		1	0.5	0.5		1.5	50							

TEST CONDITIONS:

Note 1: $V_{CC} = 3V$, $I_C = 10$ mA, $I_{B1} = 3$ mA, $I_{B2} = 1.5$ mA
Note 2: $V_{CC} = 3V$, $I_C = 10$ mA, $I_{B1} = 3$ mA, $I_{B2} = 1$ mA
Note 3: $V_{CC} = 10V$, $I_C = 300$ mA, $I_{B1} = I_{B2} = 30$ mA
Note 4: $V_{CC} = 2V$, $I_C = 30$ mA, $I_{B1} = I_{B2} = 3$ mA
Note 5: $V_{CC} = 25V$, $I_C = 300$ mA, $I_{B1} = I_{B2} = 30$ mA
Note 6: $V_{CC} = 25V$, $I_C = 600$ mA, $I_{B1} = I_{B2} = 50$ mA
Note 7: $V_{CC} = 30V$, $I_C = 500$ mA, $I_{B1} = I_{B2} = 50$ mA
Note 8: $V_{CC} = 30V$, $I_C = 1A$, $I_{B1} = I_{B2} = 100$ mA
Note 9: $V_{CC} = 3V$, $I_C = 10$ mA, $I_{B1} = I_{B2} = 1$ mA
Note 10: $V_{CC} = 10.7V$, $I_C = 1A$, $I_{B1} = I_{B2} = 100$ mA
Note 11: $V_{CC} = 3V$, $I_C = 10$ mA, $I_{B1} = I_{B2} = 3$ mA
Note 12: $V_{CC} = 3V$, $I_C = 10$ mA, $I_{B1} = I_{B2} = 3.3$ mA

T-37-01