

SMALL-SIGNAL TRANSISTORS & DIODES & MEDIUM-POWER RECTIFIERS

Small-signal FETs

N-CHANNEL VERTICAL D-MOSFETS

type number	ratings			characteristics									package
	V _{DS} max. (V)	I _D max. (mA)	P _{tot} ¹⁾ max. (mW)	V _{GS(th)} min. (V)	V _{GS(th)} max. (V)	R _{DS(on)} max. (Ω)	I _D /V _{GS} at (mA/V)	t _{on} ²⁾ typ. (ns)	t _{off} ³⁾ typ. (ns)	Y _{fs} typ. (mS)	C _{is} typ. (pF)	C _{rs} typ. (pF)	
LEADED TYPES													
BS107	200	120	500 ⁴⁾	0.8	2.8	28	20/2.6	4	15	250	70	5	TO-92
BS107A	200	250	600 ⁴⁾	1.0	3.0	6	100/10	5	15	350	45	3.5	TO-92
BS108	200	230	1000	0.4	1.8	8	100/2.8	5	20	400	65	5	TO-92
BS170	60	500	830	0.8	3.0	5	200/10	4	4	200	25	6	TO-92
BSD254(A) & (AR)	250	200	850	0.6	1.4	20	20/0	10 ⁶⁾	30 ⁶⁾	200 ⁷⁾	90 ⁶⁾	15 ⁶⁾	TO-92
BSN10(A)	50	175	830	0.4	2.0	15	100/10	5	10	60	7	2	TO-92
BSN204(A)	200	250	1000	0.4	1.8	8	100/2.8	5	20	400	65	5	TO-92
BSN205(A)	200	300	1000	0.8	2.8	6	400/10	5	20	350	45	3.5	TO-92
BSN254(A)	250	300	1000	0.8	2.0	6.5	300/10	5	15	400	65	5	TO-92
BSN274(A)	270	250	1000	0.8	2.0	8	250/10	5	20	400	65	5	TO-92
BSN304(A)	300	250	1000	0.8	2.0	8	250/10	10 ⁶⁾	30 ⁶⁾	380	57	15	TO-92
BSS89	200	300	1000	0.8	2.0	6	400/10	5	15	350	45	3.5	TO-92
BSS91	200	300	1000	0.8	2.0	6	400/10	5	15	353	45	3.5	TO-18
BSS100	100	250	830	0.8	2.8	6	120/10	4	10	140	24	4	TO-92
BST70A	80	500	1000	1.5	3.5	4	500/10	10 ⁶⁾	15 ⁶⁾	300	45	8	TO-92
BST72A	80	300	830	1.5	3.5	10	150/5	4	4	150	15	3	TO-92
BST74A	200	250	1000	0.8	2.8	12	250/10	4	15	250	70	5	TO-92
BST76A	180	300	1000	0.7	2.4	10	15/3	10 ⁶⁾	15 ⁶⁾	250	50	6	TO-92
BST78	450	750	15000 ⁵⁾	2.0	4.0	14	100/10	10 ⁶⁾	100 ⁶⁾	400	75	3	TO-126
BST124	250	450	6000	1.4	0.6	12	250/5	10 ⁶⁾	30 ⁶⁾	200 ⁷⁾	90 ⁷⁾	15 ⁶⁾	TO-126
VN2406L	240	210	1000	0.8	2.0	10	100/2.5	10	30	400	65	5	TO-92
VN2410L	240	150	1000	0.8	2.0	10	500/10	5	20	400	65	5	TO-92
2N7000	60	280	830	0.8	3.0	5	500/10	4	4	200	25	6	TO-92
SURFACE-MOUNT TYPES													
BSN20	50	100	300 ⁸⁾	0.4	1.8	15	100/10	5	10	60	7	2	SOT23
BSP89	240	350	1500	0.8	2.0	6	340/10	10 ⁶⁾	30 ⁶⁾	350	65	20	SOT223
BSP106	60	425	1500	0.8	3.0	4	200/10	2	10	200	25	6	SOT223
BSP107	200	200	1500	0.8	2.4	28	20/2.6	2	5	180	50	4	SOT223
BSP108	80	500	1500	1.5	3.5	3	500/10	4	10	300	45	8	SOT223
BSP110	80	325	1500	0.8	2.8	7	200/10	2	5	150	15	3	SOT223
BSP120	200	250	1500	0.8	2.8	12	250/10	3	15	250	45	5	SOT223
BSP121	240	300	1000	0.8	2.0	6	400/10	80	145	180	110	5	SOT223
BSP122	200	650	1500	1.0	3.0	2	1500/10	35 ⁶⁾	50 ⁶⁾	800	120	9	SOT223
BSP124 ⁹⁾	250	250	1500	0.6	1.4	12	250/5	10 ⁶⁾	30 ⁶⁾	200 ⁷⁾	90 ⁷⁾	15 ⁶⁾	SOT223
BSP126	250	350	1500	0.8	2.0	6.5	300/10	5	20	400	65	5	SOT223
BSP127	270	350	1500	0.8	2.0	8	250/10	5	20	400	65	5	SOT223
BSP128	200	350	1500	0.4	1.8	8	100/2.8	5	20	400	65	5	SOT223
BSP130 ⁹⁾	300	300	1500	0.8	2.0	8	250/10	10 ⁶⁾	30 ⁶⁾	380	57	2.6	SOT223
BSP145	450	750	1500	2.0	4.0	14	500/10	10 ⁶⁾	100 ⁶⁾	400	100	3	SOT223
BSP152	200	550	1500	1.5	3.5	2.5	750/10	15 ⁶⁾	30 ⁶⁾	400 ⁷⁾	100	8	SOT223
BSS87	240	300	1000	0.8	2.0	6	400/10	10	25	350	45	3.5	SOT89
BSS123	100	150	250	0.8	2.8	6	120/10	4	10	140	24	4	SOT23
BSS131	240	100	360	0.8	2.8	16	100/10	20	40	100	20	2.5	SOT23
BSS138	50	200	360	0.5	1.5	3.5	200/5	16	40	200	40	5	SOT23
BST80	80	500	1000	1.5	3.5	4	500/10	10 ⁶⁾	15 ⁶⁾	300	45	8	SOT89
BST82	80	175	300 ⁸⁾	1.5	3.5	10	150/5	4	4	150	15	3	SOT23
BST84	200	250	1000	0.8	2.8	12	250/10	4	15	250	70	5	SOT89

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N-CHANNEL VERTICAL D-MOSFETS (CONTINUED)

type number	ratings			characteristics									package	
	V_{DS}	I_D	P_{tot} ¹⁾	$V_{GS(th)}$		$R_{DS(on)}$	at	t_{on} ²⁾	t_{off} ³⁾	$ Y_{fs} $	C_{is}	C_{fs}		
	max. (V)	max. (mA)	max. (mW)	min. (V)	max. (V)	max. (Ω)	I_D/V_{GS} (mA/V)	typ. (ns)	typ. (ns)	typ. (mS)	typ. (pF)	typ. (pF)		
SURFACE-MOUNT TYPES CONTINUED														
BST86	180	300	1000	0.7	2.7	10	15/3	10 ⁶⁾	15 ⁶⁾	250	50	6	SOT89	
PMBF107	200	100	250	0.8	2.4	17	250/10	2	5	180	50	4	SOT23	
PMBF170	60	500	300 ⁸⁾	0.8	3.0	5	200/10	4	4	200	25	6	SOT23	
2N7002	60	180	300 ⁸⁾	0.8	3.0	5	500/10	10	15	200	25	6	SOT23	

1) $T_{amb} = 25^\circ\text{C}$

2) $t_{on} = t_{delay} + t_{rise}$

3) $t_{off} = t_{delay} + t_{fall}$

4) $T_{case} = 25^\circ\text{C}$

5) $T_{amb} = 75^\circ\text{C}$

6) maximum value

7) minimum value

8) mounted on ceramic substrate measuring 10 mm × 8 mm × 0.7 mm

9) depletion mode