

Germanium Transistors

	Type No.	Case	Construction (see note 1)	Maximum Ratings at 25°C amb.					Characteristics									SPECIAL FEATURES
				V _{CB} V	V _{CE} V	V _{EB} V	I _C A	P _{tot} W	h _{FE}			f _T		V _{CE(SAT)}				
									I _C mA	Min.	Max.	I _C mA	Min. Mc/s	I _C mA	I _B mA	Max. V		
NPN General Purpose and Switching	2N388	TO5	A	25	20	15	0.2	0.15	200	30	—	1	5.0φ	—	—	—		
	2N388A	TO5	A	40	40	15	0.2	0.15	200	30	—	1	5.0φ	—	—	—		
	2N1302	TO5	A	25		25	0.3	0.15	10	20	—	1	3.0φ	10	0.5	0.2		
	2N1304	TO5	A	25		25	0.3	0.15	10	40	200	1	5.0φ	10	0.25	0.2		
	2N1306	TO5	A	25		25	0.3	0.15	10	60	300	1	10.0φ	10	0.17	0.2		
	2N1308	TO5	A	25		25	0.3	0.15	10	80	—	1	15.0φ	10	0.13	0.2		
PNP General Purpose and Switching	2G301	SO2	A	-20	-20	-10	0.3	0.2	-1	30*	—	-1	3.0	-100	-4.0	-0.22		
	2G302	SO2	A	-20	-20	-10	0.3	0.2	-1	45*	—	-1	7.0	-100	-4.0	-0.22		
	2G303	SO2	A	-30	-30	-10	0.3	0.2	-1	30*	—	-1	3.0	-100	-4.0	-0.22		
	2G304	SO2	A	-30	-20	-10	0.3	0.2	-1	45*	—	-1	7.0	-100	-4.0	-0.22		
	2G306	SO2	A	-20		-10	0.3	0.2	-1	90*	—	-1	12.0	-100	-4.0	-0.20		
	2N1303	TO5	A	-30		-25	0.3	0.15	-10	20	—	-1	3.0φ	-10	-0.5	-0.2		
	2N1305	TO5	A	-30		-25	0.3	0.15	-10	40	200	-1	5.0φ	-10	-0.25	-0.2		
	2N1307	TO5	A	-30		-25	0.3	0.15	-10	60	300	-1	10.0φ	-10	-0.17	-0.2		
	2N1309	TO5	A	-30		-25	0.3	0.15	-10	80	—	-1	15.0φ	-10	-0.13	-0.2		
PNP General Purpose Amplifiers	2G308	SO2	A	-20	-20	-10	0.3	0.20	-1	50*	—	-1	3.0	—	—	—	NF < 5dB at 1 Kc/s	
	2G309	SO2	A	-20	-20	-10	0.3	0.20	-1	170*	—	-1	12.0	—	—	—		
	2G371	SO2	A	-20	-20	-10	0.3	0.20	-1	35*	130*	-1	1.0	—	—	—		
	2G374	SO2	A	-20	-20	-10	0.3	0.20	-1	75*	265*	-1	1.0	—	—	—		
	2G377	SO2	A	-60	-60	-10	0.3	0.20	-250	15	—	-1	1.0	—	—	—		
	2N404	TO5	A	25	24	12	0.1	0.15	24	24	—	-1	4.0	24	1.0	0.2		
2N404A	TO5	A	40	35	25	0.1	0.15	24	24	—	-1	4.0	24	1.0	0.2			
PNP High Speed Switches	2N705	TO18	M	-15	-15	-35	0.05	0.30†	-10	25	—	-10	‡300	-10	-0.4	-0.3	— 2G104 Total switching time 275nS — 2G103 — 2G106	
	2N711	TO18	M	-12	-12	-1.0	0.05	0.30‡	-10	20	—	-10	‡300	-10	-0.5	-0.5		
	2N711A	TO18	M	-15	-15	-2.0	0.05	0.30†	-10	25	—	-10	‡300φ	-10	-0.4	-0.5		
	2N711B	TO18	M	-18	-15	-2.0	0.10	0.15	-10	30	150	-10	150	-10	-0.4	-0.25		
PNP High Frequency Amplifiers	GM290A	TO18-2	EM	-20	-15	-0.3	0.05	0.075	-3	20	—	-3	‡700	—	—	—	N.F. < 9dB at 800 Mc/s N.F. < 5.5dB at 200 Mc/s N.F. 7dB max. at 3 G/Cs N.F. 5.5 dB max. at 1.5 Gc/s N.F. 4.5 dB max. at 1.5 Gc/s available in modified pellet-pak TIXM106 N.F. 2.5 dB max. at 400 Mc/s N.F. 2.5 dB max. at 400 Mc/s Temperature range -65°C to 125°C. Specified in S-parameters Also available in modified pellet-pak as TIXM107/8	
	GM378A	TO18-2	EM	-20	-15	-0.3	0.05	0.075	-3	20	—	-3	400	—	—	—		
	TIXM103	TI-LINE	P	12	10	0.3	0.02	0.04	2	10	250	2	1800	—	—	—		
	TIXM104	TI-LINE	P	12	10	0.3	0.02	0.04	2	10	250	2	1400	—	—	—		
	TIXM105	TI-LINE	P	12	10	0.3	0.02	0.04	2	10	250	2	2200	—	—	—		
	2N5043	TO72	P	15	7	0.3	0.03	0.03	3	15	150	3	1500	—	—	—		
2N5044	TO72	P	15	7	0.3	0.03	0.03	3	15	150	3	1000	—	—	—			

NOTE 1: The following symbols have been used throughout the Product Summary:

Under "Construction":

A — Alloyed
D — Diffused
E — Epitaxial
G — Grown
M — Mesa
P — Planar

Under h_{FE}:

* — h_{FE}

Under f_T:

φ — f_{hfb}
△ — f_{hfe}
‡ — typical

Under Dissipation:

† — dissipation at T_{case} = 25°C

The transistor types tabulated in pp 7-17 form the Texas Instruments Limited Preferred and Guidance list for new designs. In addition, the types listed overleaf are readily available. Omission of a type from the Preferred list does not imply that a limit has been set to the production life.