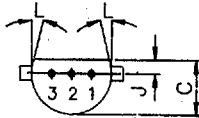


DIM	MIN	MAX
A	4,32	5,33
B	4,45	5,20
C	3,18	4,19
D	0,41	0,55
E	0,35	0,50
F	—	0,55
G	1,14	1,40
H	—	2,54
K	12,70	—
L	5 DEG	

ALL DIMENSIONS ARE IN M.M.



PIN CONFIGURATION AVAILABLE IN TO-237

CDIL Code Style	PIN 1	PIN 2	PIN 3
TO-237	Emitter	Base	Collector
TO-237-1	Base	Collector	Emitter
TO-237-2	Collector	Base	Emitter

TO-237 Plastic Package Transistors (NPN)

Maximum Ratings							Electrical Characteristics (Ta=25°C, Unless Otherwise Specified)													
Type No.	V <sub>CB0</sub> (V) Min	V <sub>CEO</sub> (V) Min	V <sub>EB0</sub> (V) Min	P <sub>D</sub> (W) @Tc=25°C	I <sub>C</sub> (A)	I <sub>CM</sub> (A)	I <sub>CB0</sub> (µA) Max	V <sub>CB</sub> (V)	I <sub>FE</sub> @ Min	I <sub>C</sub> & I <sub>CE</sub> (mA) Max	V <sub>CE</sub> (V) Max	V <sub>CE(SAT)</sub> (V) & (V) Max	V <sub>BE(SAT)</sub> (V) Min	I <sub>C</sub> @ (mA) Max	C <sub>ob</sub> (pF) Typ	f <sub>t</sub> (MHz) Min	f <sub>t</sub> @ (MHz) Typ	I <sub>C</sub> (mA) Max	t(off) (ns) Max	CDIL Case Style
2N6705	60	45	5	0.75	1.5		0.1	60	40	50	2	0.5		500		50	400	200		TO-237-1
									40	250	250	2	1	1000						
									25	500	2									
2N6706	80	60	5	0.75	1.5		0.1	80	40	50	2	0.5		500		50	400	200		TO-237-1
									40	250	250	2	1	1000						
									25	500	2									
2N6707	100	80	5	0.75	1.5		0.1	100	40	50	2	0.5		500		50	400	200		TO-237-1
									40	250	250	2	1	1000						
									25	500	2									
2N6711	160	160	7	0.75	0.5		0.05	100	15	1	10					40	200	10		TO-237-1
									15	200	10									
									30	30	10									
2N6712	250	250	7	0.75	0.5		0.05	200	15	1	10					40	200	10		TO-237-1
									15	200	10									
									30	30	10									
2N6713	300	300	7	0.75	0.5		0.05	250	15	1	10					40	200	10		TO-237-1
									15	10	10									
									30	200	30	10								
2N6714	40	30	5	0.75	1		0.1	40	55	10	1	0.5		100		50	500	50		TO-237-2
									60	100	1									
									50	250	1000	1								

# TO-237 Plastic Package Transistors (NPN)



Maximum Ratings							Electrical Characteristics (Ta=25°C, Unless Otherwise Specified)													
Type No.	V <sub>CEO</sub> (V)	V <sub>CE0</sub> (V)	V <sub>EB0</sub> (V)	P <sub>D</sub> (W)	I <sub>C</sub> (A)	I <sub>CM</sub> (A)	I <sub>CEO</sub> (μA)	V <sub>CB</sub> (V)	h <sub>FE</sub>	I <sub>C</sub> & V <sub>CE</sub>	V <sub>CE(SAT)</sub> (V) & V <sub>BE(SAT)</sub> (V)	I <sub>C</sub> @ (mA)	C <sub>ob</sub> (pF)	f <sub>t</sub> (MHz)	t <sub>off</sub> (ns)	CDIL Case Style				
	Min	Min	Min	@Tc=25°C			Max		Min Max	Max	Max Min Max	Typ Max	Min Typ Max	Max						
2N6715	50	40	5	0.75	1.5		0.1	50	55	10	1	0.5	1000		50	400	50	TO-237-2		
									60	100	1									
									50	250	1000	1								
2N6716	60	60	5	0.75	1.5		0.1	40	80	50	1	0.35	250		50	500	50	TO-237-2		
									50	250	250	1								
									20	500	1									
2N6717	80	80	5	0.75	1		0.1	60	80	50	1	0.35	250		50	500	200	TO-237-2		
									50	250	250	1								
									20	500	1									
2N6718	100	100	5	0.75	1		0.1	80	80	50	1	0.35	350		50	500	200	TO-237-2		
									50	250	250	1								
									20	500	1									
2N6719	300	300	7	0.75	0.5		0.1	200	25	1	10				30	300	15	TO-237-2		
									40	10	10									
									40	200	30	10								
2N6731	100	80	5	0.75	1		0.1	80	100	10	2	0.35	350		50	500	200	TO-237-2		
									100	300	350	2								
2N6733	200	200	6	0.75	0.5		0.1	160	25	1	10		20		50	200	10	TO-237-2		
									40	200	10	10								
2N6734	250	250	6	0.75	0.5		0.1	200	25	1	10		2		50	200	10	TO-237-2		
									40	200	10	10								
2N6735	300	300	6	0.75	0.5		0.1	260	25	1	10				50	200	10	TO-237-2		
									40	200	10	10								
CIL857	200	200	6	0.9	0.5		0.05	150	70	1	10	0.5	1	50	7	80	10	TO-237-1		
									70	400	10	10								
									50	30	10									
CIL857GR	200	200	6	0.9	0.5		0.05	150	70	1	10	0.5	1	50	7	80	10	TO-237-1		
									200	400	10	10								
									50	30	10									
CIL857O	200	200	6	0.9	0.5		0.05	150	70	1	10	0.5	1	50	7	80	10	TO-237-1		
									70	140	10	10								
									50	30	10									
CIL857Y	200	200	6	0.9	0.5		0.05	150	70	1	10	0.5	1	50	7	80	10	TO-237-1		
									120	240	10	10								
									50	30	10									
CIL858	250	250	6	0.9	0.5		0.05	200	70	1	10	0.5	1	50	7	80	10	TO-237-1		
									70	400	10	10								
									50	30	10									
CIL858GR	250	250	6	0.9	0.5		0.05	200	70	1	10	0.5	1	50	7	80	10	TO-237-1		
									200	400	10	10								
									50	30	10									
CIL858O	250	250	6	0.9	0.5		0.05	200	70	1	10	0.5	1	50	7	80	10	TO-237-1		
									70	140	10	10								
									50	30	10									
CIL858Y	250	250	6	0.9	0.5		0.05	200	70	1	10	0.5	1	50	7	80	10	TO-237-1		
									120	240	10	10								
									50	30	10									
CIL859	300	300	6	0.9	0.5		0.05	250	70	1	10	0.5	1	50	7	80	10	TO-237-1		
									70	400	10	10								
									70	30	10									

Maximum Ratings							Electrical Characteristics (Ta=25°C, Unless Otherwise Specified)														
Type No.	V <sub>CEO</sub> (V)	V <sub>CEO</sub> (V)	V <sub>EB0</sub> (V)	P <sub>D</sub> (W)	I <sub>C</sub> (A)	I <sub>CM</sub> (A)	I <sub>CBO</sub> (μA)	V <sub>CB</sub> (V)	h <sub>FE</sub> @		I <sub>C</sub> & V <sub>CE</sub> (mA)	V <sub>CE(SAT)</sub> (V) & (V)	V <sub>BE(SAT)</sub> (V)	I <sub>C</sub> @ (mA)	C <sub>ob</sub> (pF)		f <sub>t</sub> (MHz)		I <sub>C</sub> (mA)	t(off) (ns)	CDIL Case Style
	Min	Min	Min	@Tc=25°C	(A)	Max	Max	Min	Max	Min	Max	Max	Min	Max	Typ	Max	Min	Typ	Max	Max	
CIL859GR	300	300	6	0.9	0.5		0.05	250	70	200	1	10	0.5	1	50	7	80		10		TO-237-1
CIL859D	300	300	6	0.9	0.5		0.05	250	70	400	1	10	0.5	1	50	7	80		10		TO-237-1
CIL859Y	300	300	6	0.9	0.5		0.05	250	70	140	1	10	0.5	1	50	7	80		10		TO-237-1
CIL2229	200	150	5	0.75	0.05		0.1	200	70	240	10	5	0.5	1	10	4	5	120	10		TO-237-1
CIL2229D	200	150	5	0.75	0.05		0.1	200	70	140	10	5	0.5	1	10	4	5	120	10		TO-237-1
CIL2229Y	200	150	5	0.75	0.05		0.1	200	120	240	10	5	0.5	1	10	4	5	120	10		TO-237-1
CIL2230	200	160	5	0.75	0.1		0.1	200	120	400	10	10	0.5		50	7	50		10		TO-237-1
CIL2230A	200	180	5	0.8	0.1		0.1	200	120	400	10	10	0.5		50	7	50		10		TO-237-1
CIL2230AGR	200	180	5	0.8	0.1		0.1	200	200	400	10	10	0.5		50	7	50		10		TO-237-1
CIL2230AY	200	180	5	0.8	0.1		0.1	200	120	240	10	10	0.5		50	7	50		10		TO-237-1
CIL2230GR	200	160	5	0.75	0.1		0.1	200	200	400	10	10	0.5		50	7	50		10		TO-237-1
CIL2230Y	200	160	5	0.75	0.1		0.1	200	120	240	10	10	0.5		50	7	50		10		TO-237-1
CIL2328A	30	30	5	1	1.5		0.1	30	100	320	500	2	2		1500	30		120		500	TO-237-1
CIL2328AO	30	30	5	1	1.5		0.1	30	100	200	500	2	2		1500	30		120		500	TO-237-1
CIL2328AY	30	30	5	1	1.5		0.1	30	100	300	500	2	2		1500	30		120		500	TO-237-1
CIL2331	80	60	8	1	0.7		0.1	60	40	240	50	2	0.7	1.2	500	8		30	50	50	TO-237-1
CIL2331D	80	60	8	1	0.7		0.1	60	40	140	50	2	0.7	1.2	500	8		30	50	50	TO-237-1
CIL2331Y	80	60	8	1	0.7		0.1	60	120	240	50	2	0.7	1.2	500	8		30	50	50	TO-237-1
CIL2482	300	300	7	0.9	0.1		1	240	20	30	4	10	1	1	10	3	50		20		TO-237-1
CIL2655	50	50	5	0.75	1.5	2	1	50	70	240	500	2	0.5		1000	30		100		500	TO-237-1
CIL2655D	50	50	5	0.75	1.5	2	1	50	70	140	500	2	0.5		1000	30		100		500	TO-237-1
CIL2655Y	50	50	5	0.75	1.5	2	1	50	120	240	500	2	0.5		1000	30		100		500	TO-237-1
CN100	60	50	5	0.75	1		0.05	40	40	300	150	10	0.6		150			80			TO-237
CN100A	60	50	5	0.75	1		0.05	40	40	120	150	10	0.6		150			80			TO-237
CN100B	60	50	5	0.75	1		0.05	40	100	300	150	10	0.6		150			80			TO-237

# TO-237 Plastic Package Transistors (NPN)



Maximum Ratings						Electrical Characteristics (Ta=25°C, Unless Otherwise Specified)														
Type No.	V <sub>CEO</sub> (V)	V <sub>CE0</sub> (V)	V <sub>EBO</sub> (V)	P <sub>D</sub> (W)	I <sub>C</sub> (A)	I <sub>CM</sub> (A)	I <sub>CS0</sub> (μA)	V <sub>CB</sub> (V)	h <sub>FE</sub> @		I <sub>C</sub> & V <sub>CE</sub> (mA)	V <sub>CE(SAT)</sub> (V) & V <sub>BE(SAT)</sub> (V)		I <sub>C</sub> @ (mA)	C <sub>ob</sub> (pF)	f <sub>T</sub> (MHz)		I <sub>C</sub> (mA)	t(off) (ns)	CDIL Case Style
	Min	Min	Min	@Tc=25°C			Max		Min	Max		Max	Min	Max	Typ	Max	Min	Typ	Max	
CSC1573	250	250	5	1	0.07		2	12	30	220	5 10	1.2		50	10	50		10		TO-237-1
CSC1573A	300	300	7	1	0.07		2	12	30	220	5 10	1.2		50	8	50		10		TO-237-1
CSC1573AP	300	300	7	1	0.07		2	12	30	100	5 10	1.2		50	8	50		10		TO-237-1
CSC1573AQ	300	300	7	1	0.07		2	12	60	150	5 10	1.2		50	8	50		10		TO-237-1
CSC1573AR	300	300	7	1	0.07		2	12	100	220	5 10	1.2		50	8	50		10		TO-237-1
CSC1573P	250	250	5	1	0.07		2	12	30	100	5 10	1.2		50	10	50		10		TO-237-1
CSC1573Q	250	250	5	1	0.07		2	12	60	150	5 10	1.2		50	10	50		10		TO-237-1
CSC1573R	250	250	5	1	0.07		2	12	100	220	5 10	1.2		50	10	50		10		TO-237-1
CSC2330	300	300	6	0.9	0.1		0.1	200	40	240	20 10	0.5		10	4	50				TO-237-1
CSC23300	300	300	6	0.9	0.1		0.1	200	70	140	20 10	0.5		10	4	50				TO-237-1
CSC2330R	300	300	6	0.9	0.1		0.1	200	40	80	20 10	0.5		10	4	50				TO-237-1
CSC2330Y	300	300	6	0.9	0.1		0.1	200	120	240	20 10	0.5		10	4	50				TO-237-1
CSC2331	80	60	6	1	0.7		0.1	60	40	240	50 2	0.7	1.2	500	8	30	50	50		TO-237-1
CSC23310	80	60	6	1	0.7		0.1	60	70	140	50 2	0.7	1.2	500	8	30	50	50		TO-237-1
CSC2331R	80	60	6	1	0.7		0.1	60	40	80	50 2	0.7	1.2	500	8	30	50	50		TO-237-1
CSC2331Y	80	60	6	1	0.7		0.1	60	120	240	50 2	0.7	1.2	500	8	30	50	50		TO-237-1
CSC2383	160	160	6	0.9	1		1	150	60	320	200 5	1.5		500	20	20		200		TO-237-1
CSC23830	160	160	6	0.9	1		1	150	100	200	200 5	1.5		500	20	20		200		TO-237-1
CSC2383R	160	160	6	0.9	1		1	150	60	120	200 5	1.5		500	20	20		200		TO-237-1
CSC2383Y	160	160	6	0.9	1		1	150	160	320	200 5	1.5		500	20	20		200		TO-237-1
CSD468	25	20	5	0.9	1		1	20	85	240	500 2	0.5		800	22	190		500		TO-237-1
CSD468B	25	20	5	0.9	1		1	20	85	170	500 2	0.5		800	22	190		500		TO-237-1
CSD468C	25	20	5	0.9	1		1	20	120	240	500 2	0.5		800	22	190		500		TO-237-1
CTN368		20	5		1		10	25	50 85 60	375 500 1000	5 10 1 1	0.5		1000	27	60		10		TO-237
CTN391	200	200	6	0.75	0.5		0.1	160	25 40		1 10 10 10	2	2	20		5		50		TO-237
CTN392	250	250	6	0.75	0.5		0.1	200	25 40		1 10 10 10	2	2	20		5		50		TO-237
CTN393	300	300	6	0.75	0.5		0.1	200	25 40		1 10 10 10	2	2	20		5		50		TO-237
CTN635	45	45	5	0.75	1	1.5	10	30	25 40 25	5 250 500	2 2 2	0.5	1	1	7		130	1000		TO-237
CTN637	60	60	5	0.75	1	1.5	10	30	40	160	0.15 2	0.5	1	1	7		130	1000		TO-237

Maximum Ratings							Electrical Characteristics (Ta=25°C, Unless Otherwise Specified)															
Type No.	V <sub>CB0</sub> (V)	V <sub>CE0</sub> (V)	V <sub>EB0</sub> (V)	P <sub>D</sub> (W)	I <sub>C</sub> (A)	I <sub>CM</sub> (A)	I <sub>CB0</sub> (μA)	V <sub>CB</sub> (V)	h <sub>FE</sub> @		I <sub>C</sub> & V <sub>CE</sub>	V <sub>CE(SAT)</sub> (V) & V <sub>BE(SAT)</sub> (V)		I <sub>C</sub> @ (mA)	C <sub>ob</sub> (pF)		f <sub>t</sub> @ (MHz)			t(off) (ns)	CDIL Case Style	
	Min	Min	Min	@Tc=25°C	(A)	(A)	Max	(V)	Min	Max	(mA)	(V)	Min	Max	Typ	Max	Min	Typ	Max	Max		
CTN639	100	80	5	0.75	1	1.5	10	30	25	5	2	0.5	1	1	7			130	10		TO-237	
*MPSW13	30	30	10	1	1		0.1	30	5	10	5	1.5		100				125	10		TO-237-2	
									10	100	5											
TN368	20	5					10	25	50	5	10	0.5		1000	27			60	10		TO-237-2	
									85	375	500	1										
									60	1000	1											
TN391	200	200	6	0.75	0.5		0.1	160	25	1	10	2	2	20		2	50	10		TO-237		
									40	10	10											
TN392	250	250	8	0.75	0.5		0.1	200	25	1	10	2	2	20		2	50	10		TO-237		
									40	10	10											
TN393	300	300	8	0.75	0.5		0.1	200	25	1	10	2	2	20		2	50	10		TO-237		
									40	10	10											
TN635	45	45	5	0.75	1		0.1	30	40	250	150	0.5		500			130			TO-237-2		
									25	500	2											
TN637	60	60	5	0.75	1		0.1	30	40	160	150	0.5		500			130			TO-237-2		
									25	500	2											
TN639	100	80	5	1.75	1		0.1	30	40	160	150	0.5		500			130			TO-237-2		
									25	500	2											
TN2017	60	60	8	0.75	0.5		10	30	35	10	10									TO-237-2		
									50	200	200											
									20	1000	10											
TN2102	120	65	7	0.75	0.5		0.01	60	10	120	0.01	0.5	1.1	150		15	60	50		TO-237-2		
									20		0.1											
									35		10											
									40	120	150											
									25		500											
									10		1000											
TN2218A	75	40	6	0.75	0.6		0.01	60	25	500	10	0.3	0.6	1.2	150	8	250	20		TO-237-2		
									20	150	1	1	2	500								
									40	120	150											
									35		10											
									25		1											
									20		0.1											
TN2219	60	30	5	0.75	0.6		0.01	50	30	500	10	0.4	1.3	150	8	250	20		TO-237-2			
									50	150	1	1.6	2.6	500								
									100	300	150											
									75		10											
									50		1											
									35	300	0.1											
TN2219A	75	40	6	0.75	0.6		0.01	60	40	500	10	0.3	0.6	1.2	150	8	300	20		TO-237-2		
									50	150	1	1	2	500								
									100	300	150											
									75		10											
									50		1											
									35	300	0.1											
TN2270	60	45	7	0.75	0.5		0.05	60	30	1	10	0.9	1.2	150	15	100	50		TO-237-2			
									50	200	150											
TN3019	140	80	7	0.75	0.5		0.01	90	50	1	10	0.2	1.1	150	12	100	50		TO-237-2			
									90	10	10	0.5		500								
									100	300	150											
									50		500											
									15	1000	10											

\* hFE value are K.

# TO-237 Plastic Package Transistors (NPN)

CDIL

Maximum Ratings							Electrical Characteristics (Ta=25°C, Unless Otherwise Specified)																
Type No.	V <sub>CB0</sub> (V)	V <sub>CE0</sub> (V)	V <sub>EB0</sub> (V)	P <sub>D</sub> (W)	I <sub>C</sub> (A)	I <sub>CM</sub> (A)	I <sub>CB0</sub> (μA)	V <sub>CB</sub> (V)	h <sub>FE</sub> @		I <sub>C</sub> & V <sub>CE</sub> (mA) (V)		V <sub>CE(SAT)</sub> (V) & V <sub>BE(SAT)</sub> (V)		I <sub>C</sub> (mA)	C <sub>ob</sub> (pF)		f <sub>t</sub> (MHz)		I <sub>C</sub> (mA)	t(off) (ns)	CDIL Case Style	
	Min	Min	Min	@Tc=25°C			Max		Min	Max	Min	Max	Max	Min	Max	Typ	Max	Min	Typ	Max	Max		
TN3020	140	80	7	0.75	0.5		0.01	90	30	100	1	10	0.2	1.1	150	12	80		-50				TO-237-2
									40	120	10	10	0.5	500									
									40	120	150	10											
									30	100	500	10											
									15		1000	10											
TN3053	60	40	5	0.75	0.5		0.25	30	25		150	2.5	1.4	1.7	150	15	100						TO-237-2
									50	250	150	10											
TN3742	300	300	7	0.75	0.5		0.2	200	10		3	10	0.75	1	10	3	30						TO-237-2
									15		10	10	1	1.2	30								
									20	200	30	10											
									20		50	20											

# CDIL TO-237 PLASTIC PACKAGE TRANSISTORS (PNP)

Maximum Ratings						Electrical Characteristics (Ta=25°C, Unless Otherwise Specified)															
Type No.	V <sub>CB0</sub> (V)	V <sub>CEO</sub> (V)	V <sub>EB0</sub> (V)	P <sub>D</sub> (W)	I <sub>C</sub> (A)	I <sub>CM</sub> (A)	I <sub>CB0</sub> (μA)	V <sub>CB</sub> (V)	h <sub>FE</sub>	@	I <sub>C</sub> & (mA)	V <sub>CE</sub> (V)	V <sub>CE(SAT)</sub> (V) & (V)	V <sub>BE(SAT)</sub> (V)	I <sub>C</sub> @ (mA)	C <sub>ob</sub> (pF)	f <sub>t</sub> (MHz)	@	I <sub>C</sub> (mA)	t(off) (ns)	CDIL Case Style
	Min	Min	Min	@Tc=25°C			Max	Min	Max	Min	Max	Min	Max	Max	Min	Max	Typ	Max	Min	Typ	
2N6708	60	45	5	0.75	1.5		0.1	60	40		50	2	1		1000		50		50		TO-237-1
									40	250	250	2	0.5		500						
									25		500	2									
2N6709	80	60	5	0.75	1.5		0.1	80	40		50	2	1		1000		50		50		TO-237-1
									40	250	250	2	0.5		500						
									25		500	2									
2N6710	100	80	5	0.75	1.5		0.1	100	40		50	2	1		1000		50		50		TO-237-1
									40	250	250	2	0.5		500						
									25		500	2									
2N6726	40	30	5	0.75	2		0.1	40	55		10	1	0.5		1000		50		50		TO-237-2
									60		100	1									
									50	200	1000	1									
2N6727	50	40	5	0.75	1		0.1	50	55		10	1	0.5		1000		50		500	50	TO-237-2
									60		100	1									
									50	250	1000	1									
2N6728	60	60	5	0.75	1		0.1	40	80		50	1	0.35		250		50		50		TO-237-2
									50	250	250	1									
									20		500	1									
2N6729	80	80	5	0.75	1		0.1	60	80		50	1	0.35		250		50		50		TO-237-2
									50	250	250	1									
									20		500	1									
2N6730	100	100	5	0.75	1		0.1	80	80		50	1	0.35		250		50		50		TO-237-2
									50	250	250	1									
									20		500	1									
2N6732	100	80	5	0.75	1		0.1	80	100		10	2	0.35		350		50		50		TO-237-2
									100	300	350	2									
CIL916	160	160	5	0.75	0.05		0.1	160	50		1	10	0.6	1	20	3	3.5	50	80	10	TO-237-1
									90	400	10	10									
CIL916KA	160	160	5	0.75	0.05		0.1	160	50		1	10	0.6	1	20	3	0.5	50	80	10	TO-237-1
									200	400	10	10									
CIL916LA	160	160	5	0.75	0.05		0.1	160	50		1	10	0.6	1	20	3	3.5	50	80	10	TO-237-1
									135	270	10	10									
CIL916MA	160	160	5	0.75	0.05		0.1	160	50		1	10	0.6	1	20	3	3.5	50	80	10	TO-237-1
									90	180	10	10									
CIL928A	30	30	5	1	1.5		0.1	30	100	320	500	2	2		1500	3	30		120		TO-237-1
CIL928AO	30	30	5	1	1.5		0.1	30	100	200	500	2	2		1500	3	30		120		TO-237-1
CIL928AY	30	30	5	1	1.5		0.1	30	100	300	500	2	2		1500	3	30		120		TO-237-1
CIL1020	50	50	5	0.75	1.5	2	1	50	70	240	500	2	0.5		1000	40		100	500		TO-237-1
									40		1500	2									
CIL1020O	50	50	5	0.75	1.5	2	1	50	70	140	500	2	0.5		1000	40		100	500		TO-237-1
									40		1500	2									
CIL1020Y	50	50	5	0.75	1.5	2	1	50	120	240	500	2	0.5		1000	40		100	500		TO-237-1
									40		1500	2									
CP100	60	50	5	0.75	1		0.05	40	40	300	150	10	0.6		150				80		TO-237
CP100A	60	50	5	0.75	1		0.05	40	40	120	150	10	0.6		150				80		TO-237
CP100B	60	50	5	0.75	1		0.05	40	100	300	150	10	0.6		150				80		TO-237
CSA931	80	60	6	1	0.7		0.1	60	40	240	50	2	0.7	1.2	500			50	100	50	TO-237-1
CSA931O	80	60	6	1	0.7		0.1	60	70	140	50	2	0.7	1.2	500			50	100	50	TO-237-1
CSA931R	80	60	6	1	0.7		0.1	60	40	80	50	2	0.7	1.2	500			50	100	50	TO-237-1
CSA931Y	80	60	6	1	0.7		0.1	60	120	240	50	2	0.7	1.2	500			50	100	50	TO-237-1

# TO-237 PLASTIC PACKAGE TRANSISTORS (PNP)



Maximum Ratings							Electrical Characteristics (Ta=25°C, Unless Otherwise Specified)												
Type No.	V <sub>CB0</sub> (V)	V <sub>CE0</sub> (V)	V <sub>EBO</sub> (V)	P <sub>D</sub> (W)	I <sub>C</sub> (A)	I <sub>CM</sub> (A)	I <sub>CB0</sub> (μA)	V <sub>CS</sub> (V)	h <sub>FE</sub> @	I <sub>C</sub> & V <sub>CE</sub>	V <sub>CE(SAT)</sub> (V) & V <sub>BE(SAT)</sub> (V)	V <sub>BE(SAT)</sub> /I <sub>C</sub>	C <sub>cb</sub> (mA)	f <sub>T</sub> (pF)	f <sub>T</sub> (MHz)	I <sub>C</sub> (mA)	t(off) (ns)	CDIL (ns)	Case Style
	Min	Min	Min	@Tc=25°C			Max		Min Max	(mA) (V)	Max Min Max	@ (mA)	Typ Max	Min Typ Max	Max	Max	Max	Max	
CSA1013	160	160	6	0.9	1		1	150	60 320	200 5	1.5		500	35	15 50	200			TO-237-1
CSA10130	160	160	6	0.9	1		1	150	100 200	200 5	1.5		500	35	15 50	200			TO-237-1
CSA1013R	160	160	6	0.9	1		1	150	60 120	200 5	1.5		500	35	15 50	200			TO-237-1
CSA1013Y	160	160	6	0.9	1		1	150	160 320	200 5	1.5		500	35	15 50	200			TO-237-1
CTN369		20	5	0.75	0.5		10	25	50 85 60	5 1000 1	0.5		1000	45	60	10			TO-237
CTN491	200	200	6	0.75	0.5		0.1	160	25 40	1 10 10	2	2	20		50	10			TO-237
CTN492	250	250	6	0.75	0.5		0.1	200	25 40	1 10 10	2	2	20		50	10			TO-237
CTN493	300	300	6	0.75	0.5		0.1	200	25 40	1 10 10	2	2	20		50	10			TO-237
CTN636	45	45	5	1	1	1.5	10	30	25 40 25	5 250 500	2 2 2	0.5 1	1	9	130	1000			TO-237
CTN640	100	80	5	1	1	1.5	10	30	25 40 25	5 160 500	2 2 2	0.5 1	1	9	130	10			TO-237
TN369		20	5	2.5			10	25	50 85 60	5 375 1000	10 1 1	0.5	1000	45	60	10			TO-237-2
TN636	45	45	5	0.75	1		0.1	30	40 25	250 150 500	2 2	0.5	500		130				TO-237-2
TN638	60	60	5	0.75	1		0.1	30	40 25	160 150 500	2 2	0.5	500		130				TO-237-2
TN640	100	80	5	0.75	1		0.1	30	50 25	160 150 500	2 2	0.5	500		130				TO-237-2
TN2904A	60	60	5	0.75	0.6		0.01	50	40 40 40 40	0.1 1 10 120 150 500	10 10 10 10	0.4 1.6	1.3 2.6	150 500	8	200	50	175	TO-237-2
TN2905	60	40	5	0.75	0.6		0.02	50	30 100 75 50 35	500 300 10 1 0.1	10 10 10 10	0.4 1.6	1.3 2.6	150 500	8	200	50	200	TO-237-2
TN2905A	60	60	5	0.75	0.6	0.6	0.01	50	50 100 100 100 75	500 300 10 1 0.1	10 10 10 10	0.4 1.6	1.3 2.6	150 500	8	200	50	200	TO-237-2
TN4030	60	60	5	0.75	0.5		0.05	50	30 40 25 15	0.1 120 100 500 1000	5 5 5 5	0.5 0.15 1	500 150 1000	20	100	400	50		TO-237-2
TN4033	80	80	5	0.75	0.5		0.05	60	75 100 70 25	0.1 300 100 500 1000	5 5 5 5	0.15 0.5	150 500	20	150	500	50		TO-237-2
TN4036	90	65	7	0.75	0.5		0.02	60	20 40 20	0.1 140 150 500	10 10 10	0.65	1.4	150	30	60	50		TO-237-2



# CDIL TO-237 PLASTIC PACKAGE TRANSISTORS (PNP)

Maximum Ratings							Electrical Characteristics (Ta=25°C, Unless Otherwise Specified)												
Type No.	V <sub>CB0</sub> (V)	V <sub>CEO</sub> (V)	V <sub>EBO</sub> (V)	P <sub>D</sub> (W)	I <sub>C</sub> (A)	I <sub>CM</sub> (A)	I <sub>CB0</sub> (μA)	V <sub>CB</sub> (V)	h <sub>FE</sub> @	I <sub>C</sub> & V <sub>CE</sub>	V <sub>CE(SAT)</sub> (V) & V <sub>BE(SAT)</sub> (V)	V <sub>BE(SAT)</sub> /I <sub>C</sub> @ (mA)	C <sub>ob</sub> @ (mA)	f <sub>T</sub> (MHz)	t <sub>off</sub> (ns)	CDIL (ns)	Case Style		
	Min	Min	Min	@Tc=25°C			Max		Min Max	(mA) (V)	Max Min Max		Typ Max	Min Typ Max	Max	Max			
TN4037	60	40	7	0.75	0.5		0.25	60	15	1	10		150	30	60	200	50	TO-237-2	
TN4234	40	40	7	0.75	1		100	40	40	100	1	0.6	1.5	1000	100	3	100	TO-237-2	
									30	150	250								1
									20	500	1								
									10	1000	1								
TN4235	60	60	7	0.75	1		100	60	40	100	1	0.6	1.5	1000	100	3	100	TO-237-2	
									30	150	250								1
									20	500	1								
									10	1000	1								
TN4236	80	80	7	0.75	1		100	80	40	100	1	0.6	1.5	1000	100	3	100	TO-237-2	
									30	150	250								1
									20	500	1								
									10	1000	1								
TN4314	90	65		0.75	0.5		0.25	60	15	1	10		150	60		50	TO-237-2		
									50	250	150	10							