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2N1613
2N1711
2N1893

NPN Silicon Transistor
JEDEC TO-39 case

DESCRIPTION

2N1613, 2N1711, and 2N1893 are Silicon NPN Planar Epitaxial Transistors designed for small signal general purpose and switching applications.

MAXIMUM RATINGS (T_A=25°C unless otherwise noted)

		2N1613	2N1711	2N1893	
Collector-Base Voltage	V_{CBO}	75	75	120	Vdc
Collector-Emitter Voltage	V_{CEO}	-	-	80	Vdc
Collector-Emitter Voltage	V_{CER}	50	50	100	Vdc
Emitter-Base Voltage	V_{EBO}	7.0	7.0	7.0	Vdc
Collector Current-Continuous	I_C		500		mAdc
Power Dissipation	P_T		0.8		watts
Power Dissipation, T_C=25°C	P_T		3.0		watts
Operating and Storage Junction Temperature	T_J,T_{stg}		-65 to +200°C		

ELECTRICAL CHARACTERISTICS (T_A=25°C)

Symbol	Test Conditions	2N1613 Min	2N1613 Max	2N1711 Min	2N1711 Max	2N1893 Min	2N1893 Max	Unit
I_{CBO}	V_{CB}=60V		10		10		-	nA
I_{CBO}	V_{CB}=90V		-		-		10	nA
I_{EBO}	V_{EB}=5.0V		10		5		10	nA
BV_{CBO}	I_C=100uA	75		75		120		V
BV_{CEO}	I_C=10mA					80		V
BV_{CER}	I_C=10mA, R_{BE}=10 OHMS	50		50		100		V
BV_{EBO}	I_E=100uA	7.0		7.0		7.0		V
V_{CE}(s)	I_C=50mA, I_B=5mA		-		-		1.2	V
V_{CE}(s)	I_C=150mA, I_B=15mA		1.5		1.5		5.0	V
V_{BE}(s)	I_C=50mA, I_B=5mA		-		-		0.9	V
V_{BE}(s)	I_C=150mA, I_B=15mA		1.3		1.3		1.3	V
h_{FE}	V_{CE}=10V, I_C=10uA	-		20		-		-
h_{FE}	V_{CE}=10V, I_C=100uA	20		35		20		-
h_{FE}	V_{CE}=10V, I_C=10mA	35		75		35		-
h_{FE}	V_{CE}=10V, I_C=150mA	40	120	100	300	40	120	-
h_{FE}	V_{CE}=10V, I_C=500mA	20		40		-		-
f_T	V_{CE}=10V, 50mA, f=20 MHz	60		70		50		MHz
Cob	V_{CB}=10V. f=100 KHz		25		25		15	pF
Cib	V_{BE}=0.5., f=100 KHz		80		80		85	pF
NF	V_{CE}=10V, I_C=300uA, f=1.0 KHz		12		8.0		-	dB