



HS13009

TRANSISTOR (NPN)

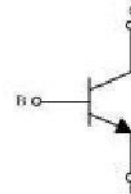
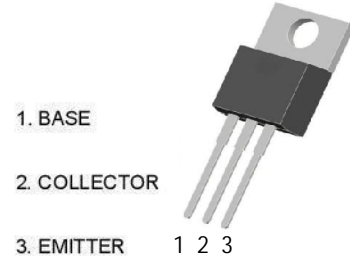
TO-220

FEATURES

- Power switching applications

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

Symbol	Parameter	Value	Unit
V _{CBO}	Collector-Base Voltage	700	V
V _{CEO}	Collector-Emitter Voltage	400	V
V _{EBO}	Emitter-Base Voltage	9	V
I _C	Collector Current -Continuous	12	A
P _C	Collector Power Dissipation	2	W
T _J	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55~150	°C



ELECTRICAL CHARACTERISTICS (T_a=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V _{(BR)CBO}	I _C = 1mA, I _E =0	700			V
Collector-emitter breakdown voltage	V _{(BR)CEO}	I _C =10mA, I _B =0	400			V
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E =1mA, I _C =0	9			V
Collector cut-off current	I _{CBO}	V _{CB} =700V, I _E =0			100	μA
Collector cut-off current	I _{CEO}	V _{CE} =400V, I _B =0			100	μA
Emitter cut-off current	I _{EBO}	V _{EB} =9V, I _C =0			100	μA
DC current gain	h _{FE(1)}	V _{CE} =5V, I _C = 5A	10		40	
	h _{FE(2)}	V _{CE} =5V, I _C =8A	5			
Collector-emitter saturation voltage	V _{CE(sat)1}	I _C =2A, I _B =0.4A			0.5	V
	V _{CE(sat)2}	I _C =5A, I _B =1A			1	V
	V _{CE(sat)3}	I _C =8A, I _B =2A			2	V
Base-emitter saturation voltage	V _{BE(sat)1}	I _C =2A, I _B =0.4A			0.6	V
	V _{BE(sat)2}	I _C =5A, I _B =1A			1	V
Storage time	t _S	I _C =500mA (UI9600)	3		6	μs
Fall time	t _f	I _C =500mA (UI9600)			0.5	μs
Transition frequency	f _T	V _{CE} =10V, I _C =0.5A, f=1MHz	4			MHz

CLASSIFICATION OF h_{FE(1)}

Range	10-15	15-20	20-25	25-30	30-35	35-40
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CLASSIFICATION OF t_S

Rank	A	B	C
Range	3-4(μs)	4-5(μs)	5-6(μs)

Typical Characteristics

