

TO-220 Plastic-Encapsulate Transistors

13009 TRANSISTOR (NPN)

FEATURES

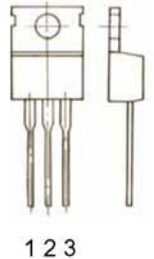
- power switching applications

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

Symbol	Parameter	Value	Units
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

TO-220

- BASE
- COLLECTOR
- EMITTER



ELECTRICAL CHARACTERISTICS (T_{amb}=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}	V _{CE} =5V, I _C =3A	8		40	
Collector-emitter saturation voltage	V _{CE(sat)}	I _C =8A, I _B =1.6A			1.5	V
Base-emitter saturation voltage	V _{BE(sat)}	I _C =8A, I _B =1.6A			1.6	V
Transition frequency	f _T	V _{CE} =10V, I _C =500mA, f =1MHz	4			MHz
Fall time	t _f	I _C =8A, I _{B1} =-I _{B2} =1.6A			0.9	μs
Storage time	t _s	V _{CC} =125V			4	μs

CLASSIFICATION OF h_{FE}

Rank						
Range	8-15	15-20	20-25	25-30	30-35	35-40