



TO-220-3L Plastic-Encapsulate Transistors

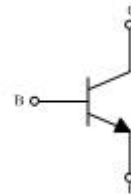
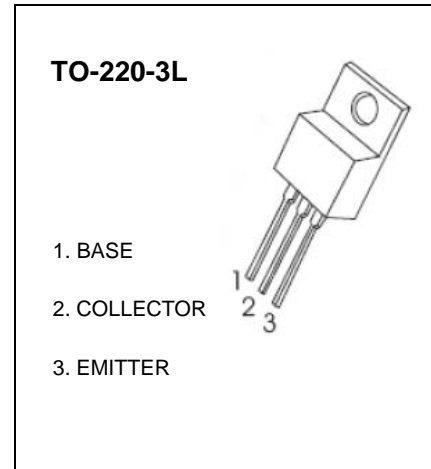
3DD13005 TRANSISTOR (NPN)

FEATURES

- power switching applications

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

Symbol	Parameter	Value	Unit
V _{CB0}	Collector-Base Voltage	700	V
V _{CE0}	Collector-Emitter Voltage	400	V
V _{EBO}	Emitter-Base Voltage	9	V
I _C	Collector Current -Continuous	4	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	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			1	mA
Collector cut-off current	I _{CEO}	V _{CE} = 400V, I _B =0			0.1	mA
Emitter cut-off current	I _{EBO}	V _{EB} =7V, I _C =0			0.05	mA
DC current gain	h _{FE1}	V _{CE} = 5V, I _C = 1A	10		60	
	h _{FE2}	V _{CE} = 5V, I _C = 10mA	5			
	h _{FE3}	V _{CE} = 5V, I _C = 2A	8		40	
Collector-emitter saturation voltage	V _{CE (sat)1}	I _C =1A, I _B =0.2A			0.3	V
	V _{CE (sat)2}	I _C =4A, I _B =1A			0.8	V
Base-emitter saturation voltage	V _{BE (sat)}	I _C =2A, I _B =0.5A			1.6	V
Transition Frequency	f _T	V _{CE} =10V, I _C =500mA, f =1MHz	5			MHz
Fall time	t _f	I _{B1} =-I _{B2} =0.4A, I _C =2A, V _{CC} =120V			0.6	μs
Storage time	t _s	I _C =0.25A	1.8		6.6	μs

CLASSIFICATION OF h_{FE1}

Rank										
Range	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50	50-55	55-60