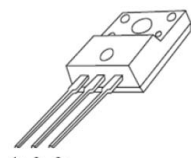


TO-220F Plastic-Encapsulate Transistors

3DD13003F TRANSISTOR (NPN)

TO-220F

- 
1. BASE
2. COLLECTOR
3. EMITTER

FEATURE

- Power Switching Applications

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

Symbol	Parameter	Value	Unit
V _{CB0}	Collector-Base Voltage	700	V
V _{CEO}	Collector-Emitter Voltage	400	V
V _{EBO}	Emitter-Base Voltage	9	V
I _c	Collector Current -Continuous	1.5	A
P _c	Collector Dissipation	2	W
R _{θJA}	Thermal Resistance from Junction to Ambient	62.5	°C/W
T _J , T _{stg}	Junction and 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 = 5mA, 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 = 2mA, 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			0.5	mA
Emitter cut-off current	I _{EBO}	V _{EB} =9V, I _C =0			1	mA
DC current gain	h _{FE(1)}	V _{CE} =5V, I _C =0.5 A	8		40	
	h _{FE(2)}	V _{CE} =5V, I _C =1.5 A	5			
Collector-emitter saturation voltage	V _{CE(sat)}	I _C =1A, I _B =250mA			0.6	V
Base-emitter saturation voltage	V _{BE(sat)}	I _C =1A, I _B =250mA			1.2	V
Transition frequency	f _T	V _{CE} =10V, I _C =100mA f =1MHz	5			MHz
Fall time	t _f	I _C =1A, I _{B1} =-I _{B2} =0.2A V _{CC} =100V			0.5	μs
Storage time	t _s	I _C =250mA	2		4	μs

CLASSIFICATION OF h_{FE(1)}

Rank							
Range	8-10	10-15	15-20	20-25	25-30	30-35	35-40

CLASSIFICATION OF t_s

Rank	A1	A2	B1	B2
Range	2-2.5 (μs)	2.5-3(μs)	3-3.5(μs)	3.5-4 (μs)