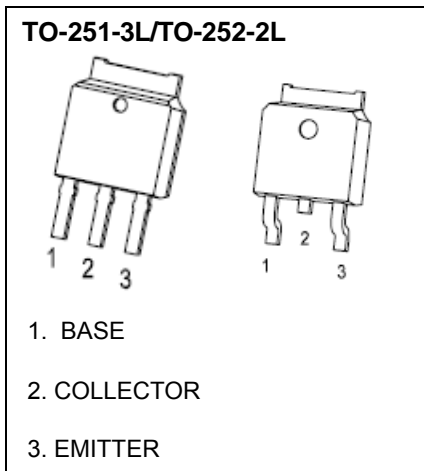


TO-251-3L/TO-252-2L Plastic-Encapsulate Transistors

3DD13003 TRANSISTOR (NPN)

FEATURES

power switching applications



MAXIMUM RATINGS($T_A=25^\circ\text{C}$ 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	1.5	A
P_c	Collector Dissipation	1.25	W
T_J, T_{stg}	Junction and Storage Temperature	-55~+150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=1\text{mA}, I_E=0$	700			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=10\text{mA}, I_B=0$	400			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=1\text{mA}, I_C=0$	9			V
Collector cut-off current	I_{CBO}	$V_{CB}=700\text{V}, I_E=0$		μA	1mA	A
Collector cut-off current	I_{CEO}	$V_{CE}=400\text{V}, Q=0$		μA	5mA	A
Emitter cut-off current	I_{EBO}	$V_{EB}=9\text{V}, I_C=0$			μA	A
DC current gain	$h_{FE(1)}$	$V_{CE}=5\text{V}, I_C=0.5\text{A}$	8		40	
	$h_{FE(2)}$	$V_{CE}=5\text{V}, I_C=1.5\text{A}$	5			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=1\text{A}, I_B=250\text{mA}$			μV	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=1\text{A}, I_B=250\text{mA}$			1.2	V
Base-emitter voltage	V_{BE}	$I_E=2\text{A}$			3	V
Transition frequency	f_T	$V_{CE}=10\text{V}, I_C=100\text{mA}$ $f=1\text{MHz}$	5			MHz
Fall time	t_f	$I_C=1\text{A}, I_{B1}=-I_{B2}=0.2\text{A}$ $V_{CC}=100\text{V}$			0.5	μs
Storage time	t_s					

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 (s)	μs 2.5-3(s)	μs 3-3.5(s)	3.5-4 (s)