



TO-92 Plastic-Encapsulate Transistors

3DD13002N46 TRANSISTOR (NPN)

FEATURE

- Power Switching Applications

MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

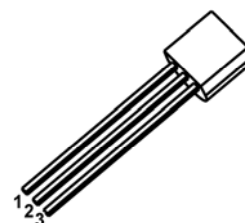
Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	600	V
V_{CEO}	Collector-Emitter Voltage	500	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current -Continuous	0.8	A
P_C	Collector Power Dissipation	0.8	W
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	156	$^{\circ}\text{C/W}$
T_J	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55~150	$^{\circ}\text{C}$

TO-92

1.EMITTER

2. COLLECTOR

3. BASE



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

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}, I_E=0$	600			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, I_B=0$	500			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu\text{A}, I_C=0$	6			V
Collector cut-off current	I_{CBO}	$V_{CB}=600\text{V}, I_E=0$			100	μA
	I_{CEO}	$V_{CE}=500\text{V}, I_B=0$			100	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=6\text{V}, I_C=0$			100	μA
Dc current gain	h_{FE1}	$V_{CE}=10\text{V}, I_C=200\text{mA}$	9		40	
	h_{FE2}	$V_{CE}=10\text{V}, I_C=0.25\text{mA}$	5			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=200\text{mA}, I_B=40\text{mA}$			0.5	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=200\text{mA}, I_B=40\text{mA}$			1.1	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				2.5	μs

CLASSIFICATION OF h_{FE1}

Range	9-15	15-20	20-25	25-30	30-35	35-40
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